Sucden Financial

Quarterly Metals Report

Q3 — August 2022

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

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Published by:
Sucden Financial Limited
9 August 2022

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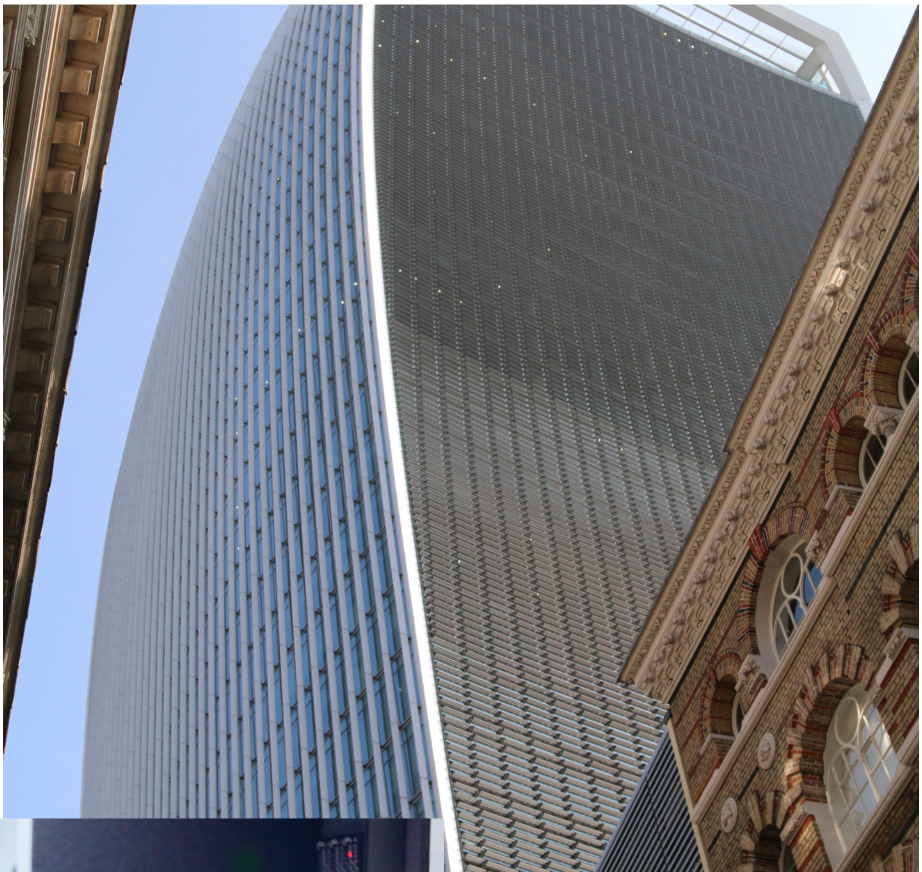

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Summary

The macro-economic environment has weakened significantly as growth fears rise, amid persistently high inflation. Central banks are data dependent and this could mean they slow rate hikes, as growth starts to slow, this has meant a downside to the US 10yr yield, but also we see downside to rate hikes in Q4. Europe will likely enter a recession before the US and will take longer to recover, but material availability is significantly lower shown by low inventories. Off-exchange stocks are high, but the low liquidity, volumes and inventories indicates higher volatility and sharp moves, although the options market shows traders positioned for the downside. Higher interest rates will slow growth, but the labour market is still strong and signs of weakness for employment will accentuate recession fears. End-user demand is poor, and this will continue in Q3.

Aluminium (Al)
Aluminium underperformed in Q2 2022, despite China reopening its lockdown restrictions in May, as recovery from the region has been lacklustre and struggled to gain pace. Output and smelting operations continue to operate at normal levels and we expect material to be shipped to Europe. As oversupply grows and low premiums prevail in China, more will flow into Europe, which is currently experiencing higher premiums and low inventory levels. Our range for the quarter is $2,200-2,700/t.

Copper (Cu)
Premiums in China increased in June and July as downstream demand improved, but the latest Mfg PMI data was contractionary. China's COVID policy caps upside potential of stimulus measures as the property and construction sectors are weak. Mine supply is improving and H2 2022 output will be stronger than H1, with operating rates for producers in China high we expect production to outstrip demand. Inventory levels of raw materials and finished products are low suggesting we could see re-stocking of social inventories. Macro sentiment is deteriorating as data weakens and this will weigh on copper due to its macro links. We expect prices to be sold above $8,500/t with our downside target $6,800/t with buying pressure around $7,200/t.

Lead (Pb)
Lead demand from autos is poor, especially in Europe as sales figures for ICE vehicles is at multi-year lows, and passenger vehicles have declined 15.4% in H1 2022. We expect this to continue in H2 2022, however due to the extremely hot weather demand for replacement batteries could increase in Q4 2022. The supply chain issues in China due to lockdowns have reduced the collection of scrap batteries, and this caused prices of scrap batteries to rise. TCs suggest that supply in China is ample but Europe remains tight, but supply of lead will improve as maintenance comes to an end and operating rates for secondary and primary lead increases. Range $1,800-$2,130/t.

Nickel (Ni)
Fundamentals come back in play and the large onset of supply has triggered downside pressure. The open interest is still low and volatility high, this will keep volatility high. Funds have liquidated their long position and this has reduced prices with the low volumes outlining that there is little appetite to trade. Imports of ferronickel from Indonesia to China have been increasing since the nickel ore export ban, as a result this significantly impacted by the reports of a NPI and ferronickel ban from Indonesia. China's prices will increase as availability declines, impacting stainless margins and production of 300 series. 200 and 400 series output will be boosted by the higher nickel prices. High EV sales are set to continue but stainless steel is firmly the largest consumer of nickel. We expect a test of $25,000/t before prices edge back towards $18,653/t.

Tin (Sn)
Tin prices have declined as inventories are rising, with sales growth slowing marginally but at a much higher level. The proposed Indonesian export ban will be bullish in the long run but not for Q3, inventories are rising and spot prices in China are falling suggesting decent availability at this time. Smelters are looking at production costs and margins; this could trigger some output to fall in the coming months, especially in Q4 2022. Spreads have weakened in recent months as the supply outlook improves and long liquidations in the flat price. Range: $21,285/t-$27,790/t.

Zinc (Zn)
The divergence in gas prices and the LME 3-month zinc is unsustainable, and the cash to 3-month spread has started to respond by tightening into $113/t. Russia cutting off gas to Europe will increase costs exponentially and electricity prices will rise even further. We highlight the large short position in the LME bandings for October. Premiums in China are falling but TCs are starting to rise outlining improved mine supply. Zinc ore imports are also falling but mine supply in China is rising, prices are significantly above marginal costs and full sustaining costs including royalties. Demand for zinc is poor due to the weak construction business in China and declining end-user demand in ROW. There are significant supply risk to zinc in Q4 and this will mean zinc prices rise towards the end of 2022. Macro weakness could cap the rally, unless the USD weakens significantly with a range of $3,300/t - $4,100/t.

Iron Ore & Steel
Iron ore and steel prices will be supported by rising energy costs, and hope of stimulus filtering into the real economy, but steel mills are reducing output due to losses and high costs. Local government bond issuances are increasing to boost infrastructure expenditure which would boost demand for iron ore and steel. Seaborne premiums have declined significantly but higher-grade fines and pellets retained value but have since declined sharply. Finished steel inventories are high outlining weak demand, and we expect these inventories to fall if mills remain offline for a significant period. The Chinese economy continues to stutter and this will plague growth, the property sector is weak and this caps property demand. We expect a range of $92.5/t - $122/t.

Gold (Au)
Whilst gold declined quart-on-quarter, it has held up much better than other assets, including precious metals. We attribute this to the fact that gold helped cover some of the losses we have seen in a broad market during the quarter. However, with the Fed and ECB hiking aggressively in July, there is still further downside to gold. Still, we expect the metal to hold up better than its precious counterparts as it is not impacted by the industrial outlook, which continues to deteriorate, despite China's re-emergence from lockdown restrictions. Our range: $1,650-1,860/oz.

Silver (Ag)
Silver, in line with palladium, suffered significant declines during the quarter, as the combination of investment sentiment as well as industrial demand weighed heavily on the metal. Gold to silver ratio widened further, to the levels not seen since 2020 and we expect the divergence to widen as gold holds up better than other industrial use metals. The only upside for silver demand comes from the solar industry and the continued expansion in renewable energy installation this year globally. Our range: $16.60-22.00/oz.

Palladium (Pd)
Palladium was once again impacted by a softening demand outlook, as the metal fell by as much as 19% during the quarter. Auto production between economies is diverging but the overall outlook for this year is on the downside, which will limit the use of the metal in auto catalysts. Supply side bottlenecks are easing, but with softer economic outlook globally, the manufacturing side uses are likely to weigh on the metal further to trade in $1,750- 2,330/oz.

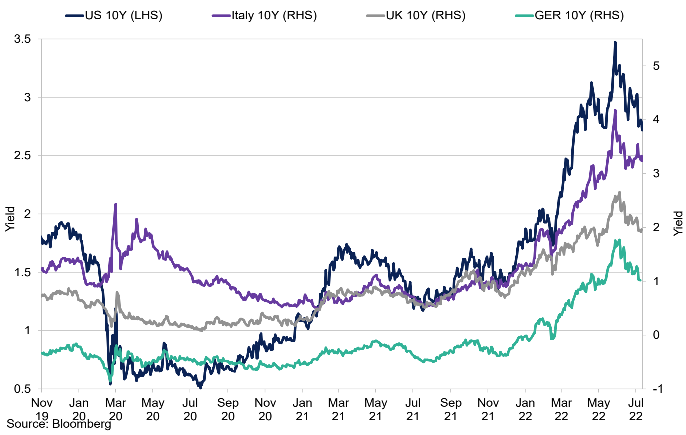
Platinum (Pt)
Despite platinum being less exposed to the auto sector than palladium, the metal saw moderate declines during the quarter as the demand side outlook weighed on the metal's use for this year. Mining production is improving; this, coupled with weakening demand, is likely to create further pressures for platinum for the quarter ahead. These factors add downside risk to the demand forecasts for the year, given that auto supply chains are still highly stressed because of lockdowns which are continuing to ease in China. The range: $800-950/oz.

Market Overview

Global Outlook: The first half of the year saw the worst equity market performance in decades, as indices such as S&P 500 fell by more than 20%. At the beginning of the year, it was unclear how far inflationary pressures would rise and how aggressively the central banks would have to respond to a persistent rise in prices. The Fed has already begun to hike, and the ECB also increased its rates in July, the policymakers are behind the curve. Indeed, the 150bps hike in federal funds rates across two months was the largest single rise in decades. At that time, the Fed was able to coordinate a soft landing for the economy and avoid triggering a recession while bringing down inflation. Even with another round of aggressive hiking by the Fed already in place, the real rates are unlikely to come back into positive any time soon.

Developed Economies' 10yr Yields

We saw a rapid increase in yields across major economies as central banks began to hike aggressively.



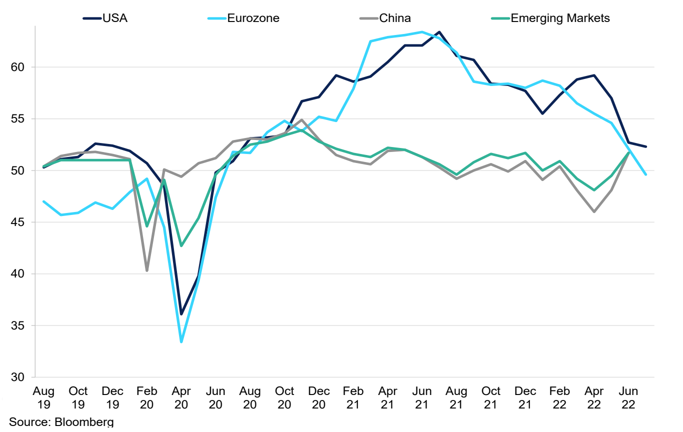
We expect inflation to remain elevated in the coming months and rate hikes are expected again in September, increasing the risk of economic contraction. With recessionary fears to continue to grow in the coming months, we expected markets to price in softer interest rate hikes from both US and Europe in Q4, and the forward curves are starting to price that in. Softer demand globally will see lower retail sales as well as demand for manufacturing products. China is recovering; however, given the current pace of reinstating lockdown restrictions, recovery has been lacklustre. As supply chain issues are easing, diminishing demand and labour shortages continue to keep lead times elevated. Softer supply and demand should keep the metals in equilibrium, with possible excess coming from China.

Oil: Oil prices continued to have a wild run in Q2, even after the introduction of sanctions on Russian oil exports earlier in the quarter. Prices fluctuated between $95/bl and $125/bl as conflicting factors of high inflation, tighter monetary policy, slow recovery from China, and slowing growth globally intensified. However, prices remain high, at around $100/bl levels, as market conditions remain tight. There are signs that replacing Russian oil remains challenging. OPEC producers would need to increase their production at the fastest pace in five years in 2023, if they were to balance supply and demand. OPEC estimates this year's demand to increase by 3.4m bl/d and then decline slightly to an increase of 2.7m bl/d next year to total 103m bl/d. These figures are, however, based on assumptions that global growth will not be undermined too much by the effects of a stagflationary environment or geopolitical tensions from Russia. To achieve these projections, OPEC would have to deliver more than 30m bl/d on average next year. Whilst this is not the record output from the group, it would bring the supply to the highest level since 2018. More so, it would push the spare capacity to a multi-year low of 2m bl/d, according to Bloomberg. Global oil production is running practically full steam. Production in the biggest shale oil basin in the US has already hit a record in June. Saudi Arabia and UAE still have a bit more capacity, but other OPEC members are struggling to continue drilling. With summer being the busy period for petrol demand, and with the unemployment rate remaining at 5-year lows, demand should continue to remain robust. As a result, OPEC expects global oil supply to lag behind demand well into 2023.

PMIs: The US manufacturing performance signalled a further decline in operating conditions in June, as the headline PMI fell to its lowest level since July 2020 at 52.7. Whilst still expansionary overall, both factory output and new orders saw sharp declines. Domestic and foreign demand is drying up, evident by the decrease in sales for the first time since May 2020. As a result, firms utilised their current holdings of material and other inputs to continue production. In the meantime, inflationary pressures remained historically high; however, gains in input costs and output prices were at the smallest level in three months.

Manufacturing PMIs

Major economies are seeing strong declines in manufacturing performance, with Europe already contractionary.



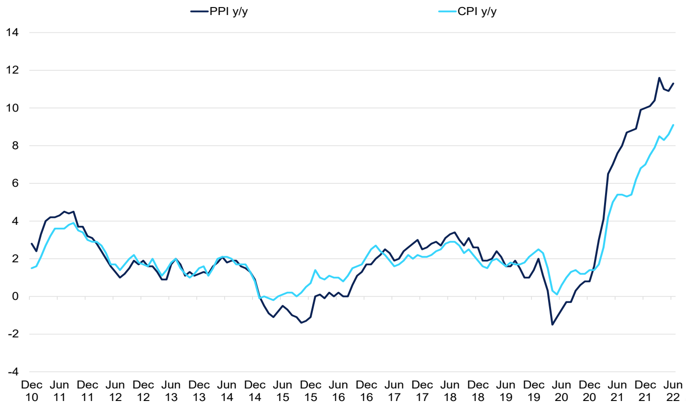
In the Eurozone, manufacturing ended the second quarter on a low as production levels fell for the first time in two years. The overall index declined to 52.0 in June, with the slowdown the most abrupt since November 2008. New business intakes and export orders declined, while business confidence fell to a 25-month low. Backlogs also declined for the first time in almost two years as companies shifted their focus on completing unfinished orders; overall, new demand is slowing. In line with the US, there were further signs of supply chains edging closer to stability as input lead times lengthened to levels not seen in 18 months.

