Sucden Financial

Quarterly Metals Report

Q1 — February 2023

Analysis and Forecasts for Base Metals, Precious Metals, Iron Ore & Steel

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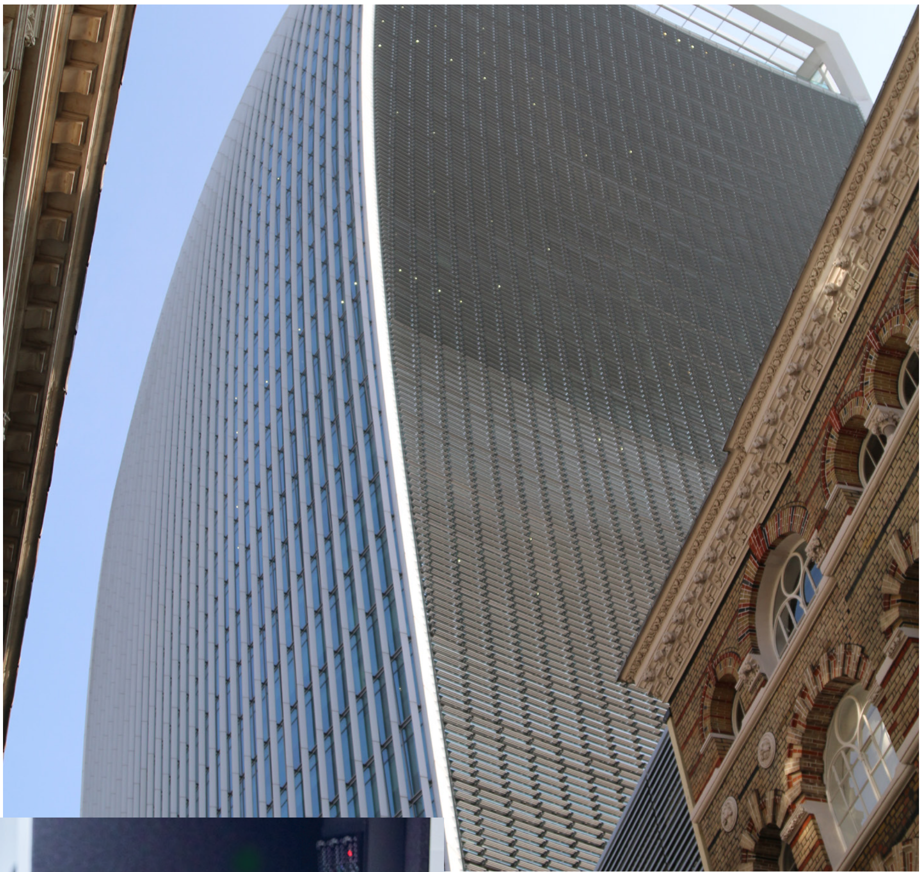

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Summary

The rally we saw in Q4 2022 and the first weeks of 2023 has stalled, as China's re-opening has not triggered a large increase in consumption and is a services play, as well as the Fed remaining hawkish on rates. The dollar has firmed, causing metals to weaken, highlighting the fragility of move higher. Spreads are in contango, Chinese prices are mostly in discount, and weaker premiums suggests a cautious market. A soft landing in the U.S., would boost sentiment, but fundamentally Chinese demand needs to return in order to sustain a meaningful rally. We believe stimulus measures in China are likely to be targeted at services and the consumer, capping consumption. Markets are macro focused at the moment, and with the near-term outlook uncertain, upside moves are unlikely to be sustained until demand returns in a meaningful way.

Aluminium (Al)
Aluminium benefitted by the year-end from the Chinese government announcing the removal of lockdown restrictions. The sentiment has continued into the start of this year, but a traditionally quiet Chinese New Year season has meant prices found support at $2,350/t levels. Growing domestic stockpiles in China and weaker overseas demand meant that consumers avoided committing to long-term contracts for now, with bulls waiting for another quarter before joining the trade. A key debate will be whether China's reopening will coincide with a sharp drop in global demand and whether rebounding supply will help to replenish the country's reserves. We expect aluminium to benefit from China reopening trade, gaining ground to $2,800/t.

Copper (Cu)
Copper corrected sharply in recent sessions as NFPs prompted a rally in the USD. Cash to 3-month spreads are in contango, and prices are struggling to rally as Chinese consumption is lacklustre and the re-opening looks to be a services play. Local prices are at a discount, and the underlying is falling; with low premiums, the re-opening is not up to the market hype. We believe stimulus may be targeted at the consumer to improve consumer confidence. Supply-side woes in Latin America are not significantly impacting prices as concentrate availability in China is sufficient. Improvement in US and Chinese data will boost prices, economic growth in China will be higher Y/Y, and entry between $8,500-$8,700/t are reasonable, with an upside towards $9,750/t on a softer dollar and improving China data.

Lead (Pb)
Lead benefitted from increased appetite ahead of the end of the year, amid downstream restocking in China. The supply story in the region is now diverging, with primary suppliers output marginally unchanged, while secondary smelters will remain closed throughout the holiday period, meaning further build-up of stocks and weaker domestic prices. Lead, in line with other base metals, will benefit from China reopening optimism, but the longer-term trend of diminishing secondary material availability, given the slowing NEV turnover, creates a bigger surplus in material balance. Range: $2,000-2,360/t.

Nickel (Ni)
Social inventories of refined nickel in China have decreased in the last few weeks as demand picked up after the holiday. The levy from the Philippines would increase smelting costs in China, but they want to export the value-added good, and promote investment, like Indonesia. NPI output in Indonesia is expected to rise in 2023 and was up 28.9% Y/Y in 2022. NPI production in China is struggling to keep pace, and Indonesia will continue to be the dominant force. Stainless steel demand will improve, but not exponentially; the price of stainless products is high, which could reduce downstream consumption unless the product is needed. We believe EV demand will start slowly this year, but the inflexion point has been reached, and sales will still grow. We do not expect nickel prices to replicate recent gains and anticipate the rally will wane and prices to hit $24,630/t.

Tin (Sn)
Tin prices have benefited from a softening dollar and optimism surrounding the Chinese economy and material demand. Some economists suggest that a soft landing is possible, and if this is the case, demand will improve in H2 2023. Sales and CAPEX figures for the semiconductor sector are set to soften in H1 2023; however, AI will boost chips in the long run. Demand from the solar industry will also continue to improve as installations increase. The availability of raw materials in China has been weaker, but the arb window is open, and this will cause materials to flow into China. Inventories have surged higher in China, exchange, and social inventories, highlighting a softer demand outlook. While the macro suggests a weaker outlook in H1 2023, the softer dollar and China re-opening have prompted a rally. The spreads point to a balanced market, with near-term calendar spreads in contango. This suggests lower prices in the near term back to $24,000/t, with the spreads showing a balanced market.

Zinc (Zn)
Ore and concentrate imports into China have been more significant, and we expect a sur-plus in this sector in 2023. The bottlenecks remain at smelters, but the profitability is improving, and we do not expect supply constraints for too much longer. Utilisation rates will rise in Europe, improving availability and visible stocks as demand slows. We expect the euphoria around China re-opening will continue in the near term, but the direction of Chinese stimulus is imperative. Stimulus targeted at consumer-led industries will not be conducive to zinc demand compared to traditional infrastructure-led expenditure. We expect spreads to remain in backwardation in the near term and Chinese prices to switch to premium as downstream demand returns after the holiday. We believe zinc prices will soften into Q2 towards $2,775/t as refined capacity comes back online.

Iron Ore & Steel
Steel margins are low, which has capped output; however, due to low growth in steel-intensive industries, demand has been soft. The property sector, at its height, contributed to 28% of GDP. This is a crucial sector for steel demand, with people expecting further losses in the property market, as demand is poor and policy measures will not compensate for cash flow losses. Iron ore shipments have been low recently, and seaborne premiums are low; the shipping sector confirms this. Brazil's prices have increased due to supply disruption and low material availability in China. The euphoria around China's re-opening has boosted sentiment, but if the stimulus is not directed to traditional sectors, steel consumption will not increase significantly. This would cause prices to correct in Q2, as demand disappoints; this may be more likely in Q3 as the expectation of more robust demand carries sentiment in Q2. In the near term, we expect prices to push to £130/t and steel prices to remain supported, but Q2 could be a different story.

Gold (Au)
Gold prices have rallied in recent months, as yields started to fall in line with inflation and growth expectations. In our opinion, inflation will be upwardly sticky as higher rates will keep fixed costs high, with rents, mortgages, and business rates remaining high. The bout of redundancies we are starting to see increases the probability of stagflation, despite strong NFPs. The decline in yields will give rise to gold, and while investors are starting to price in rate cuts too soon, this trend will benefit gold and potentially stocks depending on their balance sheet and margins. The rally in the dollar has hinted at the fragility of the recent gains, we expect this theme to continue but are favourable to gold in 2023. Especially if central banks continue to purchase at their current rate and consumer demand rises in India and China. We favour buying dips in the December gold contract (COMEX), especially below $1,900/oz.

Silver (Ag)
Silver, in line with gold, will continue to benefit from a cooler pace of monetary policy tightening set to take place this year. We do not expect inflation to reach target levels in the near term, and terminal rates from key central banks will remain higher for longer. Moreover, with silver's industrial demand taking up an incrementally bigger portion of demand, China's reopening will help boost silver metals prices later in the quarter, pushing the prices to $22.50-25.00/oz.

Palladium (Pd)
Palladium underperformed compared to platinum, given the substitution trend that has diminished the metal uptake in recent months. We have seen a shift to used vehicles in place of new autos. However, the demand for new purchases is diminishing, given a softening level of savings. Moreover, with recessionary fears still on the table, many will not choose to renew their purchases, and it may take a while for purchased vehicles to return to the market for scrapping. We expect palladium to remain on the back foot. Range:$1,500-1,850/oz.

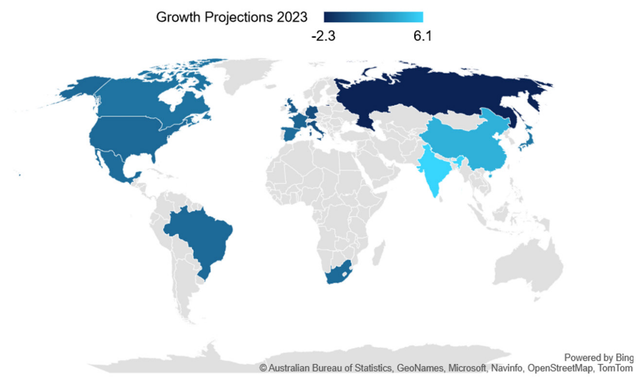
Platinum (Pt)
Platinum followed other precious metals, gaining ground during the quarter, further narrowing the cross with palladium. Industrial use drove the demand for prices performance in recent months, and we expect this trend to continue in Q1'23. Still, the outlook for the year ahead differs from now - gross demand is expected to grow, as the advantages of platinum substitution into gasoline autocatalysts outweigh the assumed declines in jewellery and industrial utilisation. Range: $950-1,050/oz.

Market Overview

Global Outlook: The global economic slowdown is underway, and the main question driving market sentiment is whether the world's biggest economies will enter a recession. As central banks continued their aggressive tightening campaigns, the consensus view that the recession is inevitable continued to climb, with some probability forecasts as high as 100% for the US economy in October. With the tightening cycle still not over, more pain is to come, and the real impacts of previous hikes are still to filter through the economies. Adding lingering geopolitical risks, energy uncertainty in Europe, and the reopening in China, we are likely to see a further divergence in performance this year. While sentiment has improved in January following the softening inflation pressures, we believe markets are calling victory on a recession too early. Policies to address these shortfalls will also start to diverge throughout the year, and opportunities could arise when assessing individual countries' performances, not economic trends. Still, a souring economic outlook is universal this year as nations brace themselves for one of the most anticipated economic contractions of all time. A pivot is coming sometime this year, but for that to materialise, more weakness from the consumer and labour market sectors is necessary for the near term.

IMF 2023 Growth Projections

Most of the developed world is set to stagnate this year.

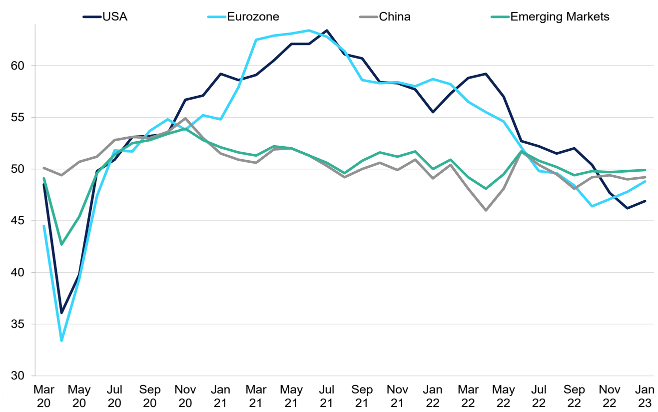


Oil: Oil futures fluctuated during the last quarter of 2022, driven by the combination of geopolitical and economic factors. The trend has reversed since the start of the year, with higher-than-expected temperatures driving the softness in demand outlook. Likewise, the impact of further signs of reopening from China had a limited impact on oil, as the economy stockpiled 14.50m bpd ahead of the energy boom. With the Lunar New Year celebrations traditionally a quieter season, the demand side of the outlook from Asia has been muted. Russia continues to export its oil supply overseas. China bought 0.98m bl/d on average in recent weeks, a slight increase from 0.87m bl/d seen by the end of the year. And while Russian crude exports soared to the highest level since April, the oil price cap at $60/bl meant that export revenues plunged to 2-year lows. Ural's crude traded at $46/bl in the last month, complying with the G7 price cap. Since December, European-owned tankers have taken about 30% of the cargoes shipped from Russia's ports, down from about 50%. By contrast, the share of Russian vessels has risen to 35%, up from 22% previously, with speculation of a growing shadow fleet transferring the cargo. With Russian flows declining, the largest source of non-OPEC production growth this year will come from the US, contributing to 40% of the change. However, uncertainty over Russia's oil supply will persist, particularly in early 2023. Ongoing concerns about global economic conditions increase the uncertainty of the worldwide demand picture, and as global oil inventories build, this will create downward pressure on crude oil prices over 2023. For Q1, with China being the powerhouse of energy consumption, the outlook for oil futures is cautiously optimistic.

PMIs: Preliminary January figures surprised to the upside, with both the US and Europe seeing significant improvements in manufacturing performance. A variety of factors, including slowing inflation, warmer-than-usual winter months, and continued improvements in supply chain conditions, meant that confidence jumped to multi-year highs. Still, demand continues to fall and is merely dropping at a reduced rate. Global manufacturing performance continued to decline, and although the rate of decline in production eased slightly, the level of new business fell at a sharper pace. New work in industrial hubs is once again declining, pushing the index down to 48.6, the 30-month low.

Developed Economies Manufacturing PMIs

We have seen some moderate upside on the back of easing inflationary expectations.



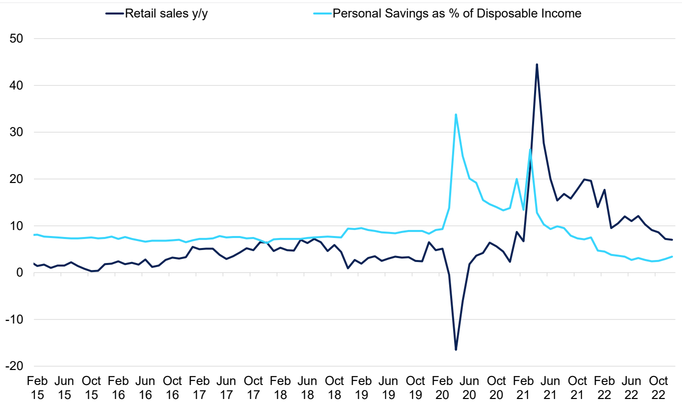
Source: Bloomberg

The US indicated a solid pace of contraction in December, falling to 2020 lows of 46.2. Demand for goods diminished as domestic orders and export sales dropped, underlying the prevailing weakness in the demand segment. Muted conditions also meant a downgraded forecast for stock build-up as producers are now adjusting to lower demand expectations. Growing uncertainty and tumbling demand point to challenges for manufacturers for the majority of 2023. The Euro area, on the other hand, saw a second consecutive monthly incline in manufacturing performance. Whilst still contractionary, EU PMI improved to 47.8, up from 46.4 in October. Improved market confidence was one of the main drivers behind the increase, and the number of optimists is now offsetting the pessimists, the first since August. The main headwinds for this year prevail with weaker demand meaning that manufacturers had to cut down on supply. China's manufacturing sector closed the year slightly lower at 49.4. Still, the prospects for 2023 are improving significantly, with confidence among businesses at a February high. With the economy taking a break for the Lunar New Year holidays, we expect March performance to break slightly into expansionary. However, the upside momentum is not sustainable, and we will see manufacturing performance stabilise in the longer term.