The reduction of COVID-19 cases in China encouraged the government to lift lockdown conditions in late May, which encouraged production in June. As a result, manufacturing performance improved, as the indicator increased from 48.1 in May to 51.7 in June, an expansionary performance for the first time in four months. Output expanded sharply, with the quickest growth rate for just over 18 months. New orders and export sales also returned to growth, though expansion rates were modest overall. However, as the government chose to stick to its zero-covid policy and kept reimposing measures in areas where the number of cases are rising, we do not expect another month of similar upbeat performance.

US: Despite major challenges in recent months, most obviously persistently growing inflation, the US economy, in comparison to other countries, is in good shape to take the hit of rising interest rates. Consumer spending and investment remained robust, suggesting the overall economic performance was healthy. Retail sales were stronger than expected in June, increasing by 1.0% m/m. Moreover, personal savings as a percentage of disposable income continue to decline, falling to pre-pandemic levels of 5.4%, suggesting customers are still choosing to spend. Overall, the shape of the economy remains robust, although slowing. Moreover, labour market conditions remain historically robust. US employers added 372,000 jobs in June, meaning in the first half of the year, the country added over 2.0m jobs, hardly a sign of an economy heading into a recession.

US CPI vs PPI y/y

Both indicators continue to beat historic highs, as core and supply-side driven components see price increases.



Source: Bureau of Labour Statistics

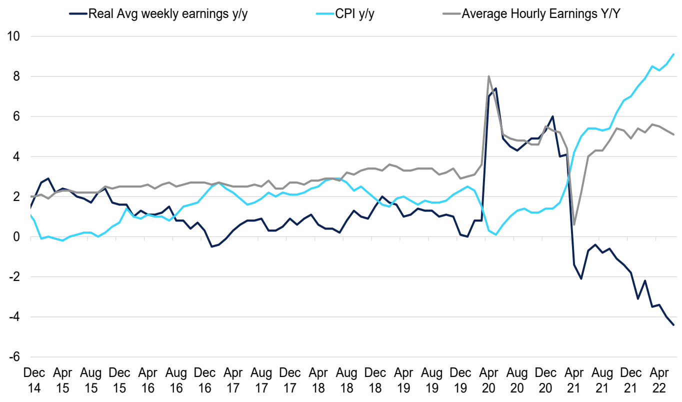
The area that is suffering now is spending on consumer goods, with inflation-adjusted reading declined by 0.4% in May, as consumers are facing rising prices. With still some wiggle room in balance sheets, consumers would rather prioritise expenditure on services during the summer months. Indeed, household balance sheets remain the strongest in decades, thanks to government support during the pandemic; however, as a result, we saw core parts of inflation accelerate to levels not seen in over 40 years. The stress is clearer in the housing industry, with rising interest rates pushing the 30-year mortgage rate to highs not seen since 2008 (6.00%). In June, the number of cancelled home sales increased to the highest level since April 2020, as rising mortgage rates made homes more expensive. With the most recent increase of 75bps, potential homebuyers are likely to put off their purchases for a while.

Therefore, there are worries that economies might already be in recession. For example, 2- yr and 10-yr bonds have inverted once again, which could act as a precursor to the growing recessionary environment. Indeed, according to Bloomberg, the chance of a recession in the US has increased to 38%. However, a more reliable indicator of looming recession is seen through the gap between the 10-year and 3-month. In each of the recessions of the last decades, this gap inverted strongly, usually a year prior to the next recession. The measure is now at 56bps, not even close to inversion. The recession is not yet imminent, although the economy is undeniably slowing. The near-constant warning, along with gloomy headlines, might mean that dampening sentiment could fasten the probability of recession, in which consumers decide to cut down on their purchases even if the household balance sheets still have more wiggle room. Indeed, US University of Michigan consumer sentiment is at the lowest level on record, and the economy is not even in a recession. The main reason behind the decline is cited as inflation. That would dampen the demand, exacerbating any downturn.

In the meantime, prices continue to grow across the nation, further dampening the appetite for consumption. June inflation numbers showed no respite for rising prices, as CPI grew by 9.1%, the high not seen since 1981. Month-on-month, prices were up 1.3% m/m, the second-highest in more than 40 years. Core prices have increased by 5.9% y/y, the lowest since January, and have been softening for months. Energy prices remained a principal problem, rising by 7.5% m/m, contributing nearly half of the overall increase.

US CPI vs Average Hourly Earnings Y/Y

Wages are growing, but not enough to outpace the growth we have seen in inflation.



Source: Bureau of Labour Statistics

At the same time, wages are not keeping up with the rising prices, as the real average hourly earnings are near -4.4% levels, vs 9.1% inflation growth. This will further eat away at available disposable incomes, and with buffer savings diminishing, deteriorating the ability of an average consumer to spend. Additionally, weakening consumer demand with easing supply chain bottlenecks will remove another important factor that the Fed cannot remove by aggressive tightening. This, coupled with softening commodity prices and lower shipping costs, should bring the US and global inflation to softer levels in the second half of the year. The Fed's main challenge will be to assure a soft landing, in which the pace of inflation is brought down to manageable levels while growth remains expansionary.

However, the Fed's toolkit is designed to affect demand goods and services rather than supply, meaning that volatile parts of the price basket are likely not to respond to the monetary policy tightening.

Europe: As a result of the crisis in Ukraine, coupled with factors such as inflation and tighter monetary policy impact globally, the impact on Europe has been unprecedented. In Q1, the bloc's growth was 5.4%; despite that, the European Commission expects growth of 2.6% in 2022. Moreover, the ECB has been behind the curve on inflation even as it introduced its first interest rate hike of 50bps in July, taking the economy out of negative interest rate territory for the first time in over 10 years. Energy security continues to be a concern following the ban on Russian oil, compelling nations to find new sources of energy and establish new transport routes. The more prolonged inflation remains elevated, the greater the risk that it becomes rooted. In July, the bloc's CPI reached a fresh record of 8.9%; core inflation also posted a new record of 4.0% y/y. The rising energy costs and the continued supply chain disruptions weakened demand, leading to a sharp slowdown in economic activity. As a result of the ECB being behind the curve, the EURUSD reached parity for the first time in 20 years. While the ECB expects positive growth this year, they also state their concerns about further disruption in energy markets that could cause a modest recession.

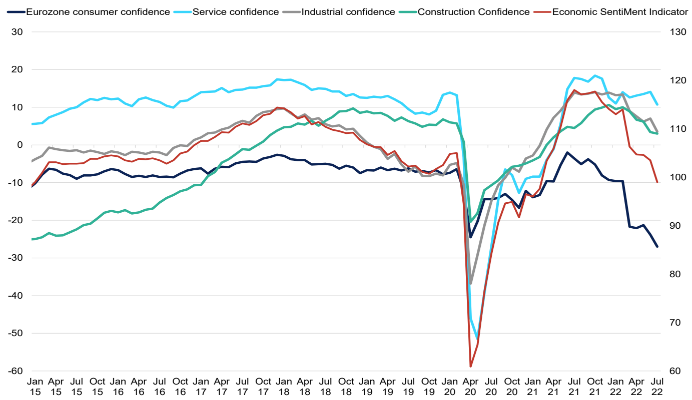
Europe is going through a prolonged summer heatwave. However, the attention is on bloc leaders who are focused on the upcoming winter and how the bloc plans to avoid shortages or further sharp price increases. This would coincide with resurging economic demand in China, putting further pressures on supply and, in turn, the prices of energy.

Industrial manufacturers could suffer the most as the bloc prioritises households, further dampening the manufacturing sectors. The EU has been stocking up on reserves to replenish the availability of energy for the winter months. The bloc plans to replace 2/3 of Russian gas imports by the end of the year, which equates to 102bcm annually. This shift became even more urgent after the Gazprom company reduced flows to Europe by 60%, citing a delay to repairs on the Nord Stream 1 pipeline that runs to Germany. EU projects that while the filling rates are on track to reach 90% by November, that level would fall below 75% if Russian flows are cut off. According to IEA, Europe will need to cut as much as

30% of its gas consumption by mid-February if flows from Russia are completely halted. However, total LNG imports have hit record levels, with 12.6bcm imported in April alone, representing a 36% year-on-year increase despite the reduced share coming from Russia. This would indicate that Europe's diversification efforts are beginning to bear fruit. Overall, the bloc is preparing for a contingency situation of overall cut off, but rationing would still need to take place to reserve energy.

European Confidence Indicators

Confidence indicators continue to deteriorate rapidly as the looming energy crisis clouds outlook.



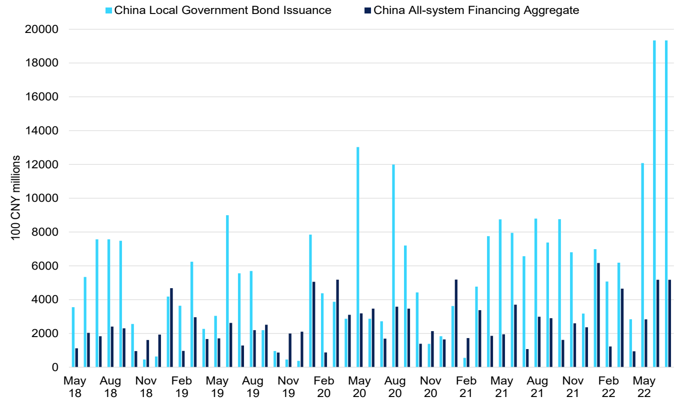
Source: Bloomberg

China: After a strong start in Q1 2022, the Chinese economy is set to slow in 2022. China's economy has been battered by the impacts of the pandemic in Q2, and while we saw a partial reopening of lockdown restrictions in the end of May, the recovery has been lacklustre, as the government chose to stick to its zero-covid policy and kept reimposing measures on areas where the number of cases is rising. In Q2, the growth figure disappointed to the downside, as the economy expanded by 1.0% y/y, vs 4.8% in the previous quarter. Whilst manufacturing has been the least impacted part of the Chinese economy, as it now emerges from the impacts of the pandemic and sees new headwinds in Q3. As a result, recessionary fears globally have been increasing in recent weeks and are likely to dampen the demand for Chinese goods. Moreover, partial restrictions still remain in place and are hurting the recovery that is taking place. In the meantime, the cost of shipping continues to decline despite the slight reopening of measures, suggesting that there is declining demand for imported goods; the port congestion in Shanghai is minimal, and exports have improved.

In June, retail sales and industrial production bounced back strongly, but not enough to erode the losses seen since the lockdown measures were imposed. Retail sales and industrial production increased by 3.1% y/y and 3.9%, respectively. Private investment, however, continued to decline and has now reached lows not seen since the start of 2021. The near-term outlook depends on China's ability to control the number of cases per region or its willingness to tolerate double-digits to keep the economy open. Investors are worried that more lockdown measures may lie ahead as Beijing continues to mass test and implement mobility curbs on regions with a growing number of cases. Movement indicators suggest a recovery in subway systems, returning back to normal. So people are going out and getting to work, but travel outside in the country and between provinces is limited, so people might not feel like they can go out and spend.

China Local Bond Issuance vs All-system Financing

Both indicators have increased recently as the government attempts to inject liquidity in a struggling economy.



Source: Ministry of Finance of the People's Republic of China, The People's Bank of China

The Fed tightening is leaving little wiggle room for the Chinese economy to introduce expansionary monetary measures, although it did drop its RRR rate to 11.25% in April. The government stepped up its macroeconomy policy through public spending, policy rate cuts, and a more dovish outlook on the construction sector. While China still has more room to counter the slowdown in growth, the question the markets are faced with is whether the stimulus measures will be effective given current mobility restrictions. In particular, investors are watching closely as Beijing allowed local governments to accelerate their borrowing by selling 1.5 trillion yuan ($220 billion) of special bonds in the second half of this year. As a result, credit jumped to the highest level on record for June. However, meeting the 5.5% growth goal for this year will remain challenging, especially as China sticks to its zero-covid policy, with further tightening of restrictions whenever the number of cases grows. Home sales have recovered somewhat in May and should benefit from the package, but we think it will do little to stop the continued trend of long-term decline. China's outlook for this quarter is volatile and uncertain, given the surrounding operating environment. We expect third-quarter growth to show a marginal recovery quarter-on-quarter but remain well below the performance that we have seen at the start of the year.

Emerging Markets: High inflation, aggressive monetary policy tightening, and slow emergence from lockdown restrictions in China, coupled with growing risks of recession, are driving the global trends this quarter, and emerging markets are not an exception. In H2 2022, these economies are likely to feel the impacts more acutely as elevated debt levels raise the risk of financial tightness. As a result, the course of action for many central banks is to keep inflation under control at risk of slowing growth into recession. Historically speaking, emerging markets are in a slightly better position than before previous recessions, as high commodity prices last year and for most of this year should have helped improve the terms of trade for export-driven economies.

Inflation remains at the forefront of the monetary policy outlook. Additionally, food and energy prices rises have been exacerbated by the impacts of the crisis in Ukraine and subsequent sanctions on Russia, making up a large proportion of the inflation basket for many economies. As a result, we saw economies, such as Brazil, deliberate on cutting taxes for oil to help soften the costs from the energy sector. Higher prices for these goods are likely to have a profound social impact on lower-income households. Countries such as Serbia, Turkey, and India, on the other hand, have all moved to limit exports of agricultural products in response to the crisis of soaring inflation, which exacerbated the fears of food shortages. Overall, the outlook for EM performance this quarter is not uniform and will largely depend on the monetary policy approach the central banks are undertaking to quell inflation and the subsequent impact it will have on their prospective growth prospects.

Aluminium

LME Aluminium 3MO ($)

Source: Bloomberg, 03.08.2022

Sentiment

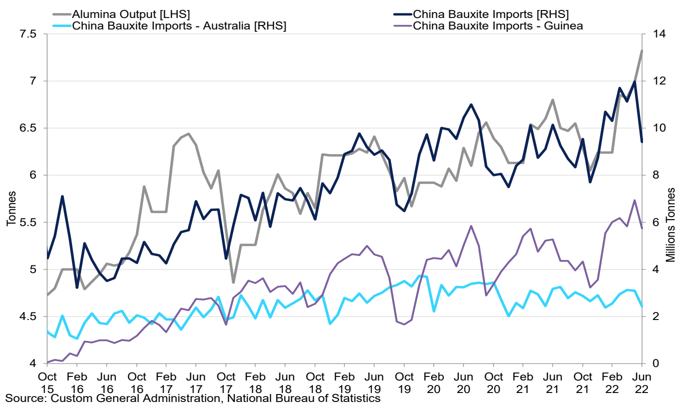
Robust Production	China's Demand	Supply Chain Bottlenecks	Chinese Property Market

Q2 Review: Aluminium performance disappointed to the downside as the metal declined by 29% during the second quarter to close at $2,445/t. In July, the metal broke below the support level of $2,400/t and has continued to decline to $2,353/t, a level not seen since April 2021. In May, lockdown restrictions were lifted, and we saw a recovery in domestic production as well as exports. Weakness in Chinese and global demand outlook exacerbated the decline in recent weeks, and with the Fed set to tighten the monetary policy once more in July, global recessionary fears intensified. As prices declined during the quarter, it significantly shrank supplier profit margins, causing some to cut down on production as a result. This has had a particularly strong impact on high-cost capacity regions such as Shanxi and Henan, and as a result, they have reduced production strongly. From the demand side, new orders of construction extrusions and aluminium sheet/plate declined amid the off-season, causing the domestic rates to decline.

Outlook: Following a relaxation of lockdown restrictions in late May, we saw production indicators improve in June. Alumina output totalled 6.99m mt, and while only 5% higher y/y, the level jumped 12% over the last 3 months, reaching series highs. China produced 3.36m mt of aluminium, up 4.5% y/y. The output totalled 19.5 6m mt in the first half of the year, an increase of 0.47% y/y. The production resumption and the new capacity in Guangxi, Gansu, and Yunnan contributed to the major increase. Summer months are also off-season, and so we expect the production to fall month-on-month in July, in line with the operating rates, which are likely to remain flat. At the same time, new order volume is set to be modest amid the wait-and-see sentiment. Looser electricity controls are set to benefit production, however, the fundamental demand picture remains lacklustre.

China Alumina Output vs Total Bauxite Imports and Australia Bauxite Imports

Alumina output continues to outperform despite slowing imports into China.

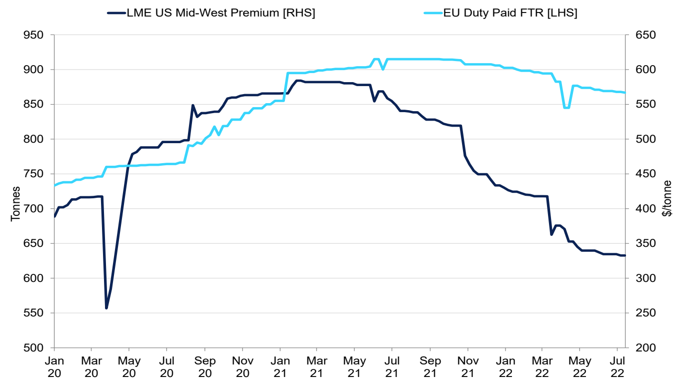


Source: Custom General Administration, National Bureau of Statistics

Despite a robust overall export performance in June, China exported 607,400mt of unwrought aluminium and aluminium products, down 10% from the previous month's high of 767,600mt, but still higher y/y. At the same time, the domestic aluminium export profits declined; therefore, we expect aluminium export volume to stabilise in the next couple of months. The surge in total exports in May was mainly because the delayed domestic orders in April. In addition, as domestic and overseas aluminium prices fell sharply, the demand from overseas outperformed. Overall, demand is falling, and so we expect the outlook for the metal to soften. However, we expect material to still be shipped to Europe. As oversupply grows and low premiums prevail in China, more will flow into Europe, which is currently experiencing higher premiums and low inventory levels. EU Duty paid FTR, while declining, still remains high; the level stands at $573/t, down from just above $600/t a couple of months ago. US mid-west premiums, however, are continuing to sell off, reaching lows of $640/t not seen since May 2020, as the market tightness in the US is less prominent than in the EU. Only logistical issues are stopping the spreads from loosening further, which would make it possible to carry material.

Aluminium Premiums

US premiums have continued to weaken but are yet to reach pandemic lows. EU premiums remain high.



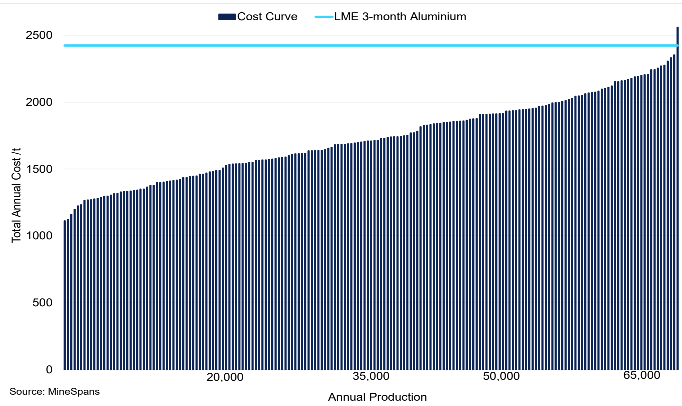
Source: Bloomberg, Platts

Imports, however, continue to grow as China imported 11.97m mt of bauxite in June, up 31% y/y; imports from Australia fell slightly month-on-month but remained 32% higher y/y at 3.09m mt; Guinea was at 6.94m mt, up 32% y/y. Imports from Indonesia continued to decline month-on-month and stood at 1.74m mt, down 18.6% m/m, but up 40% y/y; the mines have already used up their export quotas. Operating rates at secondary aluminium increased by 4.3% m/m to 43.0% in June. As the impact of lockdown restrictions continues to ease, the car supply chain shows more signs of recovery. In addition, government incentives are set to support the industry and a recovery in production, particularly in coronavirus lockdown-hit Shanghai, auto sales continued to improve in June, which supported demand for secondary aluminium.

Both domestic and overseas alumina prices declined in recent months and are expected to remain under pressure given the abundance of supply. The average alumina index stands at CNY2,957/mt, continuing to decline from the first quarter of the year. Shandong (CNY2,950-3,050/mt), Henan (CNY2,970-3,070/mt), and Shanxi (CNY2,870-2,920/mt) are all seen edging lower. Likewise, Western Australia FOB is at $345/mt, down 4% m/m, but still 180 yuan higher than domestic prices. While freight prices are declining, the price competitiveness for local prices prevails. As a result of lower prices and diminishing demand, some refineries are starting to cut down on production levels, especially as alumina prices fall below the cost of production; this should help aluminium to find a bottom this quarter. A similar story is seen in the US, where some mills are already facing the impacts of high energy prices.

Aluminium Smelter Cost Curve vs Aluminium Price

Most smelters are still able to produce even with lower prices, however, Chinese cost of production is the first to suffer from further declines.

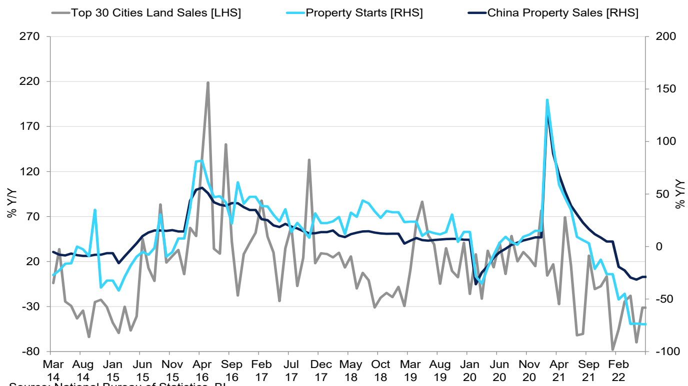


Source: MineSpans

As domestic prices declined, we saw operating rates between producers diverge. While small and medium-scale producers are unlikely to increase output amid the poor order volume, the operating rates at large producers continue to grow amid the relatively stable order volume and a large backlog of orders. Still, companies are not willing to place new orders amid diminishing demand. In the meantime, stocks continue to draw. The LME stock data continues to decline, falling to 17-year lows of 347,175t. SHFE inventory followed suit, and the level began to fall once more following the relaxation of lockdown conditions in late May; the level is now near lows not seen since early 2020. The recovery in China is not uniform, and while some areas are posting solid production, others are lagging behind. In terms of regional performance, as the domestic pandemic eased significantly in June, the operating rates in Jiangsu, Zhejiang and Shanghai areas improved, and the enterprises mainly produced on orders. Therefore, the inventory of finished products decreased.

China's Property Sector Performance

Property sectors have continued to deteriorate so far this year, and we believe stimulus from the government will not be enough to rebound the sector.



Source: National Bureau of Statistics, BI

Globally, aluminium users saw a renewed upturn in operating conditions in June, mostly driven by the Asian regions; all other regions continued to decline, with the US and Europe edging closer to contractionary territory, the lowest levels in nearly two years. The index jumped to 53.4 from 49.2, a solid improvement in performance. Indeed, output from Asia rose for the first time in nine months and at the fastest pace since the end of 2010, given the resurgence from the lockdown conditions in China. Moreover, Europe is seeing a sharper decline than the US. The speed of the decline in demand still remains unknown, and while markets are already pricing in recession in Europe by the end of 2022, the outlook in the US is still uncertain. Demand for aluminium will not completely disappear, as solar, in particular, is set to continue to grow, but contraction in the construction sector will definitely dampen the usage of material this year. To support the infrastructure, Chinese authorities allowed local governments to sell $220bn worth of special bonds in H2 2022.

As a result, credit reached record highs for June, and while it will trickle through to the general public, it is still unlikely to rebound growth in the economy. The property market is still struggling, with property start and sales declining for five consecutive months by 31% and 41%, respectively. The Chinese economy is going to improve marginally in H2, but not enough to offset the slowing economic prospects elsewhere in the world, and therefore the upside for metals is limited. The policies could help decelerate the slowdown in prices, but a rally is unlikely.

Copper

LME Copper 3MO ($)

Source: Bloomberg, 03.08.2022

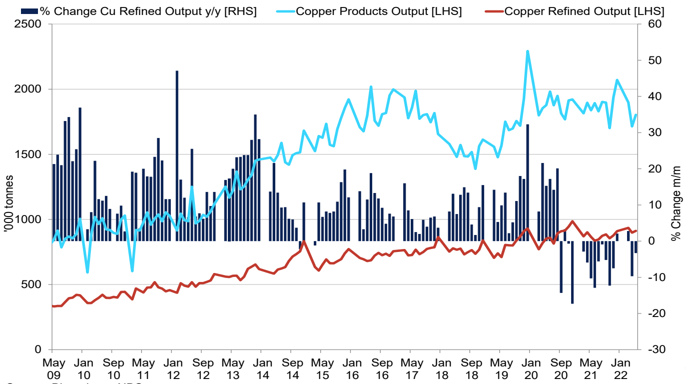
Sentiment

Softer Dollar	Dovish Fed	Slowing Growth	Lack of Fund Participation

Q2 Review: Copper prices declined by 20.35% as macroeconomic sentiment deteriorated and caused funds to reduce their long exposure to the market. Copper prices fell further in July, testing appetite at $7,000/t, but as the USD has failed to rally further, metals have caught a bid despite weakening data from the U.S., and the forward guidance from the Fed was vague and suggested that rate hikes would be data dependent. As we expect data to continue to weaken, hikes are likely to be smaller despite the strong employment market. The cash to 3-month spreads has predominately been in contango and stands at -$6.51/t at the time of writing, suggesting that the market is not tight despite the low inventories. Supply has been steady, and consumption in China has been particularly weak, but stimulus measures in China could improve end-user demand.

China Refined Copper Output vs Copper Products

Copper refined output is expected to trend higher in H2 2022 as demand subsides.



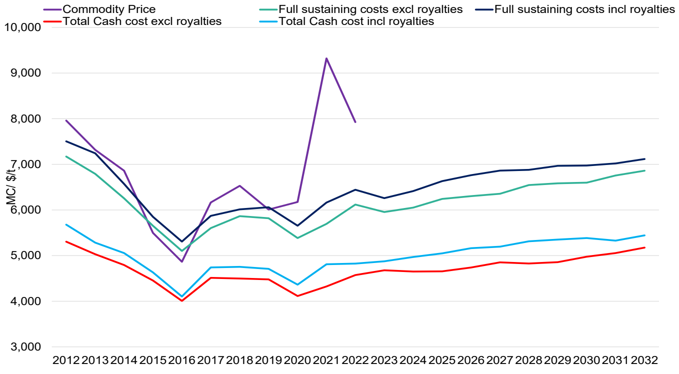
Source: Bloomberg, NBS

Outlook: Mine supply is strong as committed projects ramp up production; global supply is expected to reach 22.3m tonnes in 2022, up from 21.03m tonnes in 2021. Production from Latin America is forecast to increase to 9.3m tonnes, with Chile producing around 5.7m tonnes of that, Peruvian production rose to 2.37m tonnes by 2022, but output continues to slip due to community action and has averaged 166,000 tonnes a month so far in 2022. We could see an extra million tonnes of copper added in 2023, with DRC and Latin America adding the bulk of production. This gives us a flat supply and demand balance for 2022; next year is set to be a surplus of 521,650 tonnes due to the softening economic backdrop of Europe and America. According to the International Copper Study Group, the balance in the refined copper market was a mild surplus at 5,000 tonnes in May, up from a revised deficit of 23,000 tonnes in April. This brings the balance for the first five months to 43,000 tonnes, outlining the weaker demand outlook. Mine supply is improving in DRC, and this year output will reach 2m tonnes, rising to 2.3m tonnes next year. Chinese mining companies continue to invest in Congo, with the latest being China Molybdenum (CMOC), set to invest $1.86bn in the development phase of Kisanfu copper and cobalt; this means that CMOC and CATL hold 71.25 and 23.75% stakes in the Kisanfu mine with the government owning 5%. The mine will produce 90,000 tonnes of copper and 30,000 tonnes of cobalt. Exports from Chile have been robust, concentrate and cathode production increased to 2020 levels, but the value of exports has declined due to weaker exchange prices

The decline in LME prices has significantly reduced profitability for the value chain; however, most of the output remains below $7,000/t payable metal. Full sustaining costs, including royalties for 2022, average $6,443/t; according to MineSpans, the total cash costs, including royalties, stand at $4,825/t. LME price at $7,800/t at the time of writing clearly shows profitability, but smelter costs are high, and TCs are also starting to rise. The benchmark has increased for the first time in six years, and we expect this to continue.

Copper Marginal Costs vs Full Sustaining Costs vs Commodity Price

Prices have declined sharply in Q2 2022 but remain significantly above costs.



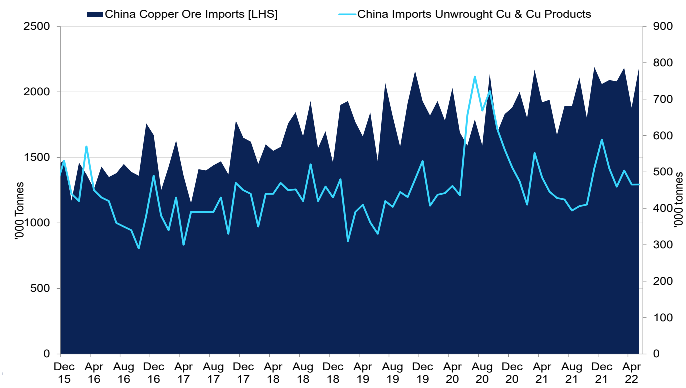
Souce: MineSpans

$65/t is expected to rise to $75/t in the near year as the market is balanced. However, new smelters commissioned will depend on the prices of by-products and futures copper demand. The trend is towards concentrating on a global scale, which will boost the probability of new smelters and sulphuric acid prices. Sulphuric prices are still high, which will boost the profitability of smelters. However, logistical issues in China due to COVID have built stocks of sulphuric acid. The operating rates of copper product producers such as wire, tube, and plate/sheet producers are higher and stand between 75% and 80%.

Utilisation is high, and while there is upside to production, we do not see sustained demand, and this material will likely end up in social inventories in China. Raw materials for copper products producers are low for PSS, tube, wire, and smelters. This could see imports of concentrate rise and production remain elevated to replenish domestic inventories in China.