US: The US economy, albeit slowing, continues to show signs of resilience in the face of a tighter monetary policy environment, with supply chain conditions continuing to ease and input prices falling amid slower demand. While spending on non-essential goods and consumer spending habits remain broadly unchanged. In particular, the service industry outperformed in January and rebounded from the lows of 44.70 in January to 46.60 as appetite improved. Even though it was still in contractionary territory, the level exceeded market expectations. While the balance sheet's savings are below the long-term average, American consumers continue to finance their spending through credit levels. The data shows that US consumer borrowing rose by $28bn in November, topping the median forecast of $25bn. Once consumers realise that inflation is here to stay, the impact on retail sales will become more widespread. By then, consumers would have already spent much of their savings. With the Fed's tightening and prospects of economic slowdown, the impact on the real economy will become more prevalent.

US Retail Sales vs Personal Savings as % Disposable Income

Only the Savings are on the rise once again as consumers pull back spending.

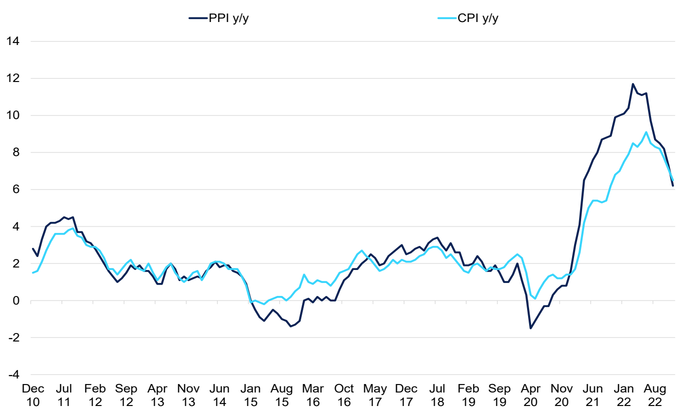


Source: US Census Bureau, Bureau of Economic Analysis

One of the main reasons for improving market sentiment in recent months is softer inflationary pressure. US CPI continues to ease, with the seventh consecutive decline in January, as shelter remains the driving factor behind price softness. The core performance remains resilient at 5.6%. At the same time, PPI is also declining rapidly, growing at 6.2% in December, in line with consumer prices, with lower demand and, consequently fewer orders driving the slowdown. Due to price pressure softening, the real average weekly earnings have been seen improving, from the lows of -4.3% in June to -3.1% in December. For now, wage increases are not keeping up with prices, and in nominal values, growth has stalled at 4.6% y/y. Our forecast is inflation cooling will slow in the coming months, but with China's reopening optimism, the prices could see another leg higher, boosting CPI month- on-month. Inflation rates will struggle to reach the target rates in the near term, and this year's decline is unlikely to be smooth, which could create another market in shock to the system that has not been priced in. Sentiment also improved, albeit the increase is not proportional to the fall in pricing expectations. This is mostly driven by the growing fears of the upcoming recession.

US CPI vs PPI y/y

Both indicators are softening from the summer highs in recent months.

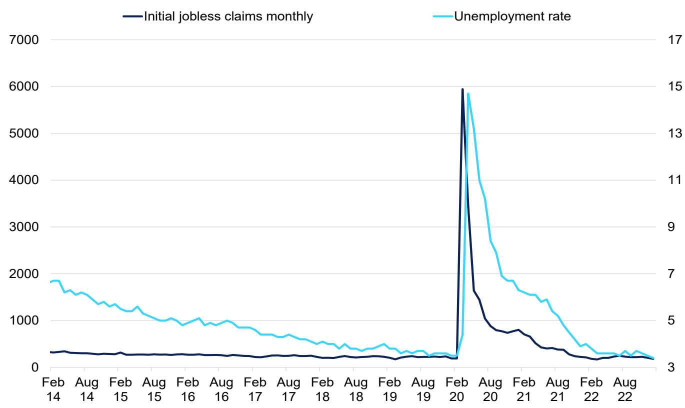


Source: Bureau of Labour Statistics

In line with the consumer sector, the labour market has remained resilient in the face of deteriorating economic and monetary conditions. While job openings continue to slow to 10.5m, the decline is much slower than the market initially anticipated. We expect changes in the labour market to be much narrower than in previous recessions as companies take a wait-and-see approach to employment. We have seen some banks and tech companies already cutting the workforce, but this is more likely due to overstaffing in previous years. US job openings and offers have now fallen well below the long-term average line, marking a non-cyclical slowdown in labour market hires. Still, the number of unemployed remains low, with US initial jobless claims at 190,000, slightly higher than the long-term average before the pandemic. Before anticipating deteriorating labour demand conditions, we are yet to see a protracted slowdown in job recruitment.

US Labour Market Conditions

Unemployment declined to a 53-year low in January, underscoring labour market resilience.



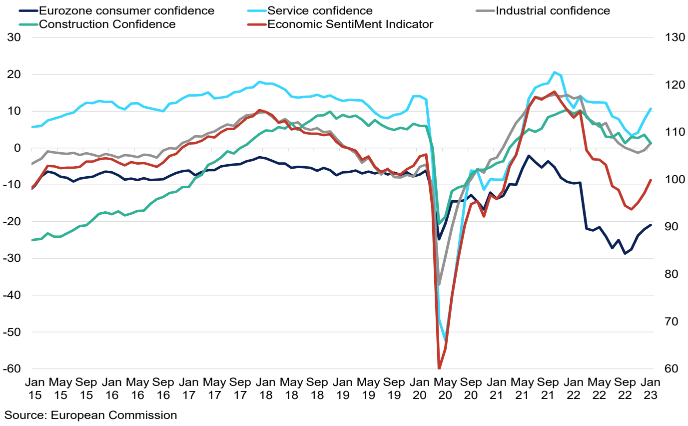
Source: Department of Labour, Bureau of Labour Statistics

The message from the Fed remains clear – to keep the interest rates higher for longer for the majority of 2023, with potential signs of easing in the latter part of the year. If this happens, we do not expect the moves to be as rapid as the pace of tightening we saw last year. At their latest meeting, policymakers increased the rate by 25bps after rate hikes of 75bps and 50bp. We anticipate further hikes with 25bps during the next meeting in March. Another hike would reaffirm the Fed's message of tackling inflation first before bracing for recession. The central bank's goal for most of this year would be a tight monetary policy environment while keeping the economy out of a severe recession. The officials anticipate rates to reach 5.1% this year. Still, continued weakness is inevitable, with real private domestic spending declining, tilting the risks to the downside.

Europe: By the end of 2022, the European economic forecast was overshadowed by fears of recession and a complete cut-off from Russian oil, putting into question the capacity to sustain through cold winter months. In January, the outlook changed; confidence improved across the board. January temperatures were mild, and the euro continued to climb against the dollar. The markets are calling a victory on recession too early, and we are likely to see the bloc's GDP underperform the Western counterparts. Meanwhile, natural gas prices fell to the lowest level since October 2021 at EUR 59/MWh after January's weather was the warmest in years. This is a complete reversal of what we saw in December when the cold streak raised concerns about the rapid depletion of natural gas reserves. But since stocks are still historically high, natural gas prices are likely to remain lower for most of February, boosting confidence that the continent can go through winter without shortages and blackouts. Still, the strain on the energy sector is not over, and the pressure felt by the bloc will continue to linger in the longer term. Even with colder temperatures now set to remain until March, we expect natural gas prices to stay at the current levels.

Eurozone Confidence Indicators

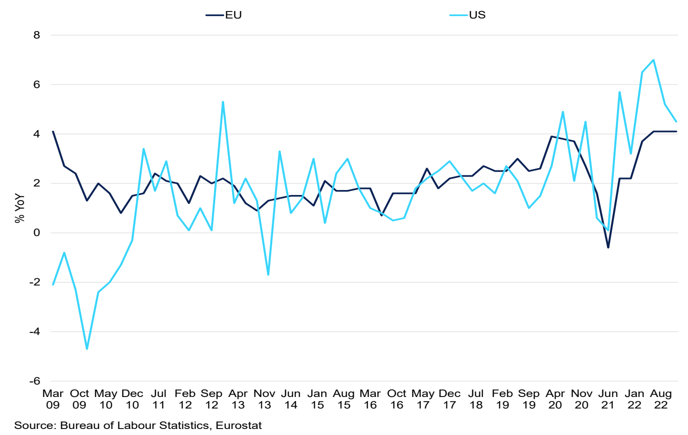
Confidence improved sharply in recent months on the back of easing inflationary expectations.



The most recent CPI figure pointed to a sharper-than-expected decline in inflationary pressures in December, with the level falling back below 10% into single digits. Still, core inflation continues to trace higher and is yet to show signs of softening. Core components are only just catching up with more volatile components and in line with the US, are set to stay elevated for longer. We do not expect CPI softness to be smooth, especially in Q1 2023, as changes in mortgage payments, rents, and any other annual contracts due for an update in prices are made. The main story for Europe in this quarter will be its divergence in economic and monetary policy moves as the bloc continues to deal with the aftermath of the energy crisis. The ECB is set to continue hiking the interest rates, with forward swaps currently pricing in a 50bps hike in March. As a result, European yields continue to climb, with January seeing the levels breach 2.5%. Weaker-than-expected inflation in the euro area, a decline in natural gas prices, and the prospect of a milder tightening by the Fed have given ECB policymakers some relief as they assess the prospects of further tightening in the coming months.

US vs EU Labour Costs

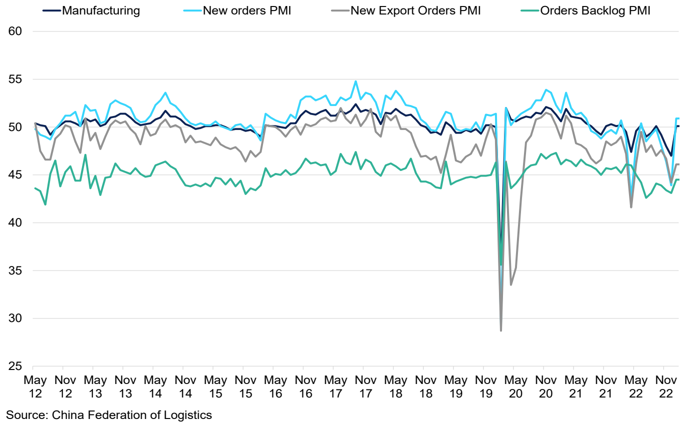
US Labour costs are declining faster-than-expected.



China: China's vow to reopen provided some relief to the market, with the base metals space performing strongly. Investors anticipate higher growth after the national holiday celebrations, but uncertainty about the spread of the virus and consumer behaviour will create a volatile exit for the economy, which has spent more than three years under tough restrictions. The removal of restrictions comes at a time when the economy is weak: consumer and business performance are at multi-year lows, while the property market is in a record slump. Overseas appetite for Chinese goods has also plummeted, with exports falling by 9.9% y/y. Little confidence in the economy's strength coupled with softening global demand has resulted in trade revenue falling sharply in recent months.

China Manufacturing PMI sub-indices

January data pointed to a slight improvement in the manufacturing sector.

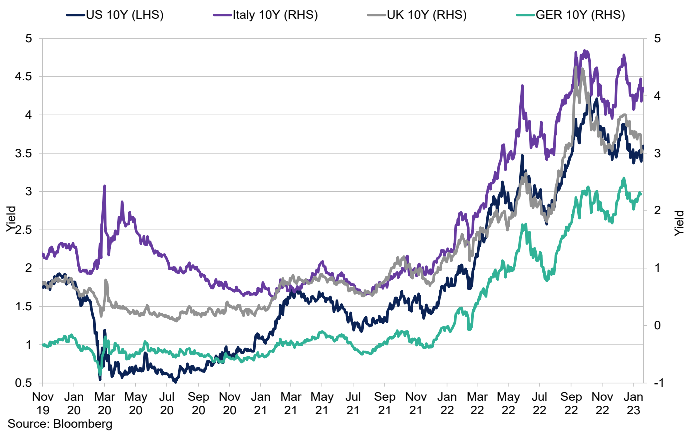


December data pointed to a significant economic slump in Chinese performance, with PMIs declining into lows not seen since February 2020, with other data suggesting the economy contracted in Q4 2022. Both industrial production and retail sales continued to decline, at 1.3 and -1.8% y/y, respectively. Still, the pace of contraction was narrower than expected, and consumers face the biggest hurdle to recover in the coming months. Given the holiday season, January-February is a traditionally slow quarter, but after China's New Year, we expect to see a spike in consumption, partly driven by the low base case compared to last year and partly by the pent-up demand expected to be unleashed. We expect prices to respond to a short-term shock to the demand side, but euphoria will fade eventually, and markets will focus on core economic indicators.

Emerging Markets: Emerging market economies were expected to outshine the developed world at the beginning of this year as the dollar continued to soften. China's reopening news is expected to drive the appetite for assets back to the EM space. Instead, the currency space saw one of the quietest periods in years, and the MSCI EM index gained marginal ground in January. Inflation remains a key concern for emerging economies, and even an ultra-hawkish monetary policy shift from central banks has failed to drive the protracted weakness in pricing pressures. Economies such as Brazil and South Africa continue to see their inflation levels high, at 5.8% and 7.2% y/y, respectively. In line with the developed economies, softer energy pressures have lifted sentiment across the board and drove the softness in month-on-month prices. Core inflation continues to creep higher, with shelter driving the general incline. Inflation is expected to recede later in 2023 due to lower fuel and food prices, although if it proves sticky, it could remain above the central bank targets. The continued softness in inflation, alongside a moderating economic growth outlook, could allow the EM central bank to focus on lowering rather than increasing interest rates. We expect emerging economies to shine this year.

Developed Economies 10yr Yields

Developed economies' monetary policy continues to drive the sentiment for emerging markets, given the divergence between economies' yields.



Aluminium

LME Aluminium 3MO ($)

Sentiment

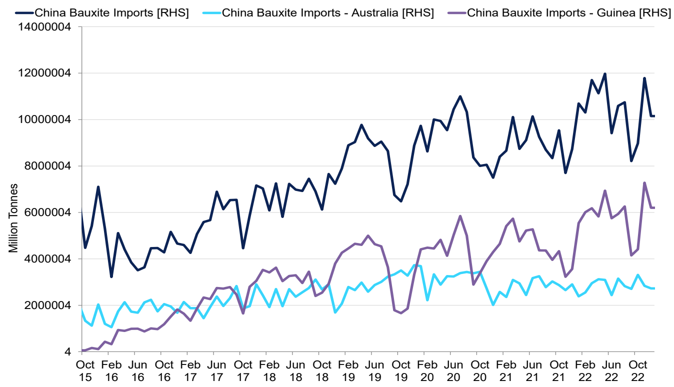
Power Outages	China's Recovery Story	China's Production	Chinese Property Market

Q4 Review: Aluminium gained ground during the quarter, rising by 11% from the start of October. In late December, China announced the lifting of lockdown restrictions, resulting in a jump above $2,500/t, and this trend has continued into the first month of the year. Still, for 2022, aluminium has had the worst year since 2018, as economic conditions in China deteriorated under the weight of the zero-COVID policy. The spreads continued to ease during the quarter, with the cash to 3-month falling to -$41.00/t, levels not seen since 2015, as market tightness eased in the face of easing domestic and global demand. Despite the prominent start to the year supported by market optimism, the power outages continue to cloud the outlook for supply capacity in the current quarter.

Outlook: Despite the reopening from Chinese lockdown restrictions earlier in January, the country is going through a traditionally quiet period, with Chinese New Year celebrations taking place through the majority of February. Therefore, we are unlikely to see tangible improvements in the market fundamentals until March. The supply picture is clouded by holiday celebrations and the continued impact of power rationing among some smelters, especially in the South-West. Many closed their operations for the holiday season earlier this year. Others have revised output goals downward for 2023, as domestic aluminium demand has been weaker than expected, especially from metal processors. Still, China finished the year on the front foot, with output reaching 3.44m mt in December. While down from summer highs of 3.5m mt, it is still up by 8.3% y/y, bringing the year's total to 40.08m mt, also up by 4.1% y/y. The domestic operating aluminium capacity was 40.43m mt, and the national operating rate averaged about 89.30%. The 2022 improvement was mainly driven by the production recovery in Yunnan and Inner Mongolia. Momentum slowed closer to the year-end, with the domestic power supply tightening in Q3, resulting in the shutdown of aluminium smelters in Sichuan and the energy consumption control in Yunnan.

China Bauxite Imports

Imports from Guinea drove the most recent decline of overall imports in China.