China Concentrate Imports vs Imports of Unwrought Copper & Copper Products

Concentrate Imports increased to 2.06m tonnes in June as unwrought copper imports also increased.

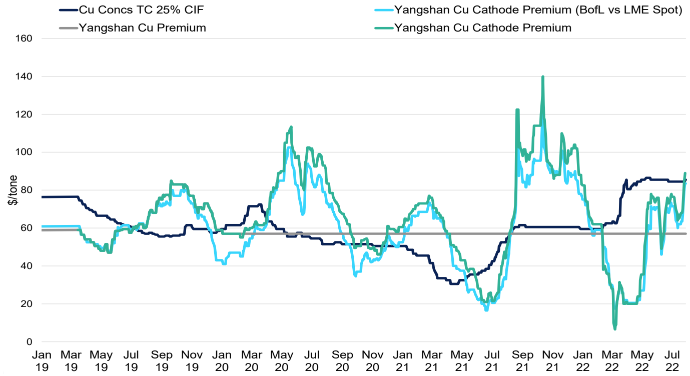


Source: China Customs, Bloomberg

Imports of unwrought copper and copper products into China increased in June to 538,000 tonnes, partially due to the import window opening and more robust demand from the downstream manufacturers as PMIs increased. The price of copper cathodes in China has risen in recent weeks as downstream demand started to improve; the 99.99% min delivered price is RMB60,250/t. This is significantly below the 18-month average of RMB62,800/t. However, the current price is above the 5-year average of RMB54,721/t. The price of scrap for copper wire is 99% delivered with tax unpaid at RMB53,600/t; the spread between scrap and primary material has increased, reducing the consumption of primary copper. China's imports of copper scrap increased in June to 165,136 tonnes, up from 150,000 tonnes in the same period in 2021; total imports for H1 2022 at 881,277 tonnes and this was marginally higher than H1 2021, which was 821,378 tonnes. Lower demand for material outside of China may prompt scrap shipments to improve if domestic demand remains slow and China's scrap prices rise enough to offset freight. According to SMM, the domestic supply of scrap will increase by 3.6% in 2022; scrap demand is more dependent on imports accounting for 43% in 2022. The spread between copper cathodes and scrap is widening at the time of writing, which could incentivise imports and scrap consumption.

China Premiums and TCs

Premiums started to improve in June and July as the economy re-opens, but we see a limited upside.

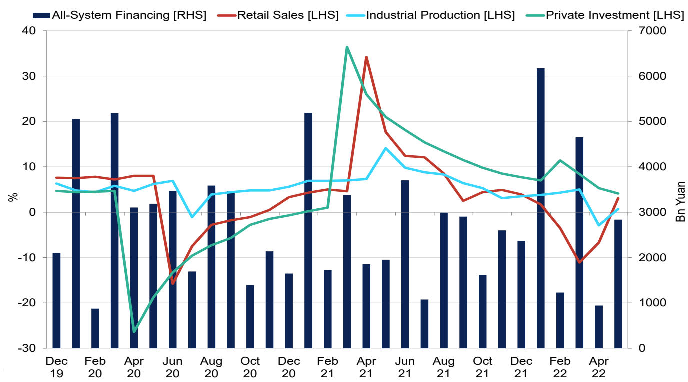


Source: Asian Metal Inc, SMM Information and Technology, Shanghai Metals Market

Premiums have started to rise in line with the improved spot prices in China, and the Yangshan copper cathodes and copper premiums have increased back above $85.5/t. The warehouse's cathode premium against the LME spot is $94/t. The Shanghai copper cathode premium of 99.99% is at a $30/t discount, but the cathode premium stands at 99.95% at $350/t, just off the monthly highs as the Bill of Lading has also increased, outlining the improvement in consumption. Generally, the premiums have been pushing higher in July as we saw demand improve in China due to the re-opening of the economy and uptick in auto production and home appliances as high temperatures promoted demand for electricity and air conditioning. The manufacturing PMI in China was expansionary once again as the economy came out of lockdown, but we do not expect significant gains in the reading in the coming months. LME inventories are low. However, demand is not substantial; while macro data in China has been boosted by local government bond issuances and all systems financing, we expect limited upside. LME spreads have tightened in the last few sessions to a moderate backwardation, poor liquidity, and high volatility. We expect the improving refined outlook in H2 2022 to weigh on the market as consumption looks patchy.

China Macro Indicators

Chinese data is improving, but we do not expect this to be sustained in Q3.



Source:Bloomberg, PBOC

Lead

LME Lead 3MO ($)

Sentiment

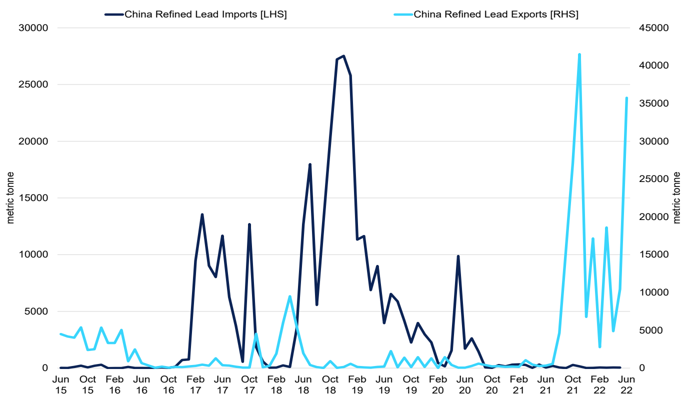
Poor Auto Demand	Replacement Battery Demand	Economic Data	Stable Lead Output

Q2 Review: Lead prices declined in Q2 by 19%, closing at $1,907.5/t. The market traded through our downside target as the macroeconomic outlook deteriorated as inflation surged and economic growth slowed. The LME cash to 3-month spread oscillated around flat with some spikes to $25/t backwardation, as inventories failed to push higher and consolidated around 40,000 tonnes and cancelled warrants are low, indicating weak consumption.

Deliverable stocks for SHFE have also been constant at 89,059 tonnes, and China's bill of lading Shanghai CIF has been unchanged in recent months at $130/t. SHFE prices also weakened in Q2 by 3% for the 1st generic contract; rallies have failed to take hold, but on the longer time frame, prices continue to consolidate in an RMB14,680/t – RMB15,840/t.

China Imports and Exports of Refined Lead

Exports are historically high due to weak European output, but demand is poor.

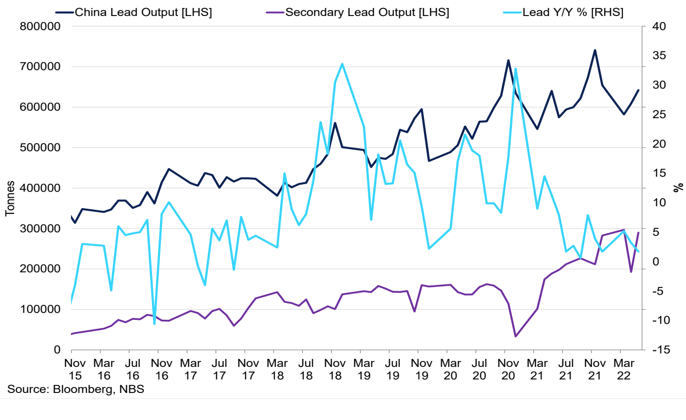


Outlook: Mine production in Australia has been constant in recent months, with the most up-to-date data indicating output at 41,650 tonnes for March, which was flat on the month and marginally lower than January at 42,150. Global mine production, according to WBMS, was

1.721.2m tonnes for January-April 2022; this is down from 1.878.3m tonnes in 2021. This is due to lower output from China which produced 857,300 tonnes of lead in the first four months of 2022. Mine output in Peru was also lower for this period due to blockades and community action, and this is a prevailing trend that will continue and even increase due to environmental regulations and policy. However, despite the decline in mined output, refined output has increased through to the end of April, with the global total at 4,674.9m tonnes, with secondary production for Q1 2022 at 2,196.5m tonnes.

China Primary and Secondary Lead Output vs Secondary Output vs Total Output Y/Y

Maintenance will cause production to improve in July and August, but the surplus in China will pressure SHFE prices.



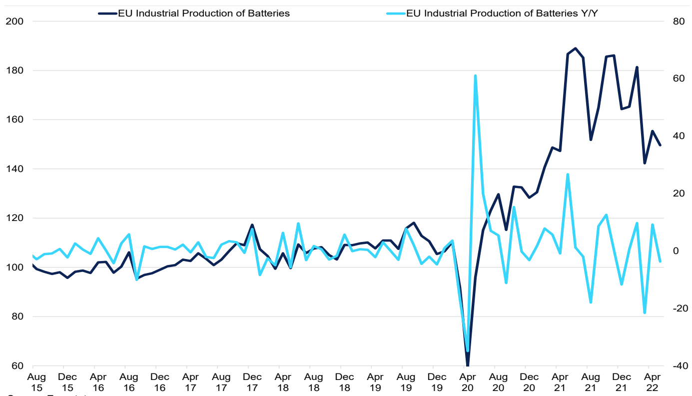
Lead production in China has declined from the high levels of Q4 2021, and in May lead output was 609,000 tonnes, up from 582,000 tonnes. Year-on-year growth is still positive at 3.2% Y/Y, but cumulative output from January to June was down by 3.42%; capacity surveyed equated to 5.71m tonnes. Output in China was 301,000 tonnes for secondary lead in June, down 3.6% M/M and 4.8% Y/Y and primary lead was 254,100 tonnes according to SMM. In June, production in Chifeng Shanjin, Anhui Tongguan, and Yunnan Mengzi was under maintenance as other brands in Henan resumed output. July output will improve as new capacity comes online and resumptions after maintenance, production at Zhongjin Lingnan's new plant has been put into operation. Small-sized smelters' output will remain low due to costs, and a large proportion of production increases will come from medium and large-sized smelters. Primary lead output is forecast to be 285,000 tonnes in July, with secondary production at 337,500 tonnes as operating rates start to recover.

Operating rates for secondary lead producers have diverged as mentioned; medium to large-scale smelters have increased to 63% and 61%, respectively. We expect output in medium to large smelters to keep output elevated as downstream inquiries have started to improve due to low SHFE prices and recovering production from maintenance.

TCs have been steady at $85/t, suggesting the availability of material is adequate; domestic lead concentrate TCs declined marginally from July 1st to RMB1,100/t (13% VAT included), Yunnan TCs are the lowest at RMB950/t with other key regions having a higher TCs. Downstream demand for lead has increased in recent days, but the longer-term trend is unlikely to cause a change in direction due to a slowing world economy. China's exports started to improve in May to 10,133 as the supply-chain backlog eased due to the ending of the lockdown in key provinces. The upside to this sector is limited due to China's COVID policy and the isolated lockdowns. Demand from Europe and the U.S. is waning, which will likely cap exports to these regions. Storage batteries are the dominant source of end-user lead consumption, most of which comes through autos. U.S shipments of batteries had increased in 2022, and sales reached $926m in May, but this is a far cry from March's high of $1,061m. However, battery demand remains vastly seasonal, and the warm summer could put pressure on batteries causing failures as a result. European battery production is growing on a year-on-year basis, but the underlying figures are considerably below last year's peak when the index reached 190 and now stands at 149.60.

European Industrial Production of Batteries

Output has started to increase again but we do not expect output to improve significantly as sales figures remain weak.

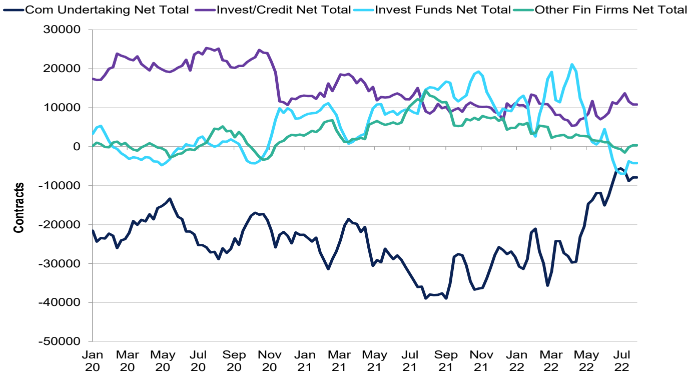


Source: Eurostat

The auto market is on the back foot, and China has seen a mild recovery in the last few months as the country came out of lockdowns. Isolated lockdowns remain a key policy for China, which will cap the sales growth and the stimulus measures' impact. Chinese sales reached 1.7m units in May, considerably higher than April's figure of 995,523 units. U.S. data shows 926,000 units, the market for autos continues to see strong growth from EVs, but total figures are low despite the increasing percentage of total market share. The cost- of-living crisis in Europe, high inflation, and China's COVID policy, in addition to slow supply chains and semiconductor backlogs, have presented significant headwinds to the auto market, which will persist. Lead battery prices have risen in recent weeks despite the low exchange prices and weaker demand outlook. China's lead deep cycle scrap battery Ex- VAT DEL reached CNY8,785/t, while the scrap start battery was at CNY8,035/t; the price of e-bikes declined in the week to July 14th to CNY9,000/t but remained high on the year, up 5% YTD.

Net Positions for LME Commitment of Traders

We have seen a sharp decline in Funds' positing and have switched to a net short as their patience runs out.

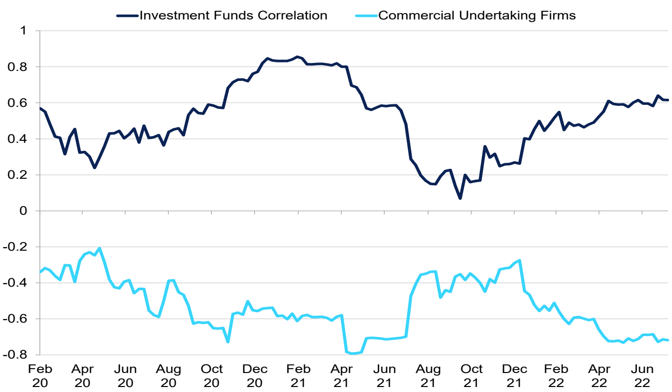


Source: LME, Sucden Financial

The commercial undertaking position on the LME has increased significantly, outlining that the commercials believe they have seen the top prices. Physical premiums in Europe will continue to be tight due to reduced output, but the surplus in China will offset that, and this is seen in higher-than-average exports. The funds now hold a net short and accentuate the change in sentiment due to slower growth expectations and high inflation. The correlation between the change in funds positioning and the change in LME price shows a strong positive relationship at 0.6, and the commercial position shows a strong negative relationship at -0.68. Despite low inventories in LME warehouses, the shift in sentiment suggests demand is significantly weak, or a large proportion of business is being done OTC. The number of long positions is at a 2-year low. We do not expect lead prices to rally significantly in the near term due to weak economic data and, in Europe, and more specifically German industrial data.

Correlation between Weekly Change in 3-month LME Price and Weekly Change in Fund position

The correlations for both categories are holding up and suggest strong relationships.



Source: LME, Sucden Financial

Nickel

LME Nickel 3MO ($)

Source: Bloomberg, 03.08.2022

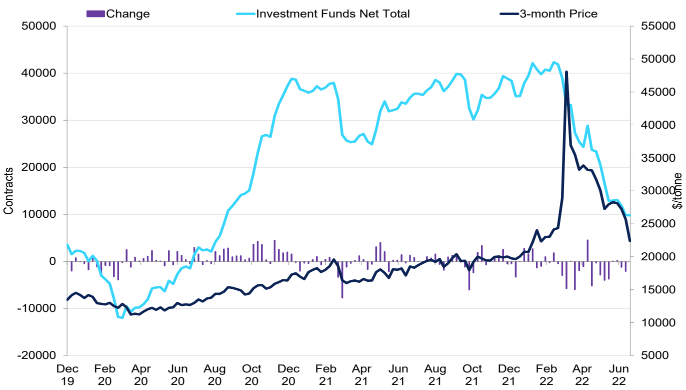
Sentiment

Indonesia NPI/FN Ban	EVs/Battery Demand	Reduced 300 Series	Indonesia NPI/Matte

Q2 Review: Nickel prices have performed poorly, with the 3-month contract falling to $24,243.28/t at the end of June. Nickel has continued to fall as sentiment declined and the fundamental outlook remains weak. The cash 3 months spread has also declined and trades at a contango of $48.50/t, despite the low inventory levels. However, we watch the index roll closely as this could trigger a sharp tightening in cash to a 3-month spread. Inventories are low, with stocks at 62,364 tonnes. SHFE stocks have declined 1,826 tonnes which is very low, but the 1st generic contract has declined in recent sessions and trades at CNY157,030/t, considerably below the 200 DMA. Consumption of nickel from EVs is improving, but this trend will continue with sales currently resilient to the macro-downturn and weakness in the ICE auto market.

LME Nickel Open Interest vs Volumes vs 3-month Price

Open interest is low with volumes also considerably below long-term average levels. Poor liquidity has led to higher volatility.



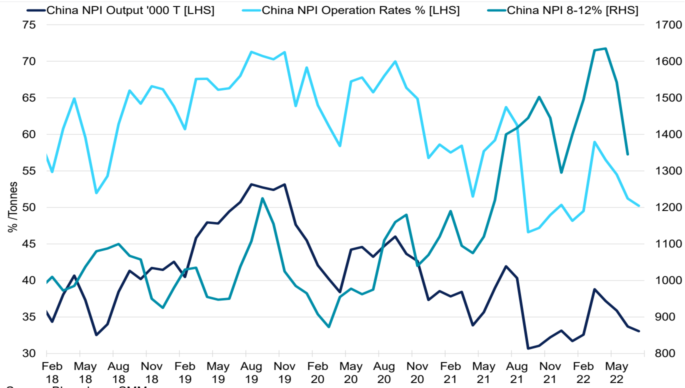
Source: LME, Sucden Financial

Outlook: Liquidity is poor, with average volumes at 6,685 since the market was closed, compared to 20,486 lots which is the average for the last 5 years. Lower volumes in the 3-month contract are outlined in the spreads, with the long-term average volume for the cash to 3- month spread at 82 lots. Since the start of March, the average volume on the spread has been 7 lots, with the average volume before March 2022 to January 2015 at 86 lots. Pre- market volumes for the 7 years to January 2015 averaged 26,509 lots; since the beginning of March, pre-market volumes have been significantly lower at 14,717 lots. Pre-market volumes are indicative of Chinese trading, and the average is lower as the overnight nickel session is not yet open. This has severely reduced liquidity, volumes, and OI and arb trading, as Asian and Chinese traders, only have a small window to trade. The LME has indicated that they will reopen the night-time session, which would improve liquidity and make the arb more attractive.

The market's exposure has declined sharply, evidenced by the low open interest and volumes. Fund positioning has reduced significantly and stood at 3,592 lots as of July 15th. The fundamental outlook for nickel favours the downside with demand poor from stainless steel and robust supply from Indonesia; this could trigger funds to hold a net short on nickel, pushing prices lower towards $18,000/t. However, participants may be wary of holding prominent short positions. However, the commercial undertaking net position has halved due to the re-duction in the large short positions in the last few months. As prices have declined, commercials are unlikely to have increased their shorts as a hedge. Indeed, we could have seen more participants hedge in the OTC market. The z- score of the investment funds is -0.729, a far cry from the maximum of 1.66, and the median of -0.0875; this highlights how far the market has fallen in recent months. From the commercial undertakings' perspective, the z-score is currently at 0.136, and the median is -0.0651. This suggests the positioning is in the middle of the historical data but represents the reduction in the short position.

China NPI Output vs China NPI Operating Rates vs China NPI 8-12% Prices

NPI in China has declined in recent months as prices are low, due to weak end-user demand.

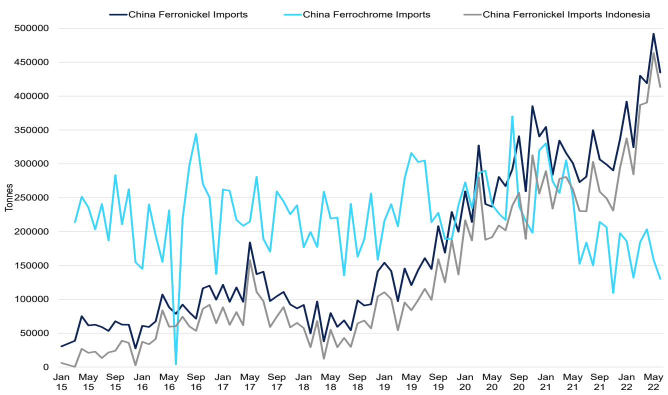


Source: Bloomberg, SMM

Mine production in 2022 will push towards 2.57m tonnes; Indonesia's increases will see mine output reach 643,200 tonnes which will increase again to 722,100 tonnes, with refined pro-duction rising significantly due to investment in capacity. Global mine supply is forecast to rise to 2.834m tonnes, according to MineSpans, with refined output increasing substantially more due to investment in NPI capacity. This capacity will put pressure on prices, and the growth in capability could increase by 30% Y/Y with the development of nickel compounds for EV batteries as HPAL and NPI-to-matte take hold. Finished production will continue to grow at a steady pace, but once again, this is centred around class 2 production as class 1 nickel will be in deficit. Philippine environmental concerns have caused some mining permits to be suspended and slowed. However, Indonesia is aiming to increase FDI due to the demand for rare materials such as nickel and renewable energy. This could facilitate more in-vestment in mining in the Philippines, which is in line with the changes in mining regulations set to increase the number of mines in the country.

China Ferronickel Imports vs Ferronickel Imports from Indonesia vs China Ferrochrome Imports

Ferronickel imports have continued to increase as production of 200 and 400 series rise.

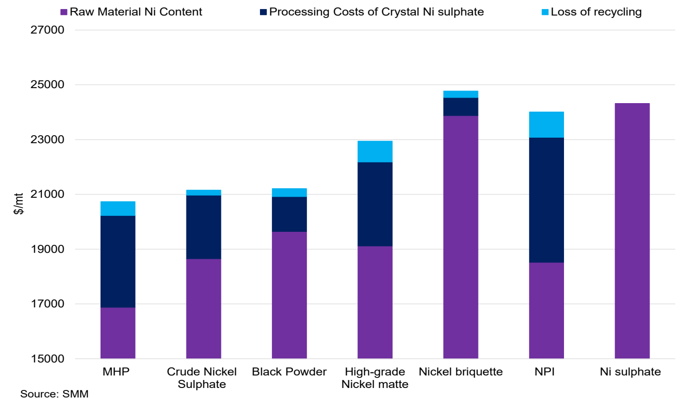


Source: Customs General Administration

China's ferrochrome output declined marginally in June to 580,500 tonnes, which was due to higher-cost producers in Inner Mongolia's reduced output. Electricity prices continue to plague metal production, and this will remain the case. China's imports of ferronickel from Indonesia have continued to trend higher, reaching 413,368 tonnes, down from 463,719 in May. Imports were considerably higher than last year when the data showed 230,360 tonnes. Total ferronickel imports into China stood at 434,861 tonnes in June, down from 492,000 tonnes. We expect imports to remain elevated due to the shift away from 300 series stainless towards 200 and 400 series. With nickel ore inventories at Chinese ports low, standing at 2.54m WMT, ferrochrome imports have increased, despite the modest increase in stocks in the last few weeks. The price of nickel ore has been low, with transactions of N1i.5% at $74/wmt and Ni1.3% at $50/wmt. Freight rates of nickel ore from the Philippines have traded at an average of RMB118.06/t to Lianyungang Port and RMB124.81/t to Tianjin Port; this is down from RMB163/t at the beginning of July; the decline in freight outlines weak demand for the material.

Nickel Sulphate Production Costs

Nickel briquettes have the highest cost, but Nickel sulphate has a higher Ni content compared to other materials..

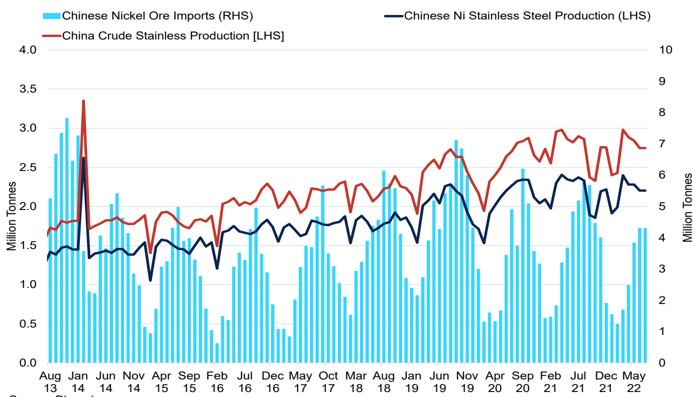


Source: SMM

Repeated investment in Indonesia from China will cause capacity to increase, and the use of HPAL and NPI into matte will cause the deficit of class 1 nickel for EV batteries to shift into a surplus. Utilisation rates are high in Indonesia at 90% compared to 40% in China. NPI output in China has declined due to low prices, and nickel ore prices are low despite reduced availability due to the expectation of poor stainless-steel demand. The supply and demand balance for nickel is a mild surplus for 2022, which will be due to the output in the year's second half and softer stainless-steel production. SMM indicated that stainless output in China declined 6% M/M at 2.68m tonnes in June and 3.5% Y/Y. The cost of nickel caused 300 series output to decline 9.79% in June to 1.35m tonnes, and this could fall further in the coming months as spot stainless prices have fallen and downstream demand will remain subdued. Nickel shortages are starting to ease, but costs continue to pressure some mills. Power costs are set to rise in H2 2022, with local governments suggesting people should ration electricity; this will likely increase the cost of production for mills capping output even more. However, mills could favour secondary stainless to keep costs down, but scrap is predominately used in 304 stainless.

China Nickel Ore Imports vs China Ni Stainless Steel Production vs China Crude Stainless Out-put.

Seasonal imports from the Philippines will improve availability of material but stainless demand is weaker, and output has moderated accordingly.



Source: Bloomberg

Tin

LME Tin 3MO ($)

Source: Bloomberg, 03.08.2022

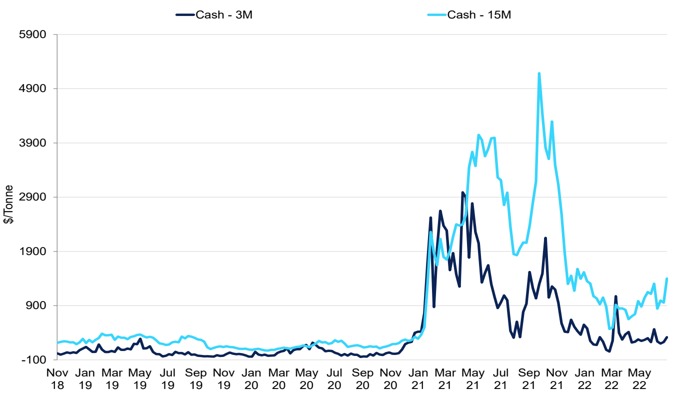
Sentiment

Weakening Spreads	Smelter Output Cuts	Improving Mine Supply	Chinese Inventories

Q2 Review: In line with our Q2 report, tin prices declined 38.4% to close the quarter marginally below our downside target of $27,000/t at $26,451/t. Recession fears and improving supply dynamics caused tin to come under heavy selling pressure despite the still robust demand data for solder and semiconductors. In addition, the Philadelphia Semiconductor Index has declined as investors look at inflationary pressures and pricing in lower growth. However, LME inventories have been rising significantly to 3,585 tonnes; most of this material is in China, and only 22% of LME inventories stand at 22%, with 60% of stocks in Asia. Spreads have weakened in recent months, but the cash to 3-month is still backwardated, settling at $245/t on July 4th. SHFE prices declined 40% in Q2 to CNY193,100 as of July 4th; SHFE calendar spreads are also backwardated; the 1st generic to 4th generic SHFE contract is CNY4,120tonne, with the mean in the last 12 months at CNY12,529tonnes.

SHFE Calendar Spreads

Spreads have weakened significantly due to a stronger supply outlook in the longer run and rising inventories.



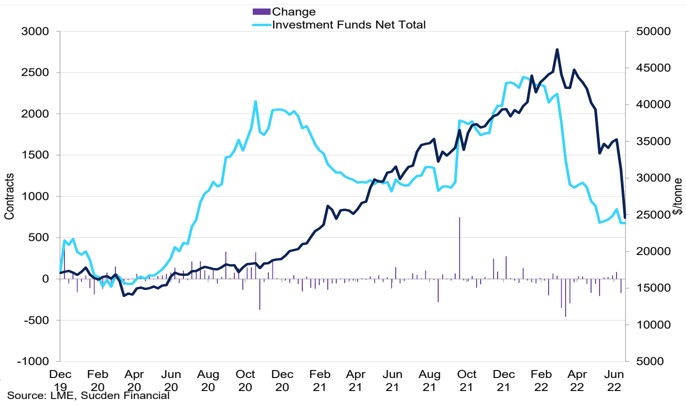
Source: Bloomberg

Outlook: Spreads for both the LME and SHFE have declined in recent months; the 1st generic and 2nd generic SHFE spread stands at CNY710/t, with the mean 12 month mean at CNY4,644/t. In June, the spread between the 1st and 2nd generic contracts switched back to contango for the first time since Q1 2021. The equivalent of cash to 3s was in contango and had a mean of -CNY12,800/t for the last 12 months; recent tightness in the active month and strong supply on the horizon have caused the spread to switch to CNY1,710/t back. The weakening spreads on the LME and SHFE outline waning bullish sentiment and fundamental tightness in the tin market. Cancelled warrants on the LME have been steady, and SHFE deliverable stocks are rising, confirming the fundamental outlook. SHFE data outlines the shift in sentiment, with the top 20 futures firms' net open interest positions at -272 contracts. However, the net position on the 3-month contract can be seen reducing their net short stands at -186, an improvement from -1,351 at the end of last week. On the LME, the average volumes increased marginally in recent weeks due to higher volumes in cash to 3-month. Open interest on the LME is 70% of the 7-year average and currently stands at 12,241 compared to an average of 17,293.

On the LME, investment firms have reduced their exposure to tin with the net position at 677 contracts. The correlation between the net position change and LME price change is not significant; it shows no relationship at all. This also suggests that prices could fall further, as the net position is still long. Global growth is not declining; it is slowing, which is important to remember. Global semiconductor sales are still showing double-digit growth yearly at 21.1% in April. However, monthly data is weaker at 0.7%. The global semiconductor revenue is 2022 $676bn in 2022, which is up 13.6% Y/Y; the market is expected to grow to $700.5bn in 2023, up 3.6% Y/Y. Growth in sales came from the Americas at 40.9%, Europe remained strong at 19.2% and Japan at 18.5%. Strong revenues will facilitate more research and design. However, the chip shortage will continue in certain sectors, especially in the automotive sector, but we expect chip consumption to increase for EVs. According to Gartner, the memory market will drive revenues; DRAM could be oversupplied in 2023 but will grow at 22.8%. 5G will also aid consumption of semiconductors, with unit production expected to grow 45.3% in 2022, reaching 808m units equating to 55% of smartphones

LME Investment Funds Position vs 3-month Price

The decline in longs due to weakening macroeconomic data and growth fears, causing prices to weaken.