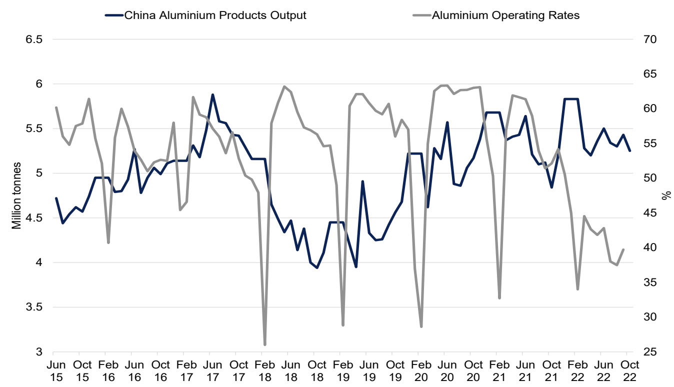
Source: Bloomberg, NBS, China Customs

In Q1 2023, these issues are set to prevail. While there are no national power restrictions over the winter season, provinces have delegated powers to manage their local power balances, and the smelter pressures have been mounting. Yunnan smelters are required to reduce their operating rates until May 2023. Guizhou imposed a second round of power rationing, which is estimated to affect roughly 0.64m mt of aluminium capacity. Upon coming back from the national holidays, we usually see a jump in operating rates back above 60%, but the overall output is likely to be below the figures that we saw in December. Many aluminium producers are looking to ramp up production as long as the power supply allows, and a recent price increase would bring profit margins to a healthy level. However, we do not expect this to occur until further into the year.

Bauxite imports jumped by 2.813m in November, with most of the gains coming from Guinea, ahead of the Indonesian bauxite ore ban set to take place in June. Given the ban on bauxite in 2014, China diversified its sources, and in 2022, the nation imported 17.8m mt of bauxite ore, of which Indonesia accounted for 15%. So, the impact of the ban will be less prominent, as Guinea and Australia will make up for the shortfall. In the meantime, other producers will likely help fill in the gap in domestic supply shortfall. In line with the bauxite rise, refined aluminium imports increased sharply in recent months, with November seeing a high of 110,678 mt. Refined aluminium imports from Russia rose more than threefold to 56,122 tonnes, accounting for nearly half of the month's growth. With the arb window between LME and SHFE currently closed, we expect further exports out of Russia to help fill in the gap in the coming months.

China Aluminium Production vs Operating Rates

Operating rates have been low despite traditionally high season. We expect these levels to improve.

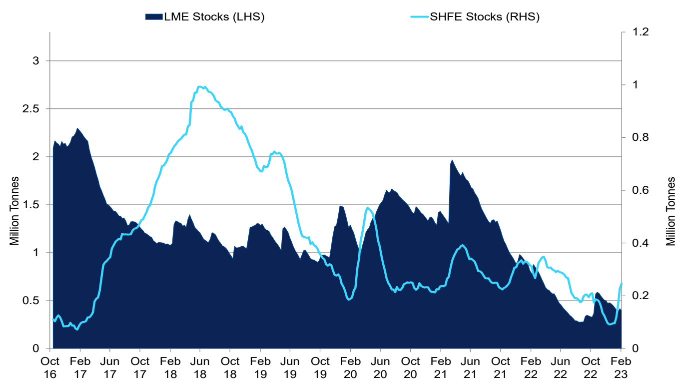


Source: National Bureau of Statistics, SMM Information and Technology

Given the traditionally quiet demand period, any excess production during the celebration period is likely to feed into the social inventories. We have already seen stocks begin to grow in the first couple of weeks this year. The aluminium ingot social inventories across China's eight major markets stood at 0.69m mt as of January 16th, up 48,000 mt w/w and up 0.197m mt from the end of December. The figure was 33,000mt less than the same period last year, though. Despite a build-up of social inventories, the increase on SHFE has not been proportional, only just rising from 91,242 tonnes, the 2017 low, due to poor logistics deliveries of accumulated materials failing to arrive on time. The downstream consumption declined significantly in January amid the approaching Chinese New Year. Coupled with the increasing aluminium ingot output, the domestic aluminium social inventory of ingot may accumulate further in January and might reach 1m mt in February. This could weigh on domestic prices further and for Chinese premiums to weaken accordingly.

LME vs SHFE stocks

SHFE stocks seen building on lower demand in the region, while primary supply remained unchanged..



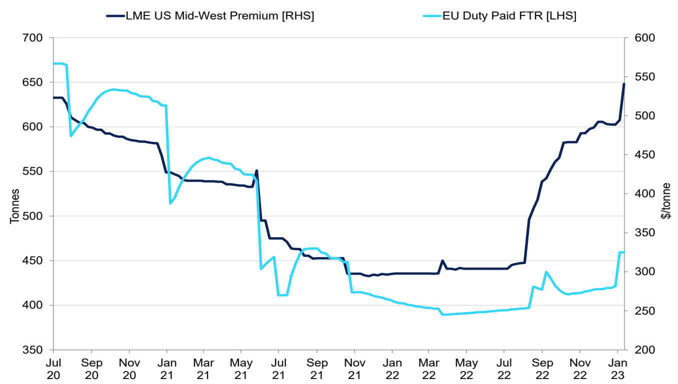
Source: Bloomberg

From the demand side, the downstream consumption was poor in December amid the traditional off-peak season and the compounding effects of the pandemic. New orders from aluminium processing plants were sluggish, and operating rates declined accordingly. Aluminium smelters in Guizhou were forced to stop production amid the power shortage in December, leading to an output cut of 450,000mt. According to SMM, this is set to continue in January, with an estimated output cut of 400,000-500,000 mt. The short-term aluminium SHFE prices will face downward pressure due to falling domestic and overseas demand and inventory accumulation. Russia's exports to China could further weigh on the SHFE aluminium prices, even in the event of China's euphoria trade following the holiday season.

As a result, domestic and overseas demand are both set to remain lacklustre in Q1 2023. Indeed, Europe scaled back 1.54m mt of aluminium capacity in Q4 2022, and smelters reduced their capacity by 30-60%. However, at the same time, the overall demand in Europe collapsed due to slowing manufacturing and industrial sectors, and financing is further tightening, given high-interest rate levels. The supply-chain tension has eased accordingly, and the market focus has shifted to weakening demand. Still, by the end of the year, we saw premiums into the US and Europe jump higher, with the former rallying to $538/t highs. And while some smelters might resume production given the easing natural gas and electricity prices in Q1 2023, demand in Europe is expected to continue to slow in 2023. As a result, many European consumers are switching to short-term purchases, adding volatility to the premiums, and we expect purchases to remain on a demand-only basis. From the domestic demand standpoint, the Chinese government has released a slew of new possible measures to revive the property sector, however, we do not anticipate the demand to filter through the system until months down the line. China's housing sector continues to tumble, and property starts have declined to -45.39, the series low. Despite the sharp reopening of restrictions earlier in January, the continued rise in covid cases and deteriorating housing conditions offset the demand balance.

US vs EU Aluminium Premiums

Premiums into the US shot up higher, driven by mostly on-demand orders.



Source: Bloomberg, Platts

Growing domestic stockpiles in China and weaker overseas demand meant that consumers avoided committing to long-term contracts for now, with bulls waiting for another quarter before joining the trade. Tighter monetary conditions will make financing play a key role in investment decisions this year. With inventories at historic lows, this could set the stage for future squeezes, especially if demand turns out stronger than expected. A key debate will be whether China's reopening will coincide with a sharp drop in global demand and whether rebounding supply will help to replenish the country's reserves. China's reopening is unlikely to be smooth and will add further uncertainty to aluminium prices. Still, it is a step forward for economic recovery this year. With holiday celebrations giving some breathing room for aluminium prices, we expect to see further gains and spread to tighten by the end of Q1.

Copper

LME Copper 3MO ($)

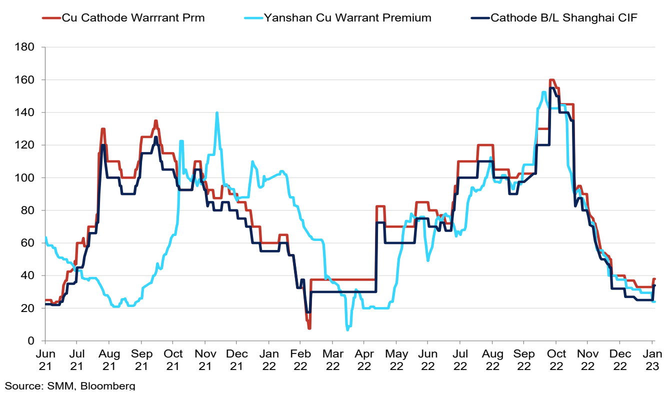
Sentiment

Softer Dollar	Dovish Fed	Macro uncertainty	Limited Infrastructure Stimulus

Q4 Review: Copper prices gained 11.8% in Q4 as sentiment around China re-opening captivated markets. This was also attributed to a weaker dollar as the Fed softened its stance on rate hikes, reducing to 50bps, and market expectations are starting to incorporate rate cuts. Despite the more positive sentiment around China re-opening, local prices remain at a discount, and premiums are weak, suggesting little uplift in metal consumption. Spreads were under pressure and traded at $35/contango, Cu premiums decreased to $27.5/t (mid), and the bill of lading premium was down to $31/t after the Chinese New Year. This does not indicate a tight market in the immediate term; however, blockades, and unrest at mines in Peru, could reduce the shipment of concentrate to China.

Cu Concentrate TCs 25% CIF vs Yangshan Copper Warrant Premium vs Cathode B/L Yangshan CIF

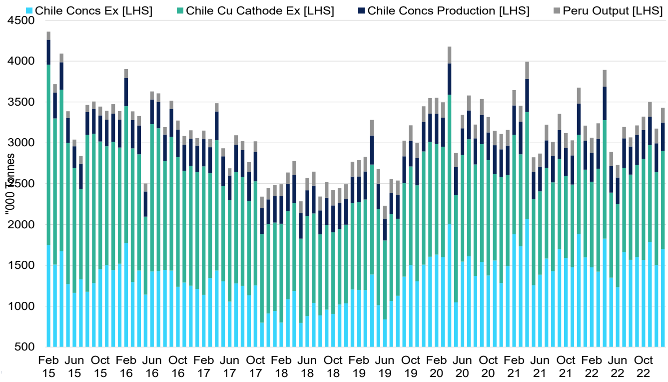
Premiums are low, and TCRCs have not moved much despite supply issues, suggesting adequate concentrate cover.



Outlook: We highlighted in our previous reports that confidence in the mining sector was low in Latin America; this came to fruition in Peru as blockades and protests against the government impacted logistics for copper concentrate. Las Bambas has been put on maintenance, and local storage rose and reached 85,000 tonnes. The material could not be shipped, and we expect this to continue, reducing Peru's exports; TCs have reacted this week by softening marginally to $80.5/t. Anglo-American forecasts output at Quellaveco to reach 310,000-350,000 tonnes, with Las Bambas originally forecast at 265,000-305,000 tonnes; Quellaveco would be the largest producer. Total operating capacity will be reached by mid-year, but this guidance could be under threat. However, storage facilities will be low, which will not cap production in the short-to-medium term. Chile's output was lower in December by 0.5% Y/Y, to 495,800 tonnes, and full-year output was 5.33m tonnes, down 5.3%. Codelco's mining output for 2022 was down 10.1%, Escondida increased by 4.2%, and Collahuasi was down 9.4% Y/Y. Mining delays are expected to inhibit mining growth. Codelco forecasts production to be 1.45m tonnes in 2023, and they have highlighted the need to develop projects. They're over budget and behind schedule, capping the long-term supply output. Negotiations between First Quantum and Panama ongoing such as for taxes. Cobre Panama concentrate loading has been suspended at Cobre Panama Port until it provides evidence that the calibration scale has been certified. Copper premiums have been increasing; Codelco's European premium was $235/tonne for 2023, and Aurubis have set theirs at $228/t, up from $123/t.

Chile Copper Mine Production

December production was down Y/Y, and Codelco's production was lower in 2022; a similar trend is expected in 2023.

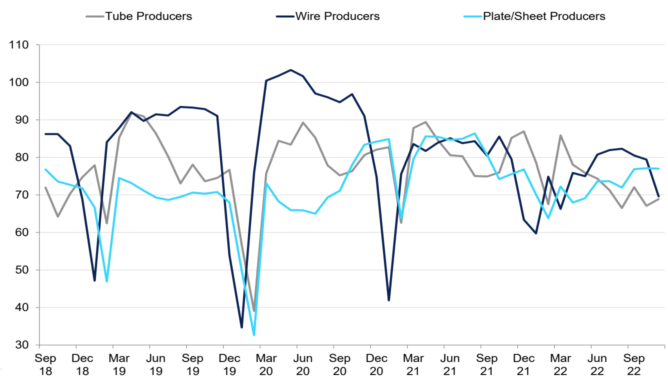


Source: Banco Central de Chile, Banco Cenrtal de Reserva del P

SMM's weekly copper concentrate index declined to RMB543.97/t, but the monthly data point is marginally higher at RMB560.75/t. Local prices are at a discount with #1 cooper cathode at -RMB30/t, while this is up RMB40/t on the month; this suggests a moderate increase in consumption of copper, and the same is for standard, and high-quality copper discounts are reducing, at RMB45/t and RMB 25/t, respectively. Low-quality copper discounts are still low at RMB105/t, highlighting that greater demand for high-quality material is significantly higher. Yangshan copper warrant premiums have declined to RMB152.93/t, down RMB10.2/t, and the bill of lading premium has been rising to RMB101.95/t, up RMB13.59 W/W. Bonded spot prices edged higher in the week to RMB60,725/t, up RMB60/t. With discounts starting to be reduced and spot prices edging higher, this could suggest that consumption may improve. However, underlying prices for standard and high-quality copper are edging lower, suggesting an appetite for copper as markets edge lower. Downstream demand is still soft, but they are buying weakness. Processing fees for some products have declined recently.

Operating rates for Tube, Wire, and Plate/Sheet Producers

Lower operating rates will cause inventory to decline in the near term before production resumes.

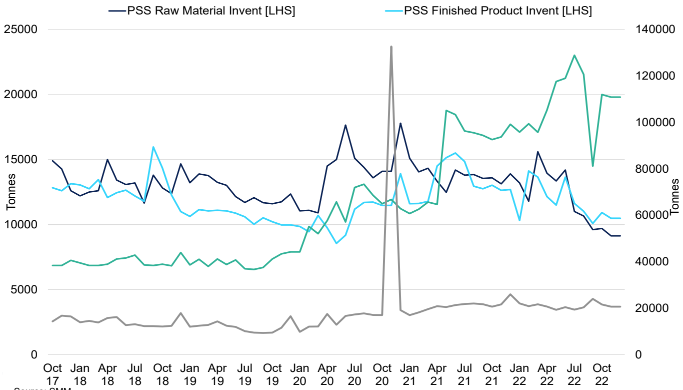


Source: SMM, Bloomberg

Processing fees for material have been falling; copper wire, hard/soft, and rod have all declined in the week of February 7th. This has been replicated in PSS and foils, with H65 copper-zinc alloy PSS and T2 PSS down by RMB1,000/t, respectively. Processing charges for 4.5μm lithium copper foil, 6μm, and 8μm, have declined by RMB500/t into February 3rd. The finished product and raw material inventories for PSS have been declining recently, while tube producers finished stock has increased once again. This highlights stronger processing of tube but also reduced consumption from downstream. The same can be said for wire inventories which have edged higher in recent weeks due to the Chinese New Year; local stocks at smelters and refineries have surged to a current record. We expect drawdowns in these inventories as operating rates for wire, tube, and PPS are low. Wiring demand from the property sector will not be substantial due to low confidence in the housing market. Copper wire prices have been falling, and traditionally wiring is consumed at the final stage of property development. The upside could be the increased wiring in EVs and demand from the electronic grid. Investment in this sector has been soft, but new stimulus will benefit the energy transition.

China Copper & Copper Products Output

We expect a resumption of copper production in the near term as smelters resume output.

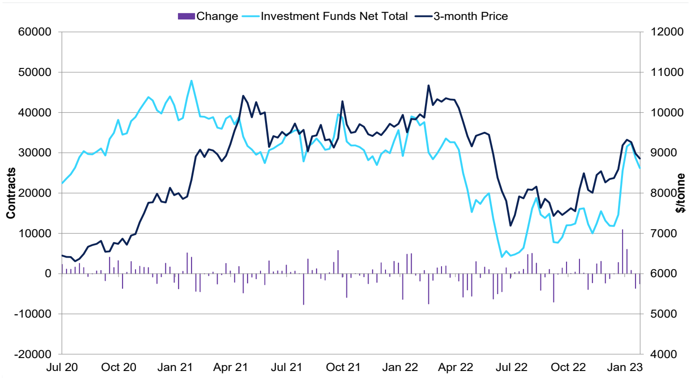


Source: SMM

Copper cathode production in China was 887,900 tonnes in December 2022; this brought production in 2022 to 10.28m tonnes, up 3.07%. Operating rates in January will be low, but the December maintenance will limit losses, and two new smelters will improve output in the coming months. There is also an upside to February data, as in December, some smelters reduced output due to already hitting their production goal. Combining new smelters and higher output from existing smelters may prompt higher production in January towards 900,000 tonnes. Bonded inventories have started to rise, but significant import losses remain, and copper inventories across China are rising. This suggests less imported material, but the consecutive weeks of inventory increases offer lower prices in the near term. The weaker premiums mean soft demand; smelter inventory is shipped to bonded warehouses and then on to the domestic market. The Chinese consumer has large amounts of savings, but consumption of goods and services is low. High-frequency data suggests an uptick in activity, and consumption data points suggest considerable weakness. Softer consumption and adequate supply have caused spreads to decline, and we are also seeing a rising trend of hedges in the near-dated month.

Investment Funds Total Position vs Weekly LME 3-month Price

Funds increased their net position, prompting a rally, but this momentum has stalled as China's consumption remains soft..



Source: LME, Sucden Financial

Lead

LME Lead 3MO ($)

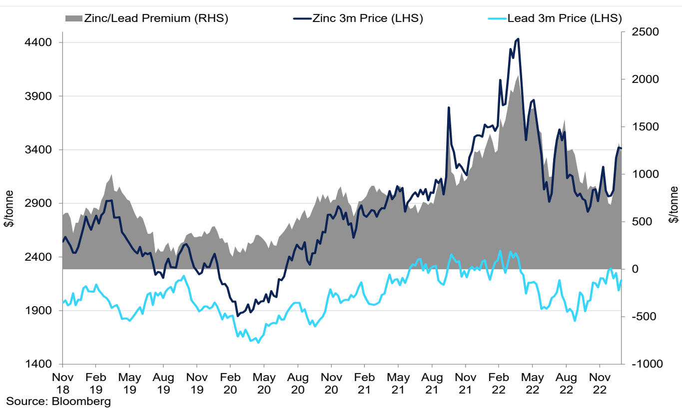
Sentiment

Auto Demand	Replacement Battery Demand	Economic Data	China Recovery Story

Q4 Review: Lead prices jumped higher during the last quarter of the year, strengthening by 24% q/q to close at $2,298/t amid downstream restocking before the end of the year. In January, however, a slight reversal of that trend materialised as lead fell by 10%, a different picture from what we have seen in the rest of the base metals market. Even China's reopening failed to lift the sentiment. Lead has historically been highly correlated with investment funds, and recent price weakness was primarily driven by fund selling. With zinc prospects improving simultaneously, the premium between the two metals jumped higher, jumping back above $1,300/t. The export window is open, and some ingots were transferred to social warehouses before being exported. At the same time, lead was added to be the 24th Bloomberg index metal, and while in relative terms, the metal's weight would account for 0.94%, in terms of the absolute figures, this resulted in around 15,000 lots of material added to the exchange. As a result, cash to 3-month spread jumped above $60/t on the date of the change.

Lead vs Zinc Price and Premium

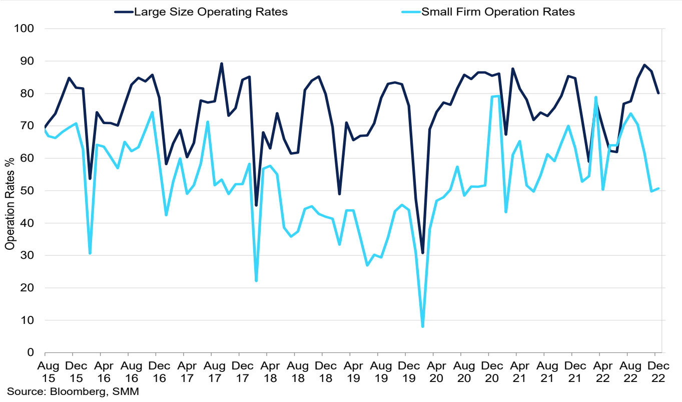
Zinc/lead premium jumped higher as zinc fundamentals have improved.



Outlook: Refined primary lead output finished the year on the front foot, with production reaching 307,200 mt in December, marking a 14% y/y growth, with many enterprises increasing production to complete the annual production plans, according to SMM. In January, some small and medium-sized enterprises, especially in provinces like Henan and Hunan, took 1–2-week holidays ahead of the holiday celebrations. Others are set to continue producing in shifts, leaving the overall production broadly unchanged during the period. We might see production fall back below 300,000mt. Another divergence appeared between small and large-sized lead processor firms, with the small firms' operating rate remaining low at 50.69 going into the year-end, while large firms are just starting to slow down, in line with the seasonal effects. The energy concerns, power rationing, and now lower output prices put input costs for the smelters high, and smaller companies will struggle to maintain a healthy profit margin for longer. With primary output remaining broadly stable during the holiday period, some smelters will have a build-up in inventory. We expect logistics in the country to improve following the Lunar New Year celebrations and smelters to begin shipping material, especially to smaller-sized smelters that continue to struggle to operate at a healthy rate. China's lead ingot premiums should improve from a $200/t discount back towards a premium as a result. TCs remained unchanged at around $70/t, but TCs for some lead ore with abundant copper-zinc-silver content under long-term contracts dropped by nearly a half or more y/y. This kept most smelters on the sidelines.

Operating Rates for Large and Small Firms in China

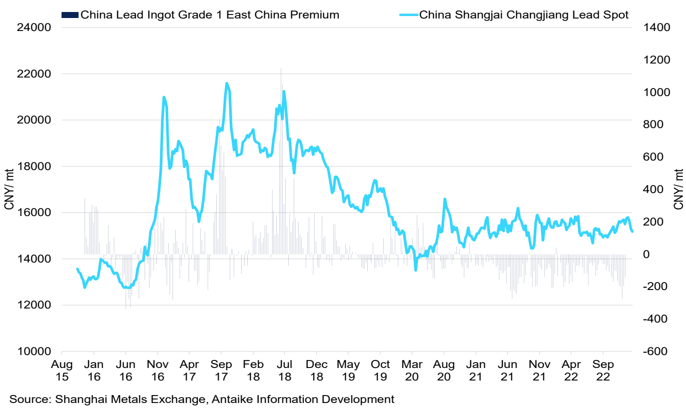
Small-sized operating rates have not experienced traditional seasonal highs.



On the other hand, secondary smelters saw output slow in December to 367,900mt as some smelters reduced their production to comply with the environmental protection requirements. In addition, those that have not stockpiled enough material reduced production during the Chinese New Year. It is estimated that the domestic secondary lead output will fall back to 330,000mt levels in January. With 60% of lead demand coming from secondary material, scrap prices are set to be lower following China's New Year, as secondary refined lead smelters are set to be active in production upon return to the market. The material flow will rise, given the improvement in logistics. But the longer-term trend of lower car purchases and, in turn, turnover will mean fewer vehicles are coming back to the market, and scrap prices are set to benefit from this trend. With China's ingot prices higher at CNY15,500/mt, the production profits of secondary refined lead smelters should benefit as a result. As such, the purchasing prices of battery scrap is expected to be high. We expect China's sulphuric spot prices to benefit from December lows of $243.8/mt.

China Lead Ingot Premiums

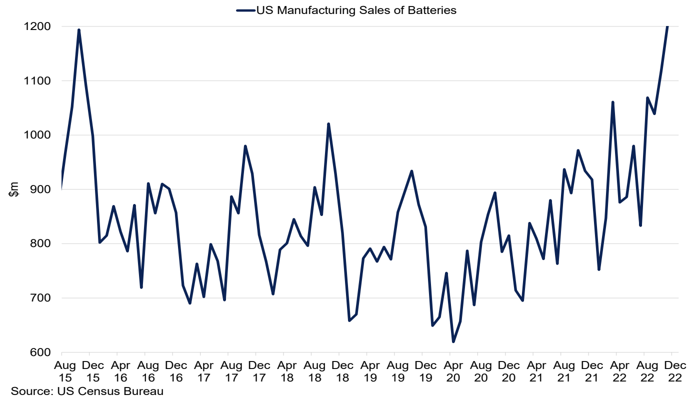
Lead ingot premiums are historically low amid slow demand uptake in China.



For Q1 2023, we expect exports to continue to decline on the back of softening global demand and domestic production to adjust to consumption and possible inventory accumulation. The social inventory of lead ingot is building up, with the most recent figure at 49,800mt. While we might see a continuation of SHFE stock increases in the coming weeks, logistic services will also be slow to restart, meaning that material will remain in social warehouses and go directly into the industry upon reopening. Stocks will continue to rise with downstream enterprises closed throughout the holiday season. LME inventory also showed signs of a slight rebound, and cancelled warrants have jumped to summer 2021 highs of 12,500t, with material leaving South Korean and Belgium warehouses.

US Manufacturing Battery Sales

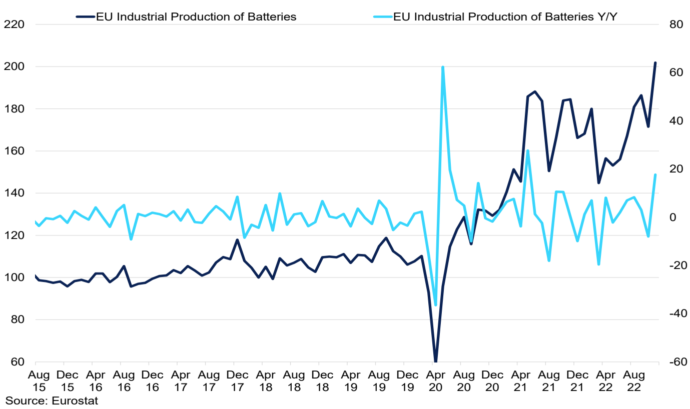
Sales are seen breaking record highs, jumping above $1,200m in sales.



From the demand side, we have seen some of the pressures on prices and, in particular, energy soften quite sharply, which has lifted sentiment in recent months. While this will not lead to a rebound in manufacturing activity, it is a welcoming sign that economic conditions are not as bad as they first seemed. In China, backup battery producers' operating rates declined in line with the seasonal average. While in Europe, industrial production of batteries is beating highs, growing at a rapid pace of 20% y/y in December. Battery manufacturing is breaking record highs in the US, with sales jumping to $1,200m. Asia and the West continue to see an explosion in electric vehicle sales. Germany saw the number of NEV sales rally to 174,200 units by the end of the year, marking the highest monthly sale to date and a 69% jump m/m and 114% y/y. December's strong increase in new-car registrations was mainly due to the significant growth seen in the EV market and the changes in subsidy schemes taking place earlier this year. Last month, more than half of newly registered cars in Germany were electric – a first. Likewise, similar robustness in sales is seen across the US and China, where December sales equalled 98,656 and 814,000 units, respectively, underscoring the exponential jump in sales across the major countries that took place by the end of the year. However, in 2023, the electric car market could see a certain level of stagnation, as rising electricity prices and lower subsidies are expected to affect consumer interest in buying a new electric car.

EU Industrial Battery Production

Both the absolute and relative figures point to a sharp improvement in battery market conditions.



We expect lead prices, in line with other base metals, to benefit from China's reopening following the end of national holidays. Logistics will improve, and we expect premiums to rise due to better transportation within China. Moreover, given solid primary refined lead production during the period, the accumulated stock will go straight to the industry. However, its upside will be capped, driven by the longer-term trend of diminishing secondary material availability, given the slowing NEV turnover, creating a bigger surplus in material balance.

Nickel

LME Nickel 3MO ($)

Source: Bloomberg, 16.02.2023

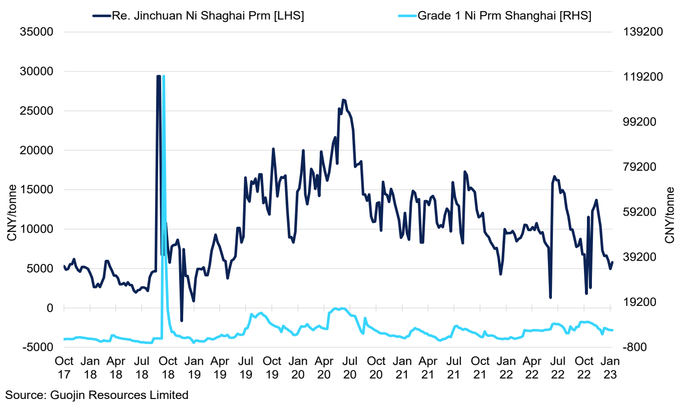
Sentiment

Evs/Battery Demand	Downstream Consumption	Reduced 300 Series	Philippines Levy

Q4 Review: Nickel prices were well supported in Q4 2022, as optimism around China and a softening stance from the Fed boosted sentiment. However, these moves above were unwarranted from a fundamental perspective, and we expect positivity to soften. The correlation between the LME price change and fund COT position is positive and statistically significant, above 0.6. This shows us that the speculators have driven this move, but open interest is still low, and trading is thin. The spreads have weakened significantly and now stand at $191/t contango. This suggests that there is little tightness in the system, and the rally will not hold. LME inventories continue to trend sideways and stand at 49,086 tonnes, with 28,110 tonnes held in Asia.

Jinchuan Ni Shanghai Premium vs Grade 1 Ni Shanghai Premium

Both premiums have suffered, suggesting softer demand.

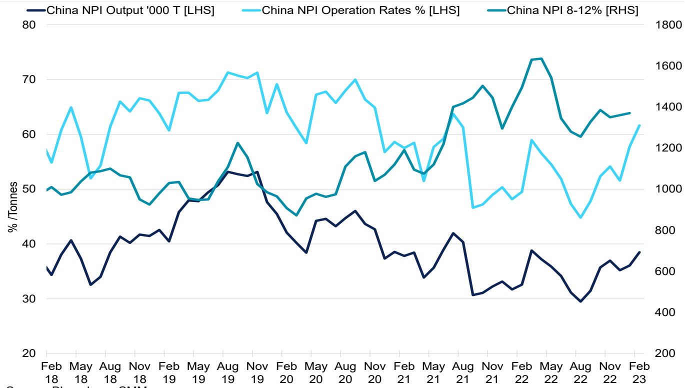


Source: Guojin Resources Limited

Outlook: China's refined nickel imports reached 14,178 tonnes in December 2022, however, due to the seasonality of the Philippines supply, nickel ore shipments declined to 2.75m tonnes. This is down from YTD high of 4.79m tonnes in October; total imports were low in 2022 than the previous year at 40.232m tonnes compared to 43.35m tonnes. Material shipped from the Philippines was 38.43m tonnes, but total shipments from January to September were down 17% Y/Y at 22.5m tonnes. Philippines nickel is now the majority supplier of nickel ore into China; the nickel ore premium of 1.8% CIF has held constant in recent months at $104/t, with the 1.4% CIF at $72/t. Freight rates of nickel ore from the Philippines to Tianjin, and Lianyungang are RMB53.99/t, and 47.24/t, respectively, as of February 1st. Appetite for Filipino material will remain constant, but the seasonality of shipments reduces availability; the government proposed a 10% tax levy on nickel ore exports. This would increase the smelting costs in China, and cut miners' competitiveness of, but the levy is an attempt to boost investment in the Philippines. This is an attempt to export the value-added good and not just be a 'vendor country' as per the Environment and Natural Resources Secretary. The mining industry expanded in 2022, and the country wants to grow the industry further to boost economic growth, with only 3% of 9m ha of high mineral reserves identified.

China NPI Output vs NPI Prices vs NPI Operating Rates

The sector remains on the decline, but operating rates have edged higher at the start of the year.

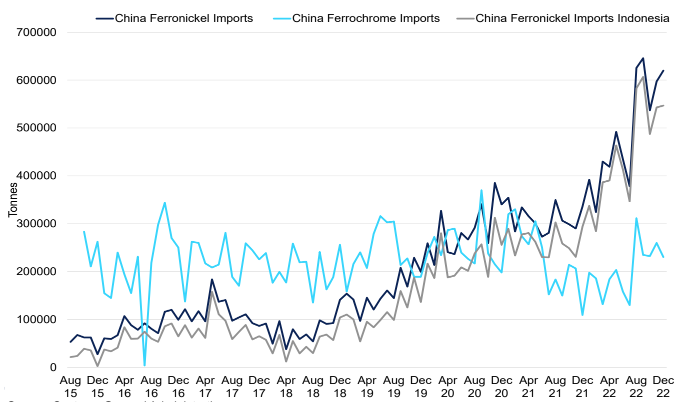


Source: Bloomberg, SMM

China's NPI output has continued to fall, down 4.74% M/M in December at 35,200 tonnes of Ni content; this was up Y/Y by 6.2%, according to SMM. Indonesia's NPI was significantly higher on a Y/Y basis, up 30.8% at 103,600 tonnes, which brought total output to 1.15m tonnes in 2022, up 28.9% Y/Y. New projects and facilities increased their production and cuts due to maintenance were limited. Some lines could be shifted to NPI for stainless, away from high-grade matte, as profits have been capped, even though there will be more maintenance; NPI output is likely to increase. Chinese production will decline due to maintenance and Chinese New Year; output may reach 33,760 tonnes and will be raised in February. Prices for NPI have been rising, and we could see more upside as we come out of Chinese New Year, as we see more from the stainless market. SMM indicated that stainless output was 2.89m tonnes in December, up 7.7% Y/Y, 200 series improved by 1.42% to 1m tonnes, 300 was at 1.44m tonnes and 400 series at 451,000 tonnes. CRC transactions picked up in December and profitability improved for the 200 series. Maintenance will come to an end, and raw material consumption will improve. Since returning from Chinese New Year, the stainless market has rallied, 316L/2B coil and 316L/No.1 coil in Wuxi have increased marginally to RMT32,500/t and 32,100/t, respectively; the same is for Foshan. Stainless prices are high, and while these products are traditionally used for building materials, the property market may not grow significantly, putting pressure on prices. Higher nickel prices and the potential levy in the Philippines could increase costs further. Therefore, the trend towards lower nickel stainless will continue, and scrap will also play a more important role. New scrap could reach 10m tonnes in 2030, with total stainless scrap at 38m tonnes when you factor in volumes from consumer goods, steel mills, manufacturers, and different series.