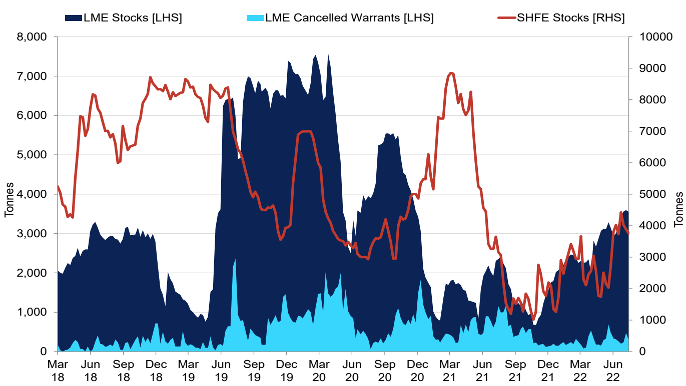


Source: LME, Sucden Financial

WBMS indicate that refined production through to April was lower than last year's period, at 137,300 tonnes compared to 126,400 his year. This decline is largely due to lower production from China, with an output of 64,000 tonnes through the first four months of 2022. This is attributed to lockdowns impacting material flow into China and reduced operating rates. China accounts for 50% of production in 2022 so far; consumption has also softened to 126,400 tonnes for 2022, down from 137,200 tonnes. We expect demand to be steady, but the summer months are traditionally lower, but Q4 could see a stronger resurgence in consumption as China's stimulus finds its way into the real economy.

Tin LME and SHFE Inventories

Cancelled warrants have edged higher but available stocks have risen higher in recent months, putting pressure on spreads.



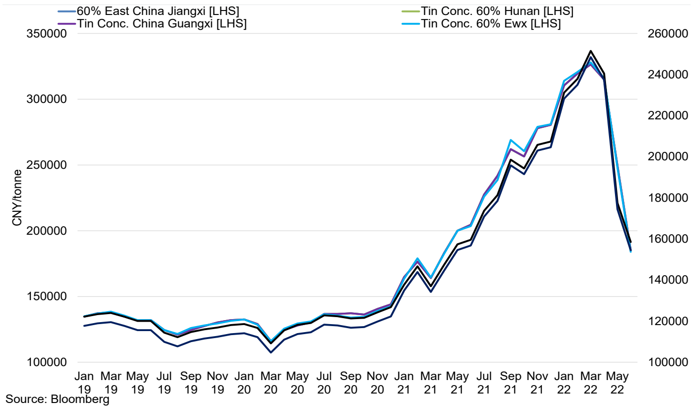
Source: Bloomberg

Tightness remains in Europe as tin production in this region remains low at 5,400 tonnes, with German consumption alone at 5,700 tonnes for the 1st four months of the year; Germany imported 4,500 tonnes in Q1, meaning their external dependency rate is 78%.

Conversely, on a refined basis, China is pretty self-sufficient from a refined perspective, but they import around 54.9% of tin ore and concentrate, and in 2021 they imported 184,000 tonnes, with domestic production at 152,200 tonnes. Imports were strong according to the WBMS data for the first four months of 2022, reaching 104,000 tonnes, up from 64,000 tonnes in the same period last year. Imports from Myanmar have recently declined to 4,059 tonnes, down from a high of 21,582 tonnes in March. According to the ITA, this is due to depleting stock levels in Myanmar, as strong shipments in Q1 2022 were from the government's stockpile.

Chinese Spot Prices

Spot prices in China indicate more availability of tin concentrate and ore.



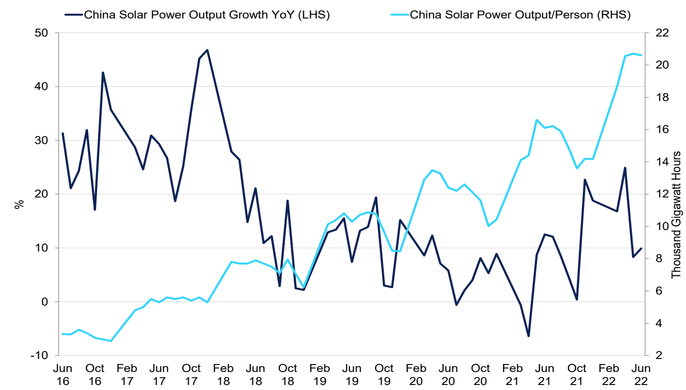
Source: Bloomberg

Spot prices for tin have declined in China as availability improves. Tin concentrate 60% in Jiangxi traded at CNNY178,750/t on July 5th; the YTD high is CNY347,000/t. Concentrate prices in Yunnan are lower, standing at CNY174,750/t. We expect spot concentrate prices to soften in the near term as availability improves. The decline in Chinese prices caused smelters to reduce their output and bring forward maintenance. The date system on SHFE makes it difficult to hedge as well as poorer liquidity, many smelters will run at a loss in the near term, but some of the larger producers, such as Yunnan Tin, will shut. Operating rates have declined, but we expect some of these smelters to come back online in August.

Weakening spreads, higher inventories, and significantly lower spot prices in China all indicate that tin prices will continue to weaken in the coming quarter. While semiconductor demand is strong, consumption in China is slow at this time as the stimulus is yet to make itself into the real economy. Home appliance demand will suffer due to property completions and a weak property sector. Market sentiment is waning due to global growth slowing and fears of a recession in 2023, which weighs on commodity prices. The micro- trends of loss-making smelters in China and most of the refined tin being produced in China could lend themselves to higher prices in the long run as the global economy is desynchronised.

China Solar Power Output Per Person vs Output Growth

Solar Power Output growth per person continues to expand significantly, and this will continue, boosting tin demand.



Source: Bloomberg

Zinc

LME Zinc 3MO ($)

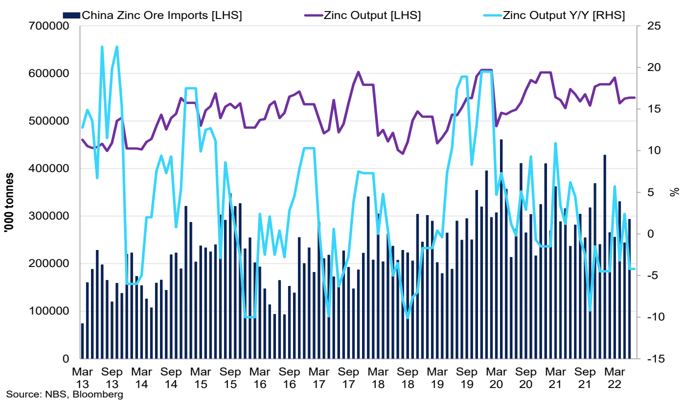
Sentiment

Low Inventories	Supply Risk Europe	Weak End-User Demand	High Premiums
↑	↑	↓	↑

Q2 Review: Zinc prices declined 27% in Q2 as our guidance of sell-rallies rung true. Global recession fears and large-scale, long liquidation in the commodity space caused sentiment to shift swiftly to the downside. The LME cash to 3-month spread tightened right into $218/t back. The spread remains in backwardation but is less aggressive than previously. SHFE prices decreased by 10% as the 1st generic contract posted lower highs and lower lows. The demand outlook weakened as the property sector failed to gather speed despite new stimulus measures and monetary easing. The time lag will mean that stimulus will filter into the economy, but China's COVID policy is working against monetary easing measures.

China Zinc ore Imports vs Zinc Output

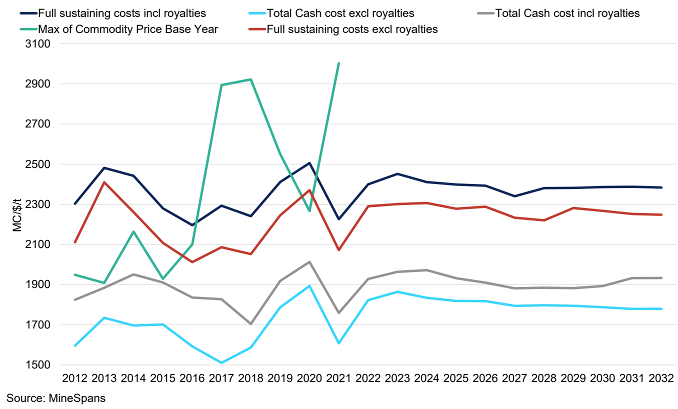
China's output is lower compared to last year, but we expect this to improve.



Outlook: Mine supply for 2022 has improved to 12.5m tonnes in 2022, an increase from 12.2m tonnes in 2021. This brings the supply and demand balance to a deficit of 0.25m tonnes on the refined side of the business, with the implied average industry utilisation at 98%. This was primarily due to an increase in Chinese production, but there remains a substantial supply risk in Europe due to electricity and power costs. The drop in margins was down to these costs. However, the drop in margins is compensated by the higher premiums, treatment costs, and zinc by-products. European electricity prices are at €300/MWh, and while the breakeven stands at $3,600/t based on $200/t TCs, the high electricity costs are partially offset by the weakness in the euro and the high sulphuric acid costs. Refined metal production is flat on last year at 13.9m tonnes, the cuts are likely to be limited, and this will keep sentiment in the market bullish. We expect bullish sentiment to subside in the summer months due to macroeconomic fears dominating commodity markets. The zinc LME price oscillating around $3,000/t brings European smelters into a loss.

Zinc Marginal Costs vs Full Sustaining Costs Including Royalties

Current prices remain above costs, but we expect energy prices to increase in Q4.

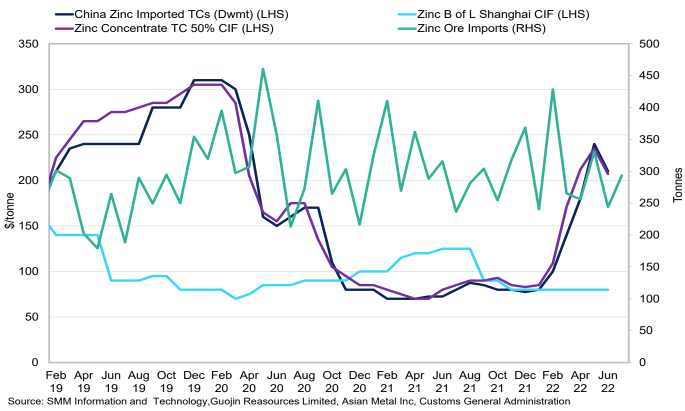


When we look at marginal costs for 2022, full costs, including royalties, stand at $2,399.32/t according to MineSpans; the total cash costs stand at $1,928.05/t. We expect some of these costs to moderate in the near term due to weaker oil prices, but freight is still elevated. European premiums of around $500/t are due to the reduction in European production, which can be attributed to higher selling prices from the smelter, according to SMM. TCS in China have been increasing as availability has improved in China and stands at RMB3,900/t; imported TCs are falling as mine supply has struggled. We expect China's domestic TCs to increase as mine supply improves.

China's zinc ore imports have declined, and the recovery in zinc concentrate production domestically will reduce the reliance on imports; we also saw zinc smelters restock when the import window opened momentarily. Zinc imports through to the beginning of June were 1.52m tonnes, down 7.38% Y/Y; Chinese zinc concentrate production in H1 2022 fell 74,300 tonnes, 4.12% Y/Y. H2 2022 zinc concentrate will increase, and output is expected to reach 114,400 tonnes by 2022. Inventory at port Lianyungang is the lowest since January 2020, and smelters need to stock up for Q4 and need the import window to re-open. The SHFE/LME ratio declined, and the concentrate balance will remain tight; TCs are also in decline. Refined zinc output will have been poor on a year-on-year basis; production was 550,000 tonnes in July 2022, marginally lower than last year. We expect production to increase in the second half of the year, but tightness in the concentrate market amid higher production costs will increase and squeeze capacity. The supply risk remains a threat, triggering upside moves in Q4. Exchange inventories are low, and there has been a sharp decline in LME stocks which stand at 72,525 tonnes; 40,225 tonnes are cancelled warrants leaving 26,375 tonnes. This has caused tight structure and predominantly European premiums with 25 tonnes of zinc in LME warehouses. The bandings on the LME show there is a large, long in the August contract at 30-39%, there is also a sizeable, short position in October, and we could see a significant backwardation at this time if it is squeezed, especially if there is limited production and lack of concentrate availability.

Zinc Imported TCs vs Zinc Ore Imports vs Zinc Concentrate TCs vs Zinc B of L Shanghai

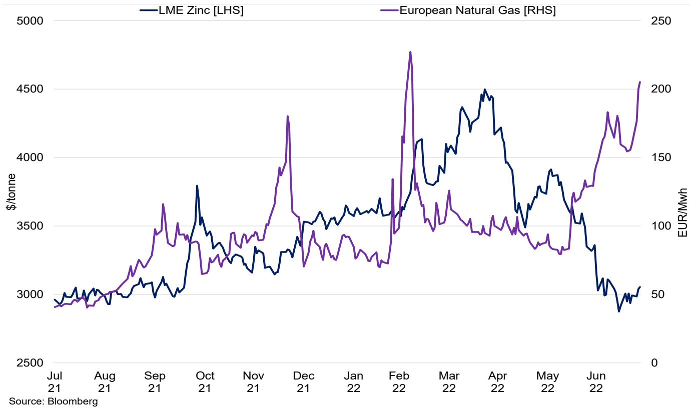
Domestic TCs are rising as mine supply improves, imports are low due to the window being closed but China will need more product in Q4.



According to SMM, operating rates for galvanising plants have been steady in recent weeks and stood at 68.22% for the week to July 25th. Rates are still low due to low terminal consumption, and inventories of finished products are still high. Companies reduced their finished inventories while underlying demand for the structured parts will buoy poor futures consumption for solar panel brackets. Consumption is weak, construction in Europe is falling with the PMI contracting further, as costs remain high due to material prices, and households remain worried about the cost of living. We expect the market to fall further. However, China's construction PMIs have started to improve in response to stimulus measures, but downstream demand is still weak. We see an improvement in availability in some areas, which has caused the discount over shanghai to decline; transactions remain low despite the lower prices indicating flat demand.

Zinc LME vs European Gas Prices

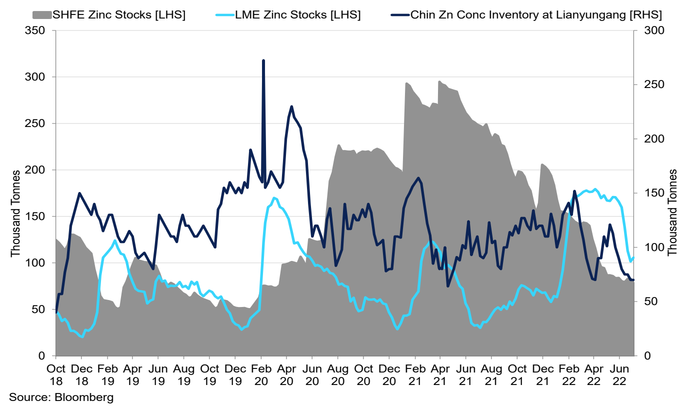
The divergence in costs and prices will squeeze margins and increase the supply risk in Europe.