China's Ferronickel Imports

While nickel ore imports from Indonesia are practically zero, ferronickel imports have shot up. Highlighting that Indonesia is exporting the value added good.

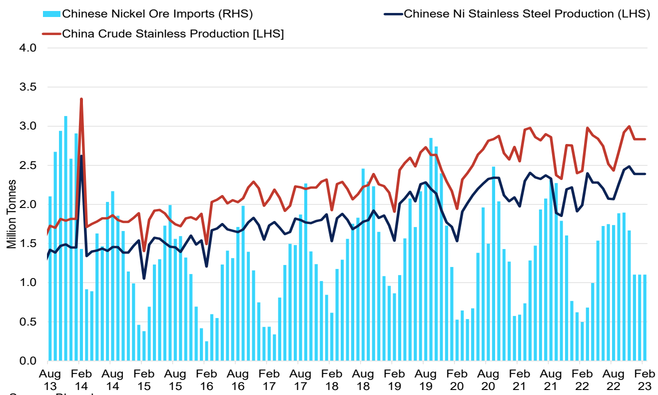


Source: Customs General Administration

The stainless-steel intensity is significant in EVs, and support in this sector due to significant household savings would keep support consumption. We do not expect consumption to rise immediately, given the weak consumer sentiment, but as this improves, sales should start to improve. We do not see a contraction in EV demand in China, just slower growth in the immediate term. EV demand grew sharply in 2022 but got off to a softer start in 2023 as sentiment is weaker; China's January sales were down 35% M/M. EV sales in Europe reached 22% of total vehicle volume at 2.2m, this was down from last year at 2.27m and the higher share can be attributed to lower overall sales in the general combustion market. The IRA in the U.S. is expected to support EV consumption and energy storage systems; these may not be realised until 2024. While this will boost demand in this region, the recent response from the European Commission could provide similar support in Europe. Policy in these regions concerning resource security could inhibit EV sales in the coming years, as 80% and 100% of resource sources in the US by 2027 and 2029, seem unrealistic. More alarmingly, 50% of battery components must be sourced in the US in 2023.

China Nickel Ore Imports vs Chinese Stainless Production

Imports from the Philippines were marginally softer than the previous year, and a levy by the government would damaging for China.

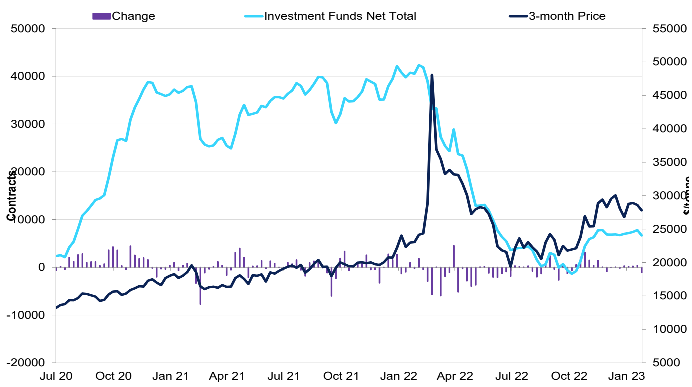


Source: Bloomberg

Speculators have increased their net position in recent months, trading at 7,401 contracts. This is significantly below the net length of a year ago when it stood at 42,000 contracts. This highlights the low liquidity in the market; open interest and volumes are low, so we have a smaller number of traders having a larger impact on prices. The forward curve suggests nickel prices will continue to rise, and while we see stainless demand higher Y/Y in China, we do not foresee an exponential rise in prices. With China re-opening, liquidity could start to improve; however, producers may put hedges in the near-dated months to reduce their risks; in our opinion, the OTC market will rise in prominence with exchanges continuing to be thin.

LME 3-month Price vs Investment Fund Net Position

Investment funds have increased their longs but are still significantly below historical levels.



Source: LME, Sucden Financial

Tin

LME Tin 3MO ($)

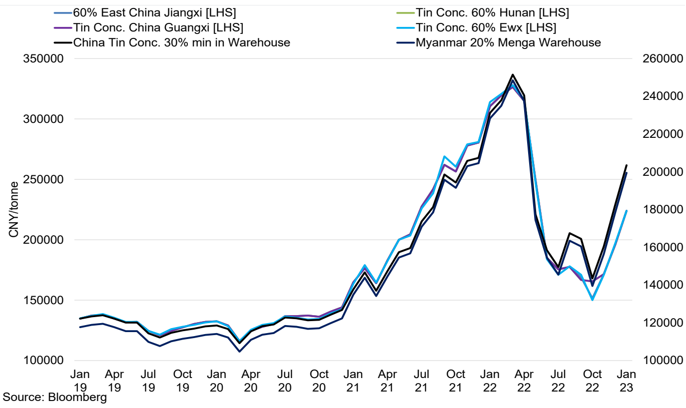
Sentiment

Solar Installations	Soft Landing	Semiconductor Sales	Business Optimism

Q4 Review: Tin prices gained ground in Q4, as the US dollar came under pressure, and China indicated that they would re-open their economy sooner than markets expected. Prices gained 21.9% in Q4 but lost ground annually, falling 36.3%. Calendar spreads came under pressure in Q4 2022, and after reaching $200/t back in November, the cash to 3-month spread stands at -$53/t contango. The fundamentals for tin remain poor, which could trigger prices to weaken in the coming months. However, the improved sentiment across Asia and the US due to softer inflationary expectations may continue to buoy sentiment, despite robust supply. The funds have slowly been increasing their exposure as China re-opens their economy, and the dollar starts to weaken.

Material Prices in China

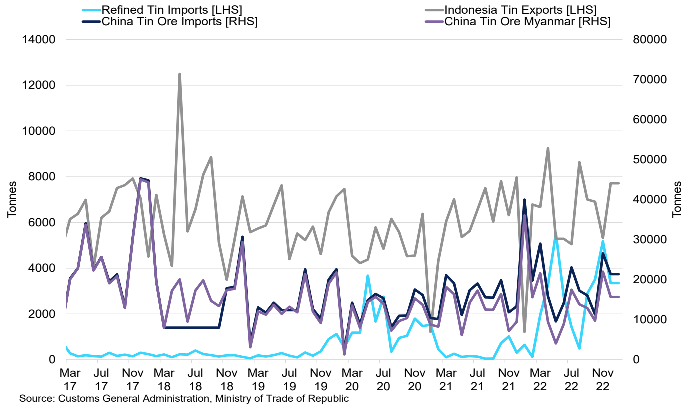
Prices have continued to rise as smelters come back from maintenance, but downstream stakeholders are still hesitant.



Outlook: Operating rates at tin smelters in Yunnan and Jiangxi have declined to 62.21% and 39.63% due to maintenance over the Chinese New Year; this has prompted softer demand for raw materials, which caused tin concentrate TCs to decline. Refined tin output in China was 15,905 tonnes in December 2022, up 13.61% Y/Y, with the YTD figure up 0.42%. The COVID outbreak hit December output, and with maintenance in January, we do not expect much upside to output in January and February. The maintenance will cap the consumption of raw materials, presenting a downside to TCs. Output in other regions outside of Jiangxi and Yunnan, Guangxi increased in December despite the tight availability of material. The COVID outbreak heavily impacted central China smelters, but as the economy re-opens, we expect the attention to shift back to profitability. Profits of smelters were suppressed due to tighter material availability and lower TCs. The higher prices and Chinese New Year have put off re-stocking, and downstream stakeholders are hesitant to purchase material at these prices. Solder companies went on a break for Chinese New Year, causing fewer downstream purchases, we have seen domestic social inventories increase.

China Tin Imports vs Indonesia Tin Exports vs Tin Ore Imports

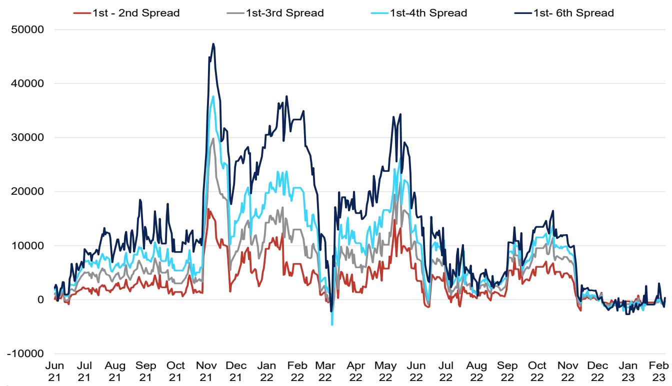
The open arbitrage window prompted imports into China but this will only be temporary.



The import arbitrage is currently open, and this has caused shipments into China. As the window remains open, shipments into China will increase for January, which could prompt further rises in social inventories. SHFE deliverable stocks have been rising in recent months and now stand at 6,671 tonnes, up 311.28% since September and 36.1% since December 16th. The lower downstream demand and the open arbitrage window have prompted a rise in inventories. Refined imports into China reached 5,174 tonnes in December, and we expect this to be stronger in January. Imports from Indonesia have also increased in recent months to 7,710 tonnes. Tin ore imports are also rising and reached 26,552 tonnes in November 2022, the most up-to-date data. The maintenance at smelters has reduced demand for raw materials, but availability remains tight. China's tin ore imports from Myanmar are rising, and tin concentrate prices in Hunan, Guangxi, and Jiangxi have increased. Tin concentrate prices in warehouses, 30% min in warehouse and 20% concentrate in Myanmar, are also rising. This shows rising consumption, and when smelters increase output, this will prompt higher consumption of raw materials, and as a result, we see more upside in physical and concentrate prices.

SFHE Calendar Spreads

SHFE spreads, like the LME, have weakened significantly in recent months.

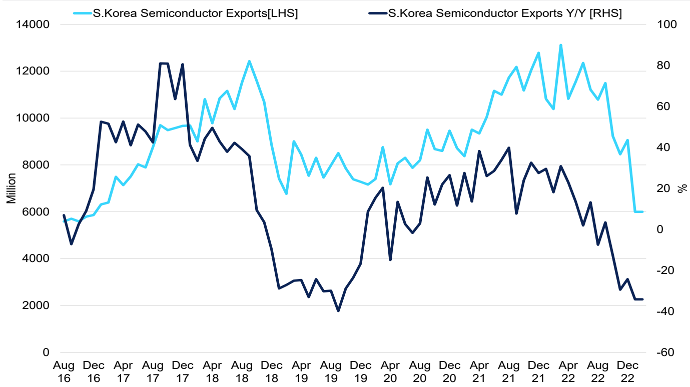


Source: Bloomberg

Spreads on SHFE and the LME have recently weakened, with the LME cash to 3 months now at -$85/t contango. The weakness in the spread is due to a response from the supply side and demand worries as global growth slows. The cash-to-15-month contract stands at $749/t back, which suggests tightness in the long run, but the spread is considerably below the 2021 high of over $4,900/t back. The tightness in material availability can be attributed to COVID restrictions and poor logistics. We expect material availability to improve in the coming months. SHFE spreads have also weakened; near-term calendar spreads (out to 6 months) are in contango, while longer-term spreads remain in backwardation. Inventories have increased significantly in China, but on the LME, stocks have been falling to 2,855 since January 18th. Demand continues to show signs of softness which may reduce offtake. However, heads of state and economists are starting to suggest that major economies will avoid a deep recession. This, in conjunction with China re-opening, could prompt upward revisions to demand

S. Korea Semiconductor Exports

Exports are declining, but stay at historically high level, as sales growth slows.

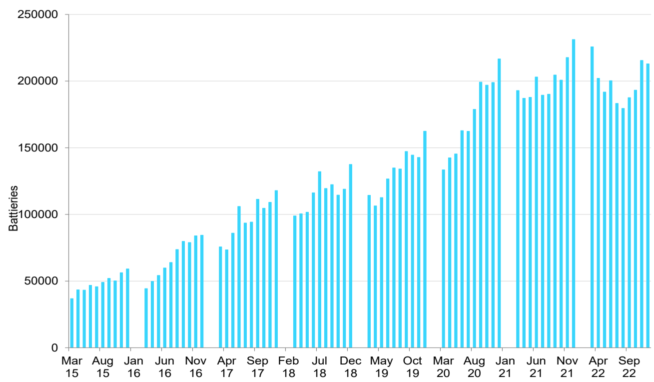


Source: Ministry of Trade, Industry and Energy

S. Korean semiconductor exports have been falling since the start of 2022; the Y/Y data shows exports decline by 24.3%. Semiconductor sales declined 21.2% Y/Y in November 2022 to $13.4bn; according to SIA, sales in China started to weaken in July, and if the re-opening boost the economy as expected, we expect more robust demand from China. However, we do not expect sales to reach the peak of 2021 when total sales in China reach $192.5bn, and chip imports declined 14.4% to 498.5bn units through to November 2022. Global sales in November 2022 were $45.48bn, down 9.2% Y/Y, but are forecast to grow at 4% in 2023. CAPEX is starting to be trimmed by semiconductor and chip-making companies; in response to softer demand, TSMC has lowered CAPEX to $32-36bn, down from $36bn the year prior. Samsung is likely to reduce CAPEX in 2023, the company have said that they will not cut production, but this indicates that they will make a loss in their memory division. However, the solar industry could offset some softness in the semiconductor sector; according to the ITA, the solar industry consumed 22,000 tonnes of tin in 2022. Solar installations will increase in 2023, and demand for tin will only increase in the coming years. BNEF indicate forecasts that global installations would reach 316GW, and tin in solar could be the fourth largest end-use by 2025, according to the ITA.

Lithium Ion Battery Production China

Battery production in China will continue to grow for energy storage and EVs.



Source: Bloomberg

Zinc

LME Zinc 3MO ($)

Source: Bloomberg, 16.02.2023

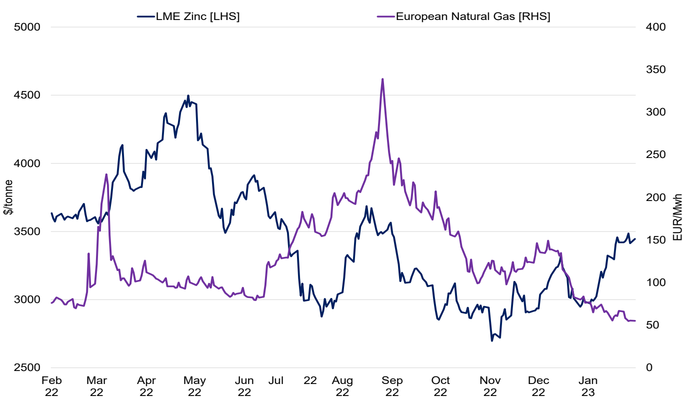
Sentiment

Rising Supply	Smelter Profitability	End-User Demand	Ore/Concentrate Availability

Q4 Review: Zinc prices were flat in Q4, gaining 0.3% to December 2022; prices failed into resistance at $3,318.5/t earlier in the quarter but weakened into year-end. Optimism surrounding the Fed's lower rate hikes and China's re-opening has caused investors to be more bullish in Q1. The dollar has been declining, but if the Fed changes its terminal rate to 5.25/5.5%, it will cause the greenback to rally again, putting pressure on metals. Zinc spreads have tightened and are backwardated at $17.96/t at the time of writing. Premiums in Europe remain high as material availability is low, despite weak demand in the bloc. Orders have been pushed back, and contracts shortened to offset the uncertainty in the global economy. Exchange inventories are precarious, with the LME at 19,150 tonnes, this is another reason for higher premiums, but we expect off-exchange inventories to be strong.

European Gas Prices vs LME Zinc

Zinc prices have rallied as availability declines, and smelter output is low.

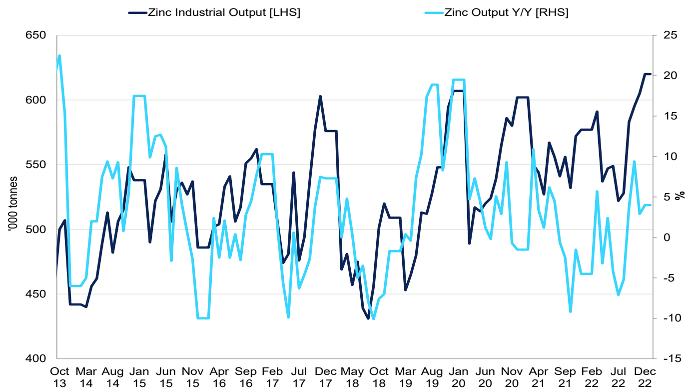


Source: Bloomberg

Outlook: Mine supply in 2022 was marginally higher than the previous year. However, strikes, pro-tests, and political instability have limited production. Mining exports from Peru declined sharply in November, and zinc mine output weakened to 113,877 tonnes. Nexa resources are one of the mining firms that have halted their production due to the blockades; this trend is expected to continue as the protests continue. Exports and mining output will be capped if the blockades remain in place in the coming months. We expect zinc production to reach 1.19m tonnes in 2023, but the protestors are now demanding an election and for the constitution to be rewritten, which is unlikely. According to the Peruvian Ministry of Energy and Mines, investment in Peru has increased despite the protests, which indicates accumulated investments rose 3.2% in November 2022 to $4.6bn compared to $4.4bn in 2021. The global zinc balance is expected to be between 50,000-100,000 tonnes, but if the constraints for smelters in Europe and China continue into Q2, this will reduce the surplus.

Major Zinc Mining Output

Zinc mine production is below previous years' highs, but we see a concentrate surplus this year, and mine output will remain robust.

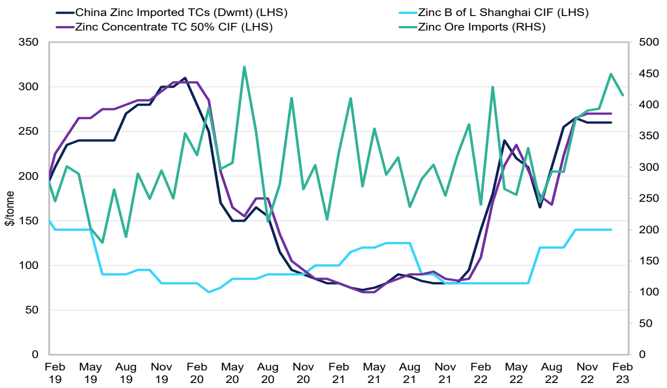


Source: NBS, Bloomberg

China remains the dominant supplier of zinc; industrial output was 605,000 tonnes in December, up 2.9% Y/Y. November and October production was also up Y/Y at 2.9% and 9.4%, respectively, ac-cording to NBS data; however, SMM suggest that output was 525,800 tonnes with production for 2022 at 5.98m tonnes, up 1.77% in 2021, compared to 7.4m tonnes from NBS. Inventory levels are smelters outside of northern regions are low, and this could limit output in 2023. Imports into China of zinc ore reached 449,206 tonnes in November, up from 394,000 tonnes in October. We see the bottleneck at smelters due to energy constraints. Smelters remain offline due to the energy costs, but the concentrate surplus, higher TCs and weaker gas prices have increased profitability for smelters. China TCs 50% CIF has pushed above $250/t, and this is due to the increased availability of zinc concentrates and lower output from European smelters. Utilisation rates in Europe have been low due to high energy and power costs, and we expect these rates to rise as we move through 2023, reach-ing 88% in H2 2023. Gas prices in Europe have declined so far in 2023 due to a mild winter; this, in conjunction with higher premiums, has helped the profitability of European-based smelters. As maintenance in Europe finishes, specifically Nordenham, Portovesme, and Auby, demand for zinc concentrate will improve, and this could cause TCs to fall, but the availability is strong. Physical premiums in Europe are expected to stay elevated in the immediate term due to low inventories and low smelter output, but demand is weak due to the economic slowdown.

China Zinc Imported TCs vs Concentrate TCs vs China Zinc ore imports vs Zinc Bill of Lading

Indicators suggest concentrate availability is plentiful at this time, and the backlog at smelters is causing tightness in the refined market.

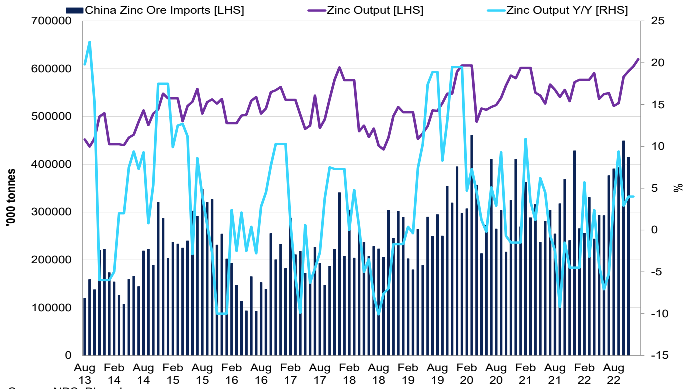


Source: SMM Information and Technology,Guojin Reasources Limited, Asian Metal Inc, Customs General Administration

Operating rates for zinc oxide producers declined due to the Chinese holiday; the average producer declined to 15.4%, down 29.3%; orders for zinc oxide were poor in 2022, and they will be hoping for an improvement in orders following the New Year. Price volatility has caused producers to limit stockpiles, and inventory days of consumption are lower. Die-casting and galvanising rates are down due to the holiday. Premiums in China started to improve in the week of January 20th, with Guangdong #0 and #1 now positive at RMB-20/t and RMB-10/t. Comparatively, premiums in Tianjin for #0 and #1 are at a discount at RMB-30/t and RMB-70/t. This highlights the different demands for zinc in different regions; TCs in China are unmoved in the week of January 20th, highlighting the slowdown for the Chinese New Year. Domestic mining and the concentrate surplus should keep TCs elevated, but as smelters come back online after the holiday, robust demand for concentrate will see TCs fall. Zinc ingot prices have started to rise in recent weeks; ingot prices rallied in most of the region. Shanghai #0 and #1 ingot prices were RMB24,460/t, and RMB24,390/t, up RMB370/t, respectively. Zinc premium bill of lading has increased to RMB981.68/t, and the warehouse premium has increased to RMB1,049.3/t, stronger domestic demand could cause premiums to rise, but the bill of lading certificates and exports are likely to struggle as softer demand in the export market.

China Zinc Output vs China Zinc Ore Imports

China's output continued to rise in Q4 2022, but maintenance and the Chinese holiday are causing production to decline.

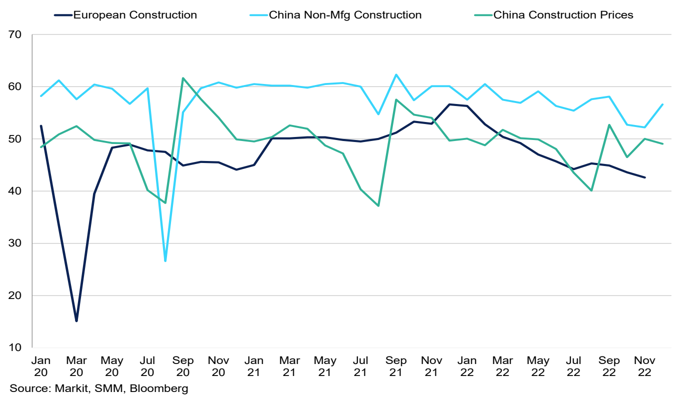


Source: NBS, Bloomberg

Seasonally low demand in China has caused inventories to increase; SHFE deliverable inventories have reached 44 248 tonnes, up 9,150 tonnes in the week to January 20th. We expect to see further gains in stocks in the coming weeks due to low physical consumption; LME stocks in Asia, specifically Taiwan and Singapore, have limited inventory at 10,900 tonnes and 6,650 tonnes, respectively. Europe's visible stocks are non-existent at 0 tonnes, but the ex-China weakness may offer some respite. Consumption will start to improve, but we do not see the traditional credit impulse in infrastructure, construction and property, which comprise 50% of end-use zinc consumption, to be likely. Transportation represents around 20% of end-use zinc demand; galvanising remains the most significant consumer from a first-use perspective at 60%. Still, stainless-steel demand in the automotive sector could come under further pressure. China's zinc consumption will decline as the economy pushes towards less steel-intensive industries. Steel is still the base for the automotive sector, aver-aging 55-65% of the total vehicle weight. BEVs generally have a higher stainless content, while aluminium content is increasing to reduce the weight of vehicles, energy efficiency, and mileage. Stimulus measures in China have not benefited infrastructure in recent months, and while steel and stain-less steel are used in the green economy, less investment towards infrastructure such as highways, airports, and railways will reduce zinc demand. The China construction price PMI has started to rise, but China non-manufacturing PMI is contractionary, as is Europe's construction PMI. We see an up-side in China, but this is dependent on the stimulus and where it is targeted.

European Construction vs China Non-manufacturing Construction vs China Construction Prices

China construction prices have been rising, but the non-manufacturing PMI in China and European construction is contractionary, highlighting the global trend of higher prices and declining growth.



Source: Markit, SMM, Bloomberg

Iron Ore & Steel

1st Generic SGX 62% Fe

Source: Bloomberg, 16.02.2023

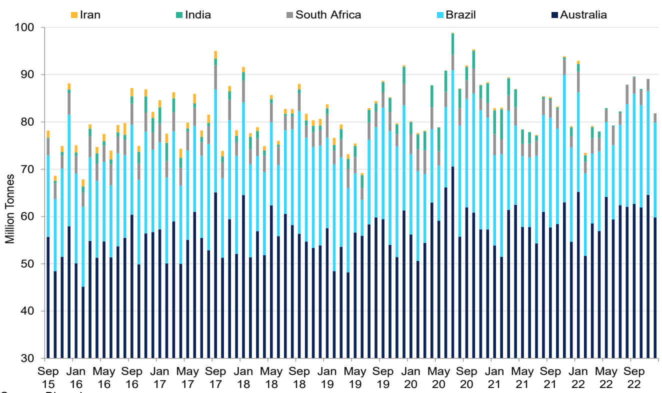
Sentiment

Softer USD	Low Seaborne Premiums	China's Property Sector	Soft Steel Intensive Industries
↑	↓	↓	↓

Q4 Review: Steel and iron ore prices rallied as optimism around China's economy re-opening and how that will boost iron ore and steel demand. Steel rebar and March 2023 SGX 62% Fe iron ore prices increased by 9.57% and 26.56%, respectively. The euphoria around China's re-opening caused an increase in speculator sentiment; however, the extent of the consumption increase of steel and iron depends on where expenditure is targeted. The traditional infrastructure-led investment will cause strong demand for steel and iron ore, but more consumer-focused spending may cap the consumption of these materials. Steelhome iron ore port inventories in China have moved sideways in the last few months, at 134.3m tonnes as of January 20th. The recent rally can be attributed to China re-opening trade, but conditions on the ground don't warrant such a rally.

China Iron Ore Imports

Imports have been softer to start the year, and better weather in Brazil should support shipments.

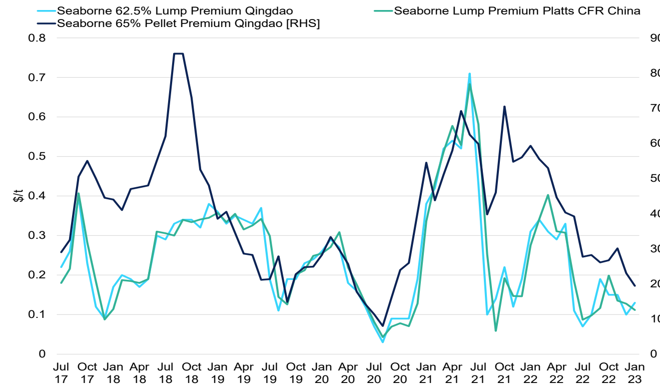


Source: Bloomberg

Outlook: Imports in 2022 were down 1.5%Y/Y to 1.106bn according to China customs data; imports declined 90.859m tonnes, up 5.6% Y/Y, 8.1% M/M. China's iron ore imports in December were 90.86m tonnes, down from 98.85m tonnes in November and 94.98m tonnes in October. According to data from Refinitiv, China is set to import 116.8m tonnes in January. This is expected to be significantly above expectations, but data in the week to January 13th saw global shipments of 29.45m tonnes, up 1.1%. The four major miners shipped 22.43m tonnes of iron ore last week. The ratio of Australia and Brazil of total shipments to China compared to total shipments was 73.4% and 36.2%, respectively. According to CRU, global iron ore supply is dominated by Australia and Brazil, producing 58% and 22%, respectively. Arrivals at ports in China were down 1.27% to 27.57m tonnes, and shipping data suggests that in the first three weeks of the year, iron ore shipments fell to 13.1% Y/Y. Seaborne iron ore premiums are declining, and while this could be due to poor weather in Brazil, this also suggests softer demand. The shipping industry also indicates less activity as the Baltic Dry Index declined to 763 on January 20th, the lowest since June 2020. Capesize supply is unlikely to fall further, and vessels are already slowing down to an average speed of 10.5 knots.

Seaborne Iron ore Premiums

Premiums are seasonally low, and while we expect some upside, stimulus is likely to focus on services.



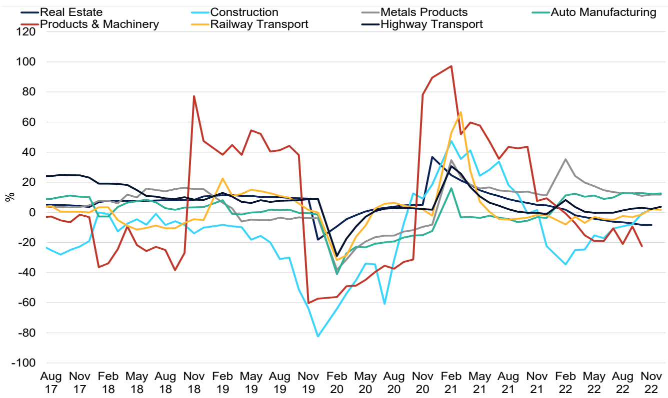
Source: Mysteel, Platts

Premiums typically start to rise going into the new year due to restocking, and while they usually peak in Q2, they are currently pointing to low demand. Iron ore production in China is forecast to increase by 3.5% in 238m tonnes, and we expect lower imports in 2023. According to S&P Global, between January and October reached 604.93m tonnes, representing 66% of total imports. Due to disruptions, Brazilian exports to China declined by 34.2% Y/Y; heavy rains have halted mining operations. The euphoria around China re-opening, in conjunction with lower exports from Brazil, will cause Brazilian iron ore prices to rise. In China, according to SMM, Dai county contributes to 47% of Shanxi's iron ore output and has a capacity of 32m tonnes. Mine production in these areas was halted due to a winter inrush and collapse in Dai, but production will restart in February.

NBS data in China suggests China's crude steel output was down in December 2022 by 9.8% Y/Y at 77.89m tonnes, and production of steel products was 111.93m tonnes, down 2.6% Y/Y. Annual steel output was flat in China at 1.34bn tonnes; with China re-opening their economy, we expect higher steel production in 2023. However, traditionally in China, the stimulus has been focused on infrastructure and property sectors; however, as China transitions to a consumer-led economy, government expenditure may be more focused on this area. This would reduce steel demand, as those steel-intensive industries will see less growth. The real estate sector is in negative growth still, down 5.1% in 2022. Property investment declined 10% to RMB13.29trn, according to NBS.

Steel Intensive Industries in China

Product & Machinery, and real estate is still low, and negative. We do not expect significant upside in demand..

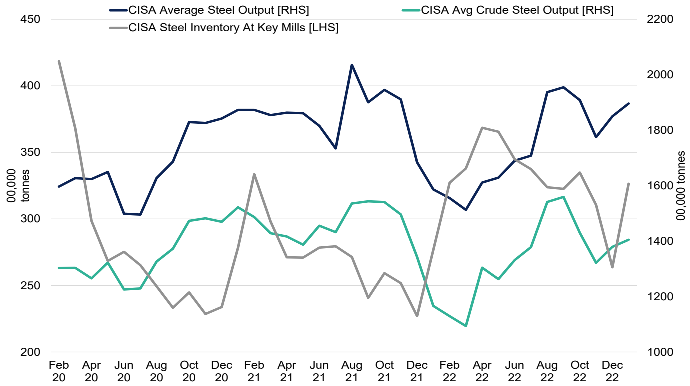


Source: NBS, Sucden Financial

We expect the property sector to play a diminished role, the new policy measures will improve liquidity in the industry, but the appetite for housing is low. If China relaxes restrictions on borrowing, there could be an uptick in steel demand, but over 60% of the top 30 developers in China have crossed at least one of the red lines, and the real estate climate index declined to 94.35. As a result, rebar prices have been bid in recent weeks as this is a commonly used product in construction. Stainless and galvanised steel consumption will also improve, giving rise to zinc and nickel. The 21-point plan revealed in January attempts to help developers with financing and debt extensions. The market needs to see a change in sentiment before we see more investment and growth in this sector. The floor area of new homes under construction declined 39.8%, with new units down 14.3%, but the new land purchases also suggest slower growth in 2023.