Liquidity on the LME is poor, with the open interest for the 3-month contracts at 198,306, considerably below the long-term average of 269,418 lots. The forward curve is backwardated and confirmed by the spreads, but we favour owning the structure down the curve due to the large short position in the LME bandings, in conjunction with the tighter energy market in Europe and, to some extent, China, higher power costs increasing supply risk. Options open interests for zinc highlight upside exposure with December OI having a large strip at $3,500/t and $3,600/t; we have also seen some puts traded at $3,025/t with the open interest at $2,500/t for December at 1,950. Due to the tighter fundamental outlook, we favour owning the structure from October to 3-month which trades at $8.50/t back. The 3-month to November and December spreads have been weakening but remain backwardated at $317.5/t and $341.5/t back. The current cash to 3-month spread trades at $73.75/t back, in conjunction with the high premiums in Europe, confirming the tightness, but liquidity and volumes are low. The investment funds are still holding a comparatively large net position at 35,477 contracts as of July 15th, which is considerably below the net length of 60,000 contracts help in April. This highlights the trend of reduced appetite for commodities due to macro fears.

SHFE Zinc vs LME Zinc vs China Zinc Concentrate Inventory

Inventories are declining across the board with only 25 tonnes of refined zinc in LME warehouses.



Iron Ore & Steel

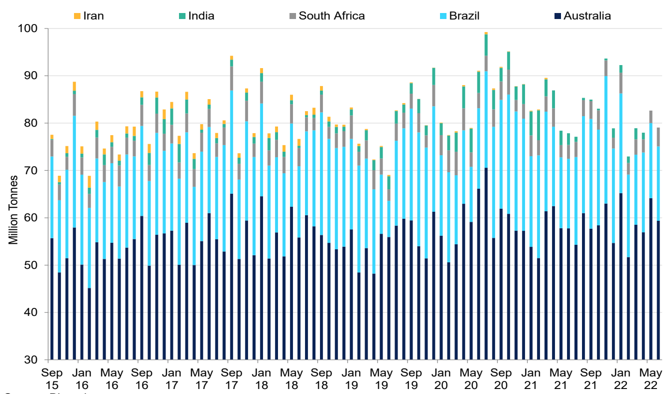
1st Generic SGX 62% Fe

Sentiment

Q2 Review: China's economy failed to break out of the downturn in Q2, as their zero-tolerance policy against COVID continued and lockdowns prevented the economy from expanding. The property sector remains substantially weaker than in previous years, and end-user demand is also weak. The SGX 1st Generic 62% Fe contract declined 10%, closing the quarter at $129.95/t; the August contract has traded through our downside target at $111.40/t. We expect lockdowns to be prevalent in China; even though they may be more localised, this significantly caps gains for iron ore and steel demand. Iron ore inventories at Chinese ports have declined significantly in recent weeks to 125.5m tonnes as of July 1st, down from the March high of 160.95m.

China Iron Ore Imports

Imports Imports of have increased from Australia but remain below previous highs..

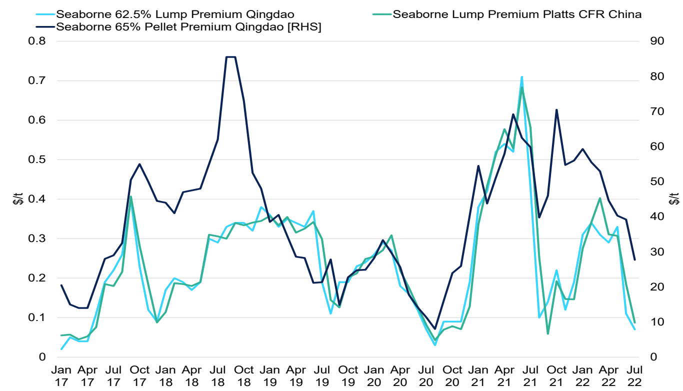


Source: Bloomberg

Outlook: Shipments of iron ore have been steady in recent weeks, but Australia and Brazil arrivals were significantly stronger, reaching the YTD high. In the week to July 3rd, arrivals from Australia reached 17.57m tonnes, up 550,000 W/W, and Brazil arrivals reached 7.94m tonnes, up 1.73m tonnes W/W. However, with demand lacklustre due to off-season demand and weaker steel output, this could cause iron ore inventories to rise once again or arrivals to be limited. Seaborne premiums have continued to decline; the 62% lump premium to Qingdao and Lump premium CFR have fallen significantly more than the 65% pellet premium to Qingdao, which stood at $39.2/t as of June 30th, compared to $40.3/t the month before. This indicates stronger demand for higher quality material, which is something we have witnessed for years.

Iron Ore Seaborne Premiums

Premiums have declined, indicating weak demand for seaborne iron ore, but higher quality pellets have remained elevated before plummeting.

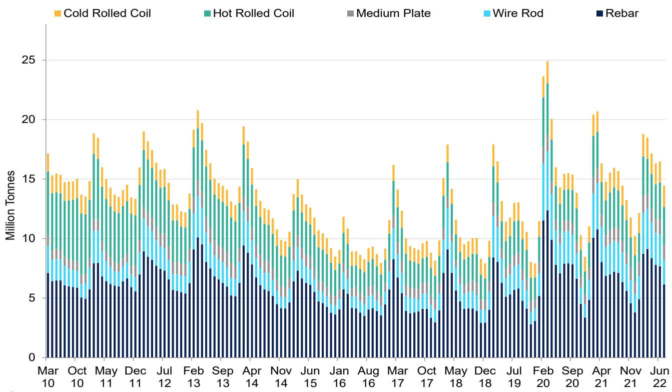


Source: Mysteel, Platts

Total imports into China are improving, with customs data suggesting imports in May were 92.51m tonnes. This trend is improving despite the weaker demand outlook from the underlying economy and property sector. Imports from Australia were 64.1m tonnes and we could see a stronger relationship between these two countries with the new Australian government, although customs data for May indicated flat imports from Brazil. Prices of Australian and Brazilian 62% Fe and 65% Fe have fallen, and this is in line with lower premiums and a weaker China economy; however, Australian exports are improving so this could prompt strength in prices in China-bound iron ore from Australia. According to Mysteel, the use of imported iron ore fines decreased to an average 525,200tonnes/day to the week starting July 6th, which indicates lower output from mills as margins decline. Use of imported iron ore fell 5.5% to 146,400t/d as of July 6th.

Finished Steel Inventories China

Steel inventories are seasonally high but if Chinese stimulus is successful, we could see stocks fall despite robust inventories.

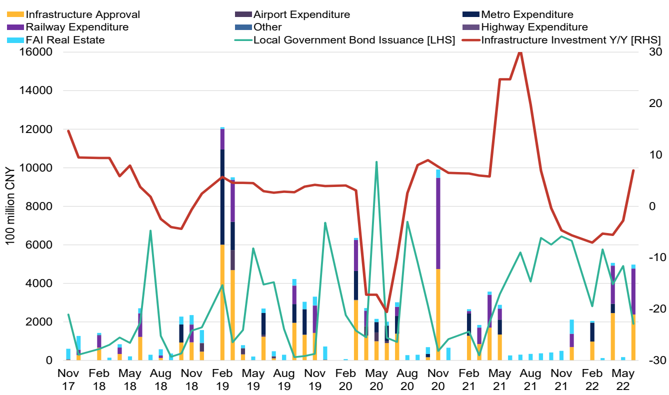


Source: Bloomberg

Iron ore demand is lacklustre as futures for iron ore, coal, and steel are all falling; this will remain the case as markets are dominated by macro-economic events. Average crude steel and steel output has improved in recent months to 289,580 tonnes at the end of June, compared to 269,060 tonnes. The steel output average in China reached 389,270 tonnes in June, up from 347,500 tonnes in March. Despite weak demand and strong output, inventory at steel mills has started to decline to 16.94m tonnes as of June 30th. This suggests mills are holding less inventory, but according to CUsteel China, steel inventory stood at 22.46m at the end of April; however due to low finished steel prices and a weak fundamental outlook has meant losses for steel mills have increased. Maintenance in June 2022 increased by 93% in June to 1.15m tonnes from May in blast furnaces as demand for finished products was lacklustre. According to SMM, blast furnaces maintenance took off 168,000 tonnes of capacity for pig iron, with the total output loss at 3.93m tonnes for June, and this has continued in July as profit has not improved.

China Infrastructure Investment Projects vs Local Government Special Bond Issuances

Investment approvals have increased, with railways taking most of the investment.



Source: Bloomberg Economics

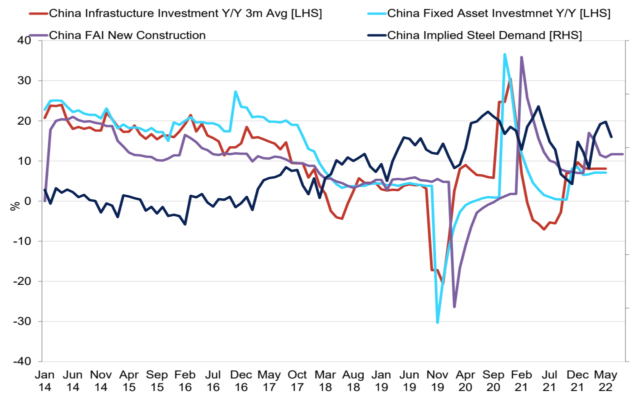
The prices of pig iron, coke and steel scrap have all declined, but steel prices fell more sharply, reducing the profit of steel products by RMB20-60/t in June, according to SMM. Mysteel suggests that nearly 90% of domestic steelmakers were suffering losses, but it thought that prices will improve after July; the CISA indicates that Chinese crude steel output was down 3.5% Y/Y in May. Mills increased the use of low alkaline sinter to reduce costs, but costs edged higher after lumps and pellets prices also started to rise offsetting the sinter. Chinese stimulus measures are likely to filter into the economy and improve demand prospects and profitability, but the market remains on the back foot.

Fixed asset investment for steel-consuming sectors has declined hugely, with construction, real estate, products & machinery, railway transport and highway transport all negative. Still, construction is showing signs of recovery, as is railway transport. Demand for steel in the railway sector will improve as approved investment in March and May was strong suggesting, in addition to infrastructure investment. We expect this to boost consumption of flat and structured products, bar & wire, and specialist products such as rails, wheels, and axles; they will be in the form of castings, rolled products and fabricates. The quality varies due to the need to be corrosion resistance, such as electrical steels, and stainless steel. However, while President Xi Jinping has indicated that he wants enhance infrastructure with the consideration of a new £220bn stimulus package through special bonds, this allocation would be brought forward from next year's spending. This is the latest move to boost the economy; while we expect this will help, the impact will be more limited than previous years due to the weak property sector, and the central government is unwilling to boost their own balance sheet but local governments will be allowed to borrow more. The knock-on impact could prompt Chinese growth to soften in 2023 as local governments' allocation are diminished.

China's steel exports increased in May to 7.760m tonnes, up from 4.98m tonnes in May. This suggests moderate improvement in demand ex-China. The European Commission construction index is falling back towards 0, which stood at 1.9 in June after a high of 8.40. We expect a significant downside to this data in H1 2022, and European steel prices have fallen significantly. The European steel index involving companies involved in the steel sector has been falling and stands at 49.94, down from the YTD on January 13th at 93.21. Apparent European steel demand was 14.53m according to BI; this was an increase in April at 12.8m tonnes. Production increased in May from 12.575m to 11.946m, and imports in April increased by 3.498m tonnes.

China Investment Infrastructure Y/Y

Some indicators are starting to bottom out on a Y/Y growth perspective, but construction is still vastly negative.



Source: NBS, CEIC,Bloomberg

Gold

Spot Gold $/Oz

Source: Bloomberg, 03.08.2022

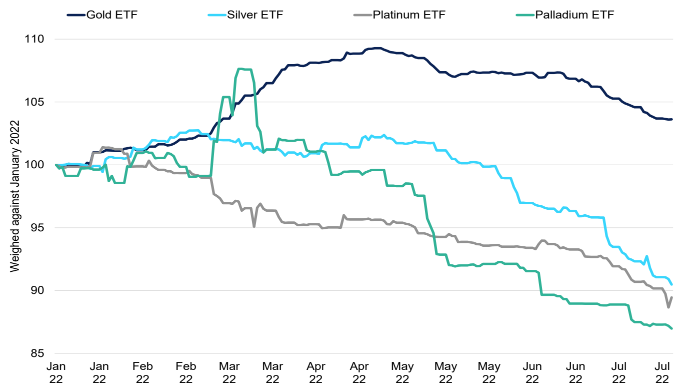
Sentiment

Tighter Monetary Policy	Stronger Dollar	High Inflation	Rebound in Jewellery
↓	↓	↓	○

Q2 Review: Gold finished Q2 7.00% lower, closing at $1,802/oz. The price initially rallied to $2,070/oz levels on the back of the crisis in Ukraine. However, gold quickly gave back some of its gains as the focus shifted to a high inflationary environment. By mid-May, the price stabilised at around $1,980/oz with a tug of war between high inflation and monetary policy. The latter became increasingly more prominent as the Fed hiked by 50bps in May, prompting a more aggressive approach for the summer months. Indeed, given the 40-year high inflation in June, policymakers decided to increase the rates by 75bps. As a result, gold price declined to $1,800/oz and has reduced further. Despite the strong drop during the quarter, so far in 2022, the metal held up better than other assets, including base metals, equities and bonds, as the yellow metal helped mitigate losses during this volatile period. So far this year, gold prices have declined by 5% and remain around historically high levels. Investment appetite began to wane as ETF performance began to deteriorate, and investors chose to pull their funds away from the commodity for the first time since February. Total ETF holdings now stand at 103.7Moz, vs 107Moz in late April, as both investment interest and prices declined during the period. However, relative to other precious metals, the ETF is much more moderate given its safe haven properties compared to other more industrial demand-based metals.

Gold vs Other Precious Metals ETF Performance

Gold ETF outperformed other precious metals as it helped cover Q2 2022 losses.

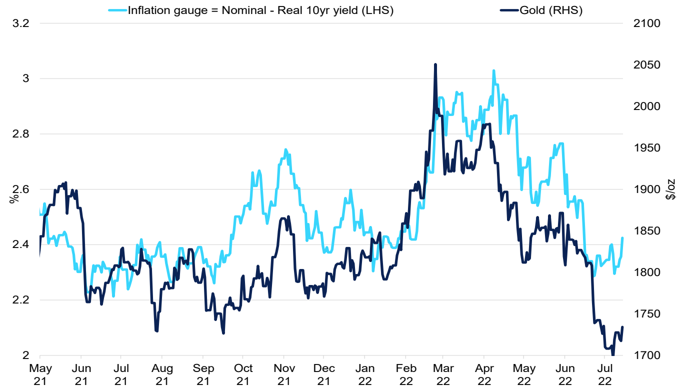


Source: Bloomberg

Outlook: In H2 2022, gold will face a challenging environment as it navigates through rising interest rates, persistently high inflation and a growing recessionary environment, more broadly, stagflation. In the near term, gold is likely to remain in line with the breakeven inflation rate, which it has tracked in recent months, driven by the speed of tighter monetary policy and perseverance of inflationary pressures. With the June inflation figure at 42-year highs, the Fed increased interest rates by 75bps. Indeed, the metal continues to closely follow the breakeven inflation rate, i.e., investor inflation expectations in 10 years' time. The correlation between the two points to the strongest relationship since March, suggesting that markets have priced in their macroeconomic outlook through gold. If this relationship strength persists, we could see softer prices,, we could see softer prices, especially when the Fed hikes again in July, further driving the growth prospects lower. With persistently high inflation in June and, for the moment, a robust labour sector in the US, the Fed is set to hike rates aggressively again in July before they step back to assess the impact on the economy. The markets will also begin to pay attention to employment indicators such as job openings and non-farm payrolls to gauge the economic impact closer to the end of the year.