CISA Average Steel Output vs Average Crude Output vs Inventory At Key Mills

Crude steel output is comparatively low against steel production, and key mill inventory is rising.

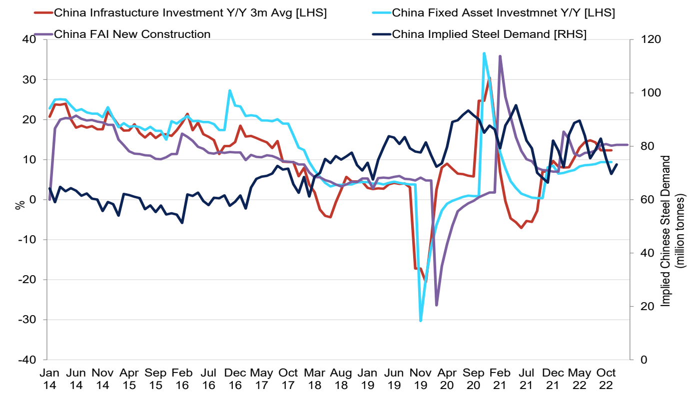


Source: CISA

Average steel output production, according to CISA, is 3,770,000 tonnes a day, which is considerably above where production was previously at 3.2m tonnes a day. On average, crude steel inventories have declined sharply by 13.05m tonnes, down from 16.47m tonnes in October; lower inventories may prompt a rally in steel prices. However, total inventory in social warehouses is starting to rise, with HRC and rebar stocks up 10.7% and 14.4%, respectively. The CISA data contradicts the NBS data, which outlines that China's crude steel output has declined sharply in recent months, with December data at 77.89m tonnes. We expect output to rise but continue to question the extent of demand growth. Softer consumption has led to a higher inventory environment, but sentiment around China's re-opening has caused prices to rally; this, in conjunction with lower profit margins, may prompt prices to push higher. The increased usage of scrap is rising, and we expect this to continue in the long run. The MMAC suggests that scrap usage will reach 330m tonnes by 2025; when you factor in the increase in domestic iron ore supply, there will be a reduction in reliance on imports.

China Investment Vs Implied Steel Demand

Due to low investment in China, steel demand has been weak.



Source: NBS, CEIC,Bloomberg

Gold

Spot Gold $/Oz

Source: Bloomberg. 26.10.2022

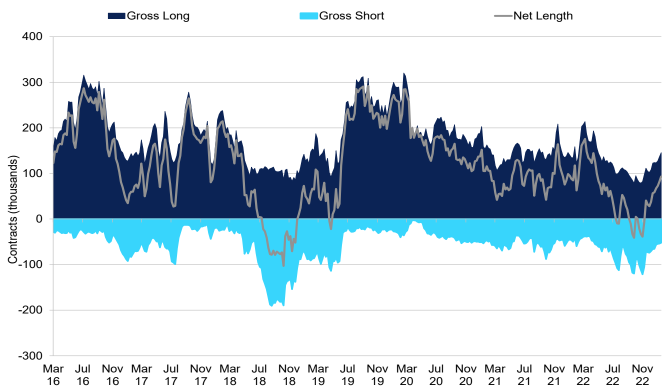
Sentiment

Softer Monetary Policy	Central Bank Demand	Limited Spec Appetite	Rebound in Jewellery

Q4 Review: Gold prices have rallied significantly in Q4 and the first few weeks of 2023, at 9.6% and 5%, respectively. The softer stance from the Fed led to gold gaining ground as longer-dated rates started to decline as inflation and growth expectations faltered. The ECB and BOE hiked rates by 50bps, but the sentiment is lower for the Fed, and a 25bp hike is priced in. The slower rate hikes this year will reduce the upside for yields, in the long run, and should provide tailwinds to gold, especially if the dollar continues to decline. Speculators have increased their net position, coinciding with the rally. There is a significant length which can be added to the market. The COMEX net position stands at 106,631 contracts, with a recent high of 291,000 contracts. We have also seen significant appetite in China at 44,809 contracts, up from -7,991 contracts in September. The recent high was 154,000 contracts in August 2020.

Commitment of Traders' Managed Money Net Position

The net length has increased in recent months, but there is significant capacity on the upside.

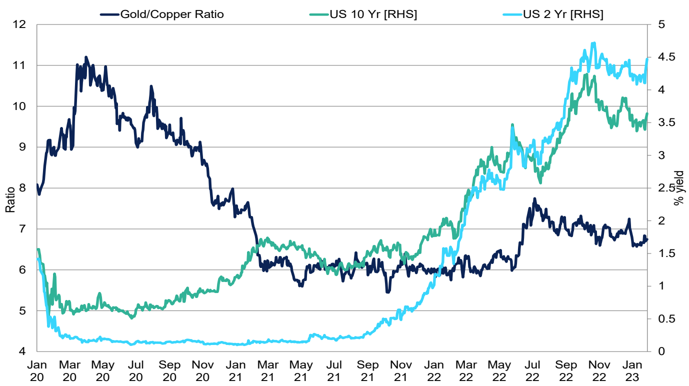


Source: Bloomberg

Outlook: We previously said the risk-reward for a short position in gold was declining, as the economic outlook and inflation expectations were also starting to fall. The Fed softened its stance on rate hikes and this caused gold to rally significantly; we underestimated the market second-guessing the Fed. Economic expectations suggest growth will slow in 2023; we are already seeing redundancies in Big Tech and the banking sector. The number of job openings in the US is still high, at 10.45m as of November 2022, the most recent data. We expect this to have fallen in December and January 2023. The shortage of workers can also be attributed to the baby boomers retiring early, and the younger generation shifting their priorities. This has triggered an output and employment gap as there are not enough skilled workers. However, personal consumption in the US has remained resilient at 2.1%, which helped contribute to a strong GDP in Q4 2022 at 2.9% Q/Q. Manufacturing, mining, utilities, and construction led the strong performance from inventory. Disposable income increased 6.2% in Q4, with real disposable income up 3.3%; this helps to explain the strong consumer spending. The uncertainty surrounding the global economy could act as a tailwind to gold prices; however, this depends on if China re-opening could cause asset prices to rally, prompting additional inflation risk. Chinese consumers hold significant amounts of capital, but confidence is low, limiting spending. we do not expect a change in sentiment in Q1; if there is, it will be spending on restaurants.

Gold/Copper Ratio vs 10yr Yield and 2yr Yield

The higher yield environment, soft Chinese economy, and falling inflation has meant the gains in the Gold/Copper ratio have been limited.

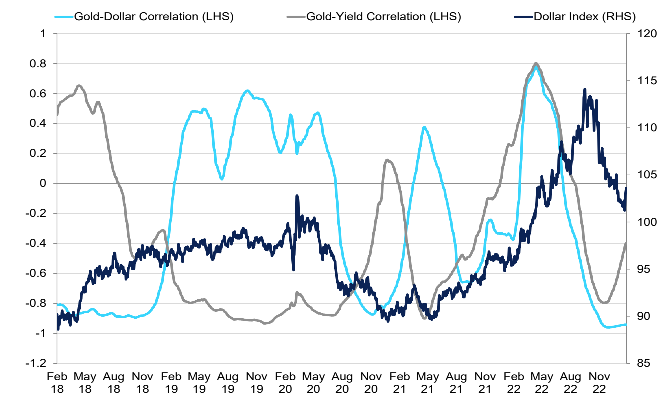


Source: Sucden Financial, Bloomberg

The 25bp rate hike confirmed the slowdown from the Fed, and at the time of writing, the probability of a 25bp rate hike in March was 81.8%. This would bring rates to 4.793%; the terminal rate currently stands at 5%. NFPs were strong, and investors believe a soft landing is increasingly likely. If this shifts higher to 5.25/5.5%, the dollar will correct sharply, prompting precious metals to decline sharply. The forward guidance from the Fed triggered inflation expectations to fall in the US, and we are seeing CPI fall, but CPI Ex food and energy is expected at 5.7% in January, compared to CPI at 6.5% Y/Y. The ECB and BOE have higher inflation to deal with, and the elevated currencies can be attributed to higher rates and weaker sentiment for the USD. The US yield curve is inverted, with the 2yr at 4.26%, 5yr at 3.68%, and the 10yr at 3.54%, as of January 30th. The decline in the longer dated yields has helped trigger a rally in gold prices, and investors are expecting the Fed to start cutting rates in July 2023, but the probability is only at 20%, rising to 78% in January 2024. This will aid gold prices, and as a result, we favour gold in 2023. As the yield declines, the opportunity cost of holding gold is lower; there is a significant upside from speculators on COMEX as they hold a net position of 106,631 contracts.

Correlation Between Gold/Dollar and Gold/10y Yield

The correlation between gold and the dollar is -0.95, while the gold vs 10yr yield correlation is -0.4, but this was -0.8 in December.

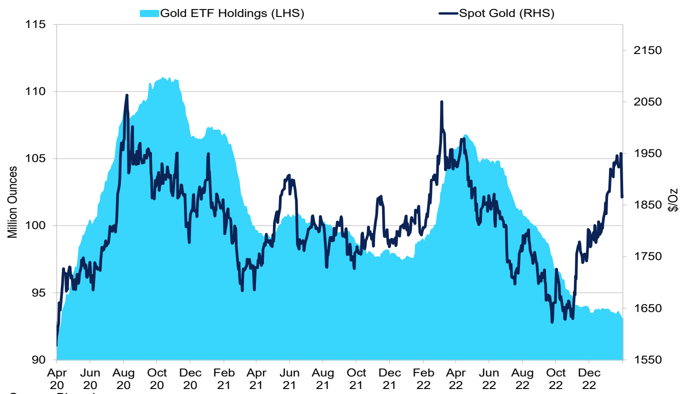


Source: Bloomberg, Sucden Financial

The correlation between gold yield correlation has started to increase; it is still negative at -0.45, which is not statistically significant; however, it is moving towards positive. The dollar yield correlation is negative and statistically significant, the dollar is sticky at current levels, and while we see a downside to the index towards 100, this depends on the forward guidance from the Fed. Investors are starting to look through the 25bp rate hikes in February and March and look to when they may be cutting; however, we expect Powell to highlight that rates will be higher for longer. A soft landing in the US would mean fundamental data from the US is strong, and this would mean a stronger dollar, and a potential rally in yields, causing gold to suffer.

Gold ETF Holdings vs Spot

The rally in gold prices has not been accompanied by higher ETF holdings, suggesting speculator buy-in is limited.

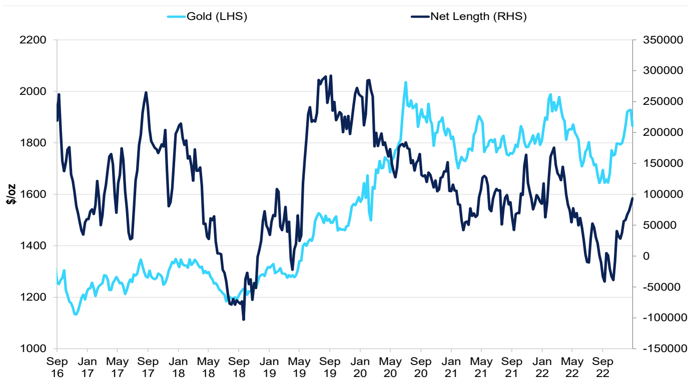


Source: Bloomberg

The decline in negative-yielding debt across the globe has triggered some stagnation in gold in previous years. This triggered investors to push into ETFs, but holdings are significantly lower at 94m troy ounces. Speculators and ETF holdings are not behind the rally; while the managed money net position has rallied, there is a significant amount of capacity for investors add length to their position. We can see that any strength in the greenback causes a sharp correction in gold, but this is around Fed meetings, and the current trend is strong. Physical demand has been strong, with central bank purchases rising sharply. November saw central banks buy 50 tonnes net, up 47% M/M from a revised 34 tonnes. China was the most significant increase, up 32 tonnes in November, and we are yet to see December figures, but total PBoC reserves stood at 1,980 tonnes, according to the Gold Council. Turkey recently increased their gold purchases by 19 tonnes in November, with YTD purchases at 123 tonnes. Annual gold demand increased by 18% to 4,471 tonnes, the highest level since 2011, again driven by central bank purchases. Physical demand from India has been lacklustre, with imports down 79% Y/Y in December as the rise in prices caps demand. Local demand was poor, and prices were in discount for December, with the average discount in 2022 at $8/oz. The MCI 1st generic trades at Rs56,830/t as of January 30th, but demand will rise due to the wedding season. The higher price will act as a headwind to demand; the discount in India has been expanding, outlining weak demand. The Chinese consumer is key to gold in Q1; the loss of economic confidence in China's economy has reduced spending. The accumulation of savings in China may put households in a greater position coming out of COVID. As a result, there has been an improvement in gold and jewellery consumption since COVID, and as the country transitions to more service-based growth, we anticipate this to continue.

Gold vs Commitment Of Traders'

The moderate increase in net length from speculators boosted prices, but there is significant upside capacity.



Source: Bloomberg

Silver

Spot Silver $/Oz

Spot Silver $/Oz

Source: Bloomberg, 16.02.2023

Sentiment

Softer Tightening of Monetary Policy	China Recovery Story	Stonger Solar Outlook	Rebound in Jewellery

Q4 Review: Silver prices strengthened in the last quarter of the year, gaining as much as 15%, to test $24.00/oz. Market turbulence, rising recession expectations, and prevailing strength in the green energy sector supported precious metal prices during the quarter. The gold-to-silver ratio has come down below 80 once again, suggesting that factors in silver that are not related to gold, such as the green energy sector, pushed the metal demand higher in Q4 2022. When weighed against June 2022 levels, silver ETF holdings are diminishing at the fastest rate among the precious metals group, underscoring that a more considerable portion of the demand for silver is driven by physical consumption

Gold to Silver Ratio

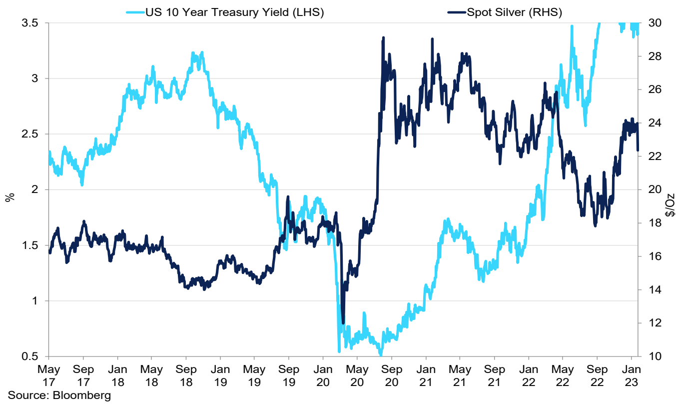
Gold to silver ratio improved in recent weeks, as China's demand for industrial use remains muted.

Source: Bloomberg

Outlook: With the dollar continuing on a downward trajectory in recent months, the greenback is set to remain on the back foot compared to the highs of 114 we saw in September. Still, the currency could find support around the 100 level in Q1 2023, given the US economy's resilience to both tighter monetary policy conditions and souring global prospects. In the meantime, consumer prices are softening month-on-month. At the same time, core inflation creeps up, allowing the Fed to hike less aggressively this year, and forward swaps anticipate a 25bps hike in February. This could create upside opportunities for silver, and a softer pace of tightening monetary policy will drive the narrative for the attractiveness of precious metal. The price performance is still strongly linked to bond prices, given that the ratio between the metal's performance and the 10yr US Treasury yield remains strong at 70.0. Further headwinds could materialise later in the year, as we expect inflation cooling to slow, and the potential risk of another energy prices spike, driven mainly by China's reopening, is still on the table. As a result, inflationary expectations could be on the rise again, forcing the markets to reassess the inflation and interest rate outlook. We do not see the Fed reaccelerating its pace of tightening, but instead, the terminal rates will remain higher for longer, and QT will come to the forefront of policy decisions.

Spot Silver vs 10yr US Treasury Yield

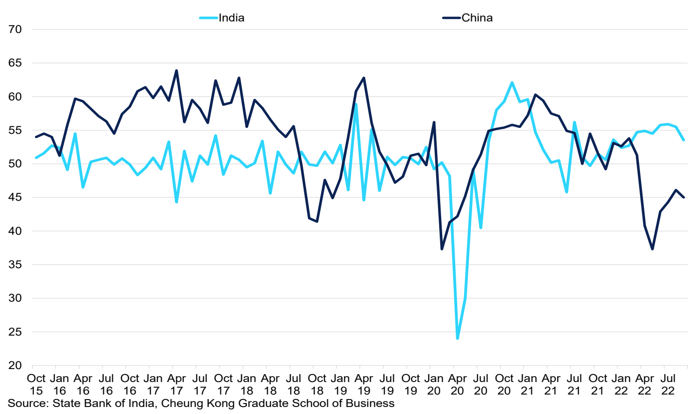
Both indices continued to point to strong negative correlation, with monetary policy outlook driving the convergence..



With the pace of interest rate hikes subsiding for this quarter's forecast, markets have begun to pay close attention to the impact this cycle has had on the real economy. As the appetite for the dollar is calming, precious metals, including gold and silver, might shine as traditional safe havens again. This, coupled with continued geopolitical uncertainty, should benefit silver's speculative performance. With slowing economic growth in major economic sectors of the world, the threat of recession could bring silver prices to the high of $25.30/oz. We do not expect the strength to be as sharp and extended as seen during last year's Ukraine crisis, but slowing growth will create more opportunities for precious metals this year. Global economic weakness, particularly the divergence between economies' growth, could create pockets of opportunities for precious metals during times of uncertainty. Overall, we are looking for a price-friendly environment for silver in 2023, supported by the looming threat of recession and an eventual peak in central bank rates. Despite a decline month after month, higher historical inflation should also support metal performance as monetary policy's influence on metals fades. This, combined with the prospects of a softer dollar and weaker asset valuations in the US, will support silver prices as investors shift their exposure to less volatile components of the economy.

Jewellery Sales in China and India

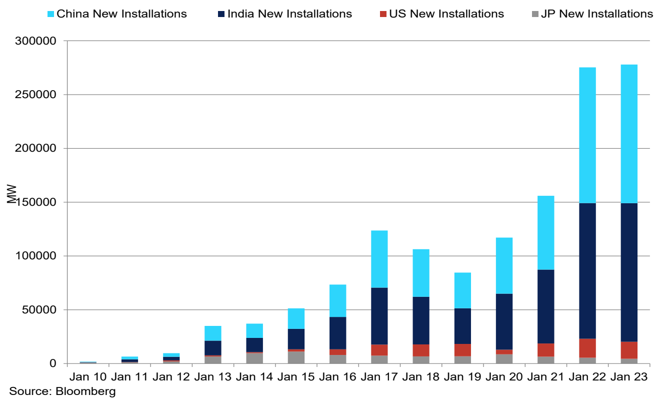
Both nations are set to benefit from holiday festivities held in Q1'23.



Given the prevalence of industrial side effects of silver demand, its price growth could outpace that of gold further into the year, especially driven by China's industrial reopening. While the reopening of lockdown restrictions in the economy is beneficial for the metal's use, we see no tangible changes in real demand take place until after the national holiday season. This could mean the cross with gold narrows further, as both the industrial and speculative sides of demand benefit. Globally, electrical and electronic demand is expected to grow modestly. Smartphone shipments are predicted to rise by 5.0% in 2023, up from 2022's low base to 1.3bn units. Still, the smartphone outlook is clouded for 2023, in line with the autos, as consumers choose to delay the decision to upgrade their phones or buy new models altogether. Another key component of silver's price performance is its use in the construction of solar turbines, which separates it from the rest of the base metals in its industrial usage, such as construction. According to IEA, solar PV forecast is set to remain just as strong as what we saw in 2022, with global demand as high as 190GW in new capacity additions. The region that has seen growth stall so far is China, given the prevalence of lockdowns in the country. In other areas, the sector is thriving. Even in the European Union, which is expected to contract in 2023, PV solar is set to expand by 29% to 53.6 GW in 2023, another year of record growth. In the US, growth of 21% is expected following 2022, with 2023 seeing a boost from delayed projects being reinstated, according to SEIA. Even with a recession in place this year, we do not anticipate it to derail the long-term demand for green energy and, in turn, silver. PV demand is set to grow rapidly this year, increasing silver demand from 150moz of silver in 2022. The jewellery side will also benefit from higher spending from China and India, but its impact on silver prices will be marginal.

Solar PV Installation Outlook

2023 is set see another record level growth in installations worldwide.



Silver, in line with gold, will continue to benefit from a cooler pace of interest rate tightening set to take place this year. We do not expect inflation to reach target levels in the near term, and with this in mind, terminal rates from key central banks will remain higher for longer. In Q1 2023, softer interest rate hikes by the Fed and the ECB will boost precious metal appetite, and higher levels of economic uncertainty will help investors shift their investments to safe havens. Moreover, with silver's industrial demand taking up an incrementally bigger portion of demand, China's reopening will help boost silver metals prices later in the quarter.

Palladium

Spot Palladium $/Oz

Sentiment

Auto Market Outlook	China Recovery Story	Supply from Russia	Supply Chain Bottlenecks

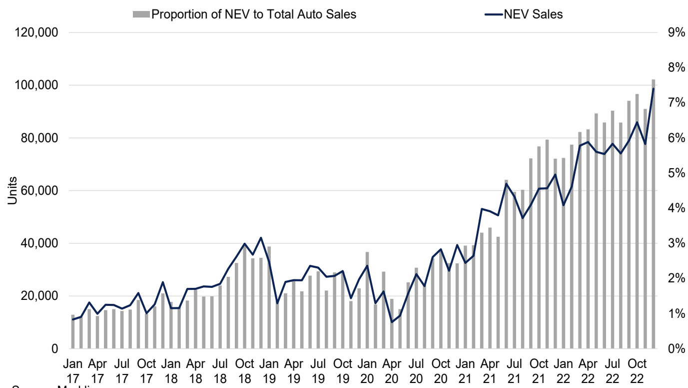
Q4 Review: Compared to platinum, palladium continued to decline in the quarter, falling to a lowest of $1,675/oz, which has not been seen since December 2021. This was primarily driven by declining industrial use, which weighed on price performance. This was also confirmed by the gold-palladium ratio, which has risen sharply as gold prices rose by $125/oz in the quarter. Even a jump in ETF holdings in the last couple of months failed to support metal prices. Total holdings jumped to 447Moz; the September high. A similar but much shallower improvement was seen in the platinum market.

Outlook: In 2022, the US car sector remained on the back foot, with sales steadily below the 5-year average. Continued supply chain disruptions and rising price levels meant retailers felt the strain of a weakening vehicle market. Now that demand for new orders is low, consumers have shifted to second-hand cars. In Q3 2022, we saw second-hand car prices rise by 12.50% in July, but supply chain problems meant car components were not delivered on time, exacerbating waiting times for vehicle delivery. However, once the demand for new vehicles was satisfied, the looming threat of a recession forced consumers to reassess their spending habits on non-essential items, causing the price of used vehicles to fall sharply. Prices declined by 14.9% y/y in December, marking record lows; we expect this is due to the high base of growth in 2021 when the supply chain issues were at their peak. However, on a month-on-month basis, prices have maintained their value at 1.5%. Appetite for vehicles is not yet at historic lows; the decline in purchases is expected to gain momentum in 2023, as consumers keep their vehicles for longer, reducing the availability of secondary platinum and palladium.

With the shift to the oversupply in the US in the auto market, the pressure on PGMs should be felt more sharply. This would mean the build-up of inventory of new cars and a simultaneous decline in the prices of new and used vehicles. We expect the pressure on prices to be gradual and drive the longer-term trend for the year. Automotive palladium demand will likely remain unchanged in 2023, as increased production of light vehicles will be negated by the market share loss to BEVs and more widespread use of gasoline autocatalysts, with some platinum substituted in place of palladium. Automotive demand is expected to be slightly lower at 7.7moz in 2023.

US NEV Sales vs % to Total Auto Sales

EVs continued to benefit from government support and general demand uptrend.



Source: Marklines

From the supply chain perspective, we see a continued recovery: shipping rates have fallen by 79% y/y, and input prices continue to decline steadily. However, we are heading into a period of restrained demand, in which consumers begin to make conscious decisions to save for the expected recession. Consumers are likely to slow down on their purchases, and it may take a while for purchased vehicles to return to the market for scrapping. Indeed, autocatalyst scrap palladium supply fell by 7.7% in 2022, and we are likely to see similar figures in 2023. This, coupled with the continued tightening of monetary policy, will make car refinancing even more expensive, driving consumers away from purchases they cannot afford. This year's palladium balance is forecast to slip into a surplus of over 500koz, as the supply processed stock picks up in South Africa, weighing down on prices during the year.

Platinum

Spot Platinum $/Oz

Sentiment

Auto Market Outlook	China Recovery Story	Supply from South Africa	Supply Chain Bottlenecks

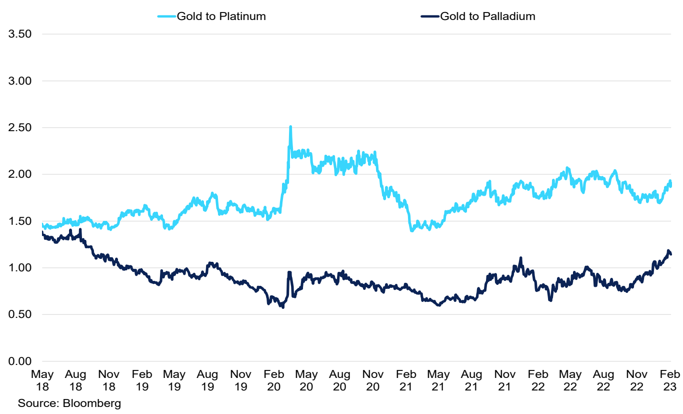
Q4 Review: Platinum, in line with other precious metals, jumped in the last quarter of the year, closing higher at $1,074/oz. This is a complete reversal compared to its sister palladium, which continued to decline to test the low of $1,675/oz. Indeed, the palladium to platinum cross has weakened substantially, falling to 1.65, a level not seen since summer of 2019, and we expect it to fall further. Despite the significant run-in price, the ETF investment has been net negative, mirroring the trend across gold and silver. This confirms the industrial trend driving the demand for price performance, especially in recent months.

Outlook: The auto sales outlook is seen diverging in different economies. The auto sector in Germany has seen a significant drop in 2022, with sales averaging a five-year low. For both diesel and petrol, vehicle sales have decreased substantially, dropping to 66,700 and 36,500 units respectively, while the difference between the two has declined to a 5-year low. Both types saw sales fall sharply in recent months as producers decided to cut back on production rather than prioritise sales of one vehicle type over another. The only sector observing steady growth is the electric vehicle segment, where sales have shot up by 114% year-on-year and 70% month-on-month, with no indication of slowing down. The initiation of tax incentives in the last quarter of the year led to even bigger growth, as manufacturers sought to gain from lower prices before the tax incentive change. In 2023, global automotive platinum demand is predicted to grow by 14% to 3.3moz as supply chain disruptions in the auto market ease further. Demand in China is expected to decrease slightly year-on-year to 2.5moz. Still, it will be almost double the total demand from Western Europe.

Primary supply is expected to grow by 6.0% in 2023 to 6.0moz, with output rising by releasing the stored-up in-process inventory caused by postponed smelter upkeep in South Africa in 2022. Secondary supply is expected to decrease marginally, with weakened automotive and jewellery demand resulting in lesser material being recycled. Last year, the shortage of semiconductor chips impacted the production of new light vehicles, leading to a bigger requirement for used cars, with fewer being disposed of than usual. Additionally, the physical platinum demand has experienced an increase due to the positive news of reopening China, given its share of consumption in the automotive, jewellery, and industrial sectors.

Gold to Platinum vs Gold to Palladium Ratio

Gold to Palladium ratio strengthened rapidly, as palladium growth stalled in comparison to platinum.



At the start of this year, jewellery sales have increased in China and India, with people making preparations for the holiday season. We expect these premiums to surge back up in January and February before the holiday festivities, which are usually the peak season for jewellery. However, the overall level of sales is likely to drop in 2023 as the world enters a period of slowing growth with sector demand anticipated to fall by 7.0%. From the industry standpoint, the platinum market is estimated to be oversupplied by over 400koz, partly because of the South African stockpile build-up in 2022 being processed. Gross demand is expected to grow as the advantages of platinum substitution into gasoline autocatalysts outweigh the assumed declines in jewellery and industrial utilisation.

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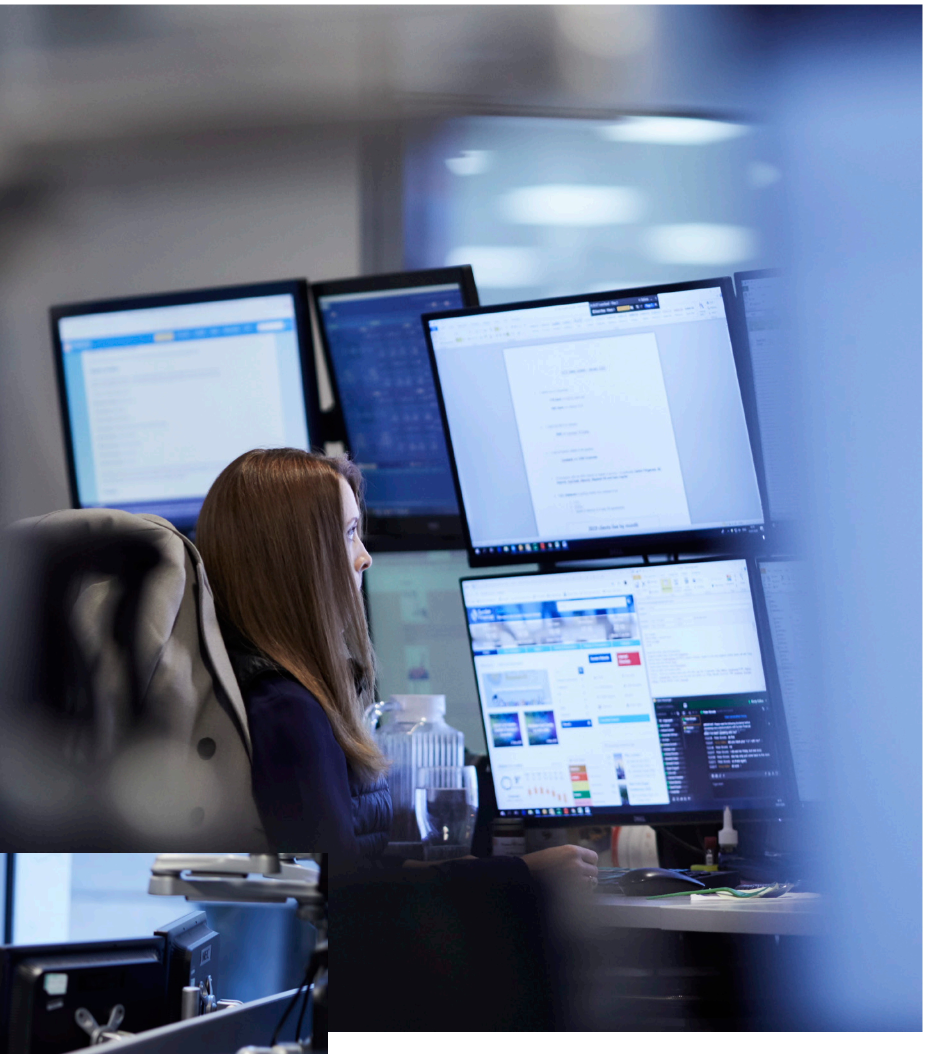

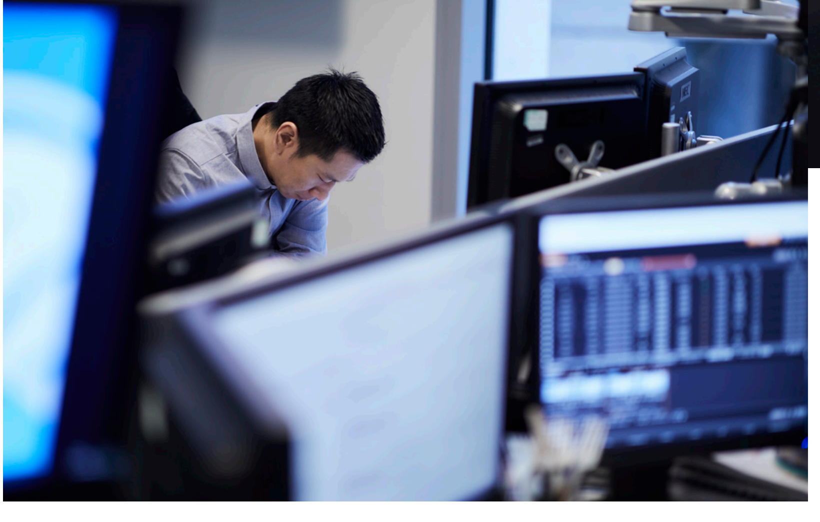

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