US 10yr Inflation Gauge vs Gold Spot

The divergence between widened in recent weeks, as the Fed hiked rates.

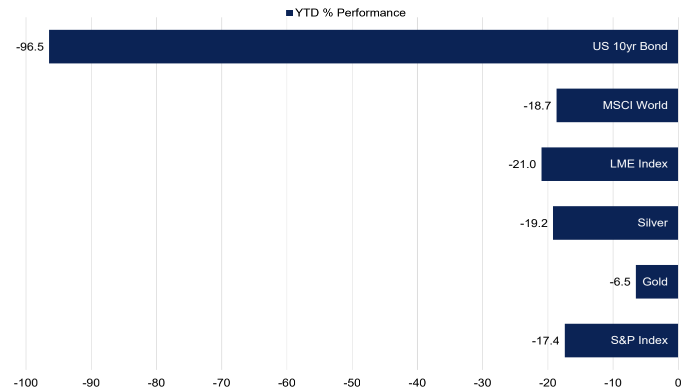


Source: Bloomberg

As an economic slowdown becomes more likely, the outlook will darken for precious metals with more industrial uses. More importantly, breakeven inflation represents the market already pricing in movements before they take place, not the actual inflation. And so, while inflation in June was at 9.1% y/y, gold began to decline in line with the gauge as Fed hiking expectations increased. However, as we edge closer to the year-end, inflation expectations and the scale of the Fed hikes are diminishing. US long-term inflation expectations weakened recently, with the University of Michigan's 5-year price forecast at 2.8%, as a recent drop in gas prices helped the sentiment. This suggests that the tightening expectations in the longer term might be overdone. Once markets start to price in an inflation peak, the Fed hikes should slow down the timing and scale of the hikes and given a softer economic outlook; gold might see some upside closer to the year-end.

Major Asset Performance Year-to-Date against Gold

Whilst gold performance deteriorated recently, the metal still outperformed in comparison to other major assets.



Source: Bloomberg

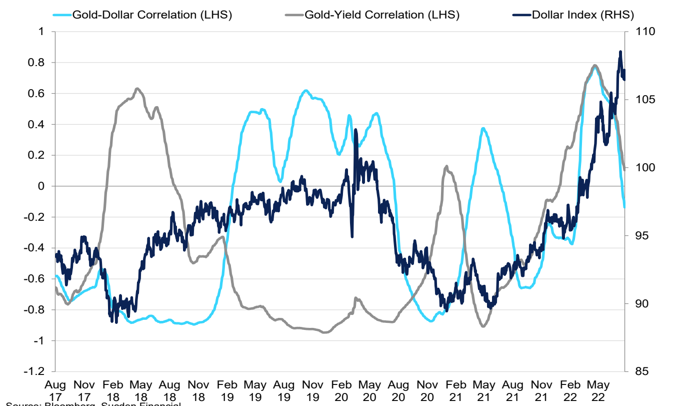
Recent dollar strength has also put a cap on any upside momentum for gold. In the first 4-5 months of 2022, we have seen the relationship between the two grow more and more positive, whereas it is traditionally more negatively correlated. In the last two months, however, the relationship between the two indices has started to weaken as the dollar continued to grow while gold weakened. The correlation between the two currently stands at 30%, vs 70% that we saw in late May. While we expect the dollar to come back below the recent highs of 109, the longer-term trend is robust for the currency as the US economy, while decelerating, remains the strongest globally. As the Fed began to hike interest rates and intensified the more aggressive policy approach, the markets started to price in lower gold prices.

Rising inflationary pressure and anticipated tightening of financial conditions are prompting more central banks to consider increasing gold reserves than in the previous year. A survey of central banks' attitudes to gold conducted by WGC revealed that 24% intend to increase their gold holdings in the next year, up from 21% in 2021. In 2021, central banks collectively increased their gold holdings by more than 400t, but purchases may not reach that level again as this was mostly due to large one-off purchases, and year- to-date purchases total just 63t. Emerging markets tend to use gold more during times of crisis, especially given they are prone to greater currency volatility. In that case, gold can act as a diversifier at times when geopolitics grows unstable. Against this backdrop, we expect continued purchases from central banks, particularly from emerging markets when gold is domestically produced.

In Q1, global gold jewellery demand fell by 7% y/y to 15.2Moz, according to WGC. On average, India and China, which represent 60% of the total jewellery demand, use 42Moz per annum for jewellery. Both countries saw declines in Q1, with China falling by 9% to 5.9Moz, while Indian demand slumped further by 26% to just 3Moz. On average, Q1 marks a strong quarter for Chinese jewellery purchases due to the Chinese New Year celebrations; however, with lockdown restrictions in full swing in March in key purchasing regions such as Shenzhen and Shanghai, the demand dried up. While restrictions were lifted in China in May, demand is slow to recover, and with the global appetite for goods diminishing, we expect another couple of quarters of lacklustre purchases. In India, purchases of gold are strongly price-sensitive, so with lower prices in May and June, we expect consumers to be more likely to purchase. In particular, India's gold imports in May were up 822% year-on-year to 102t. May is typically the strongest month for gold imports, given the Akshaya Tritiya festival, but this year's total is 26% higher than average, demonstrating healthy demand. More so, in line with China, India is coming out of another wave of covid cases; we might see higher purchases in Q2, especially if consumers were holding off their purchases due to high prices of the metal.

Dollar Index vs Dollar- and 10yr Yield-Gold Correlations

As the dollar continued to gain footing, the correlation with gold deteriorated, dropping back to zero.

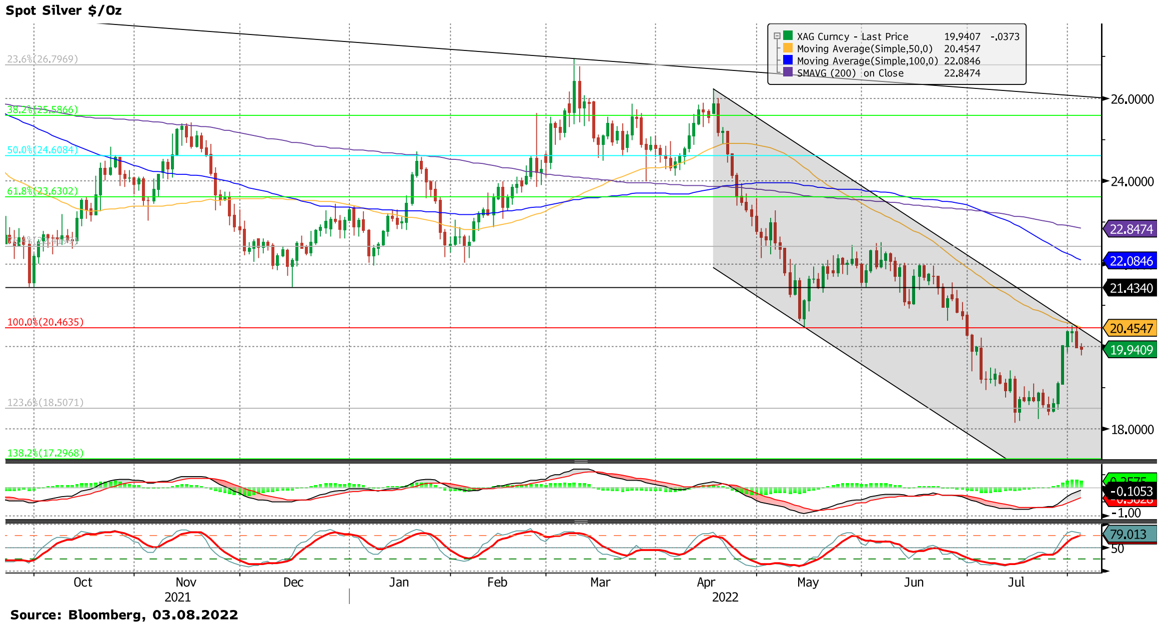


Source: Bloomberg, Sucden Financial

Overall, gold will balance several competing risks compounded by a fair degree of uncertainty about their magnitude. A strong dollar and another round of a strong rate hike from the Fed are likely to keep the gold prices subdued. In the current economic climate of elevated bond yields and sliding equities, the dollar has proved to be the safe-haven investment of choice, but as conviction about the economic outlook grows, this could bring investors who are currently sitting on the side lines back into the precious metal space. Still, we expect the metal to hold up better than its precious counterparts as it is not impacted by the industrial outlook, which continues to deteriorate, despite China's re- emergence from lockdown restrictions.

Silver

Spot Silver $/Oz



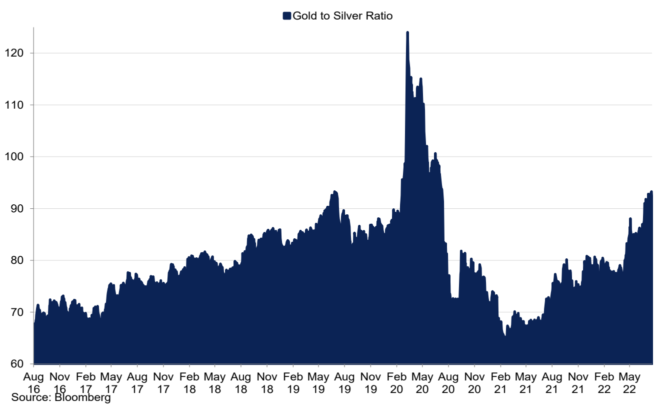
Sentiment

Tighter Monetary Policy	Weakening Industrial Demand	Stonger Solar Outlook	Rebound in Jewellery

Q2 Review: The second quarter of the year saw the worst decline in metals since the financial crisis of 2008. In line with palladium, silver underperformed strongly, falling by more than 18% during the quarter to July 2020 lows of $20.00/oz. Given that 50% of the silver's demand is attributed to industrial uses, slow Chinese recovery from the partial reopening of lockdown measures, coupled with growing recessionary fears, pushed silver prices below this level to $19.09/oz, as of July 13th. Indeed, the gold to silver ratio picked up steam and reached 90 recently, as silver's industrial properties caused an 18% quarterly decline, vs 7% for gold. At the same time, investor sentiment for silver has been weakening with the price, as demonstrated by declining ETF holdings. Since the start of April, more than 45.4Moz has been removed from ETF holdings, more than half of which took place in June following a 7% drop in the silver price. The level is now at July 2020 lows.

Gold to Silver Ratio

The ratio between two metals continued to widen in recent months, with the level breaching 90 recently.



Outlook: In line with our previous report, we anticipated that with the Fed hiking rates and slower consumer demand from China, the metal's performance would deteriorate further.However, as recessionary fears intensify, we struggle to see investors seeking refuge in the traditional safe havens, which include gold and silver. This could be explained by the stronger dollar and higher yields finally having a traditional impact on precious metals. A pronounced drop in the euro is also aiding the dollar's gain, driven by the bets that the ECB will be slower to tighten its monetary policy than the Fed and still that it would experience sharper economic contraction, given its looming energy crisis. We expect that as economic indicators deteriorate and inflation remains persistently high, the market will price a round of strong interest rate increases by the Fed and the ECB this summer, capping silver performance on the upside.

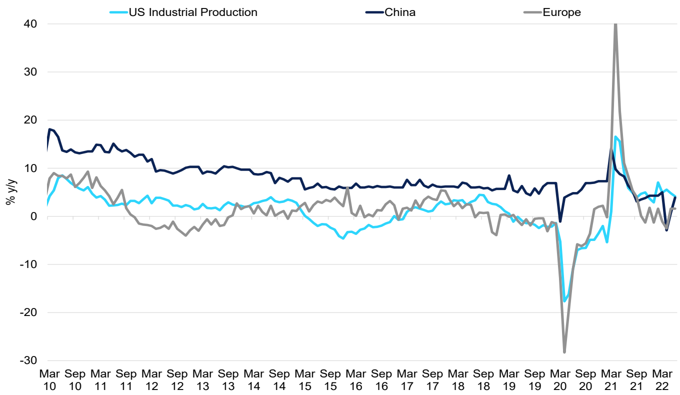
From the investment side, in line with gold, silver is not responding as strongly to inflation as expected, as evident by the market response following the June inflation rate announced in July. Moreover, the inflation reading is being read as a precursor to the Fed interest rate decision this month. Therefore, this should keep the precious metal's performance on the downside. Overall, silver will face several offsetting factors, fluctuating in magnitude as the market gauges the global economic outlook. Once the market starts pricing in peak inflation, we would expect the metal to find a bottom. This, coupled with growing recessionary factors, could help silver find a footing, but in the meantime, the outlook is on the downside..

The global outlook continues to deteriorate, and with high inflation continuing to eat away at consumers' disposable incomes, demand for consumer goods is set to decline. Demand for other industrial uses such as electronics and brazing could suffer from slower economic growth. In addition, recovery from lockdown restrictions in China is not uniform and much slower than expected as the government maintains its zero-covid approach.

Manufacturing PMIs fluctuate in performance, and while in the US, the performance is still expansionary, it continues to decline. China saw a pick-up of activity in May on the back of the easing of lockdown restrictions; however, we believe this performance will not be sustained. While the backlog of previous orders might prop up the performance in the near term, the lack of appetite for new orders globally would push the index back down. With China being the largest industrial user of silver, representing about 25% of global industrial silver use at 120Moz, the outlook for silver's industrial uses remains muted. Brazing and soldering demand are also likely to be lower than projected. Initial demand projections for the sector this year were approximately 49Moz for joining metal tubes and fittings, according to the Silver Institute. The actual figure is likely to be lower, owing to slowing economic growth in the US and China in Q1. With a recession appearing more likely in the next two years, the overall industrial activity could contract, reducing demand in the largest demand sector for silver.

US, Europe, and China Industrial Production

We are continuing to see softening in production capacity across major economies as global demand weakens.



Source: Federal Reserve, National Bureau of Statistics, Eurostat

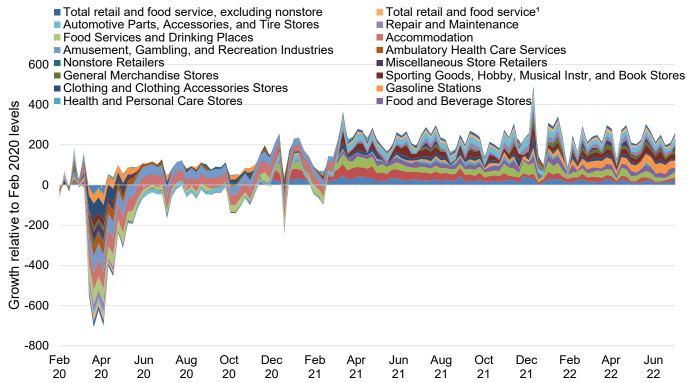
While semiconductor shortages are easing, global demand for electronics is softening. According to S&P Global, the global electronics PMI continues to fall, with the June level reaching the 20-month low of 53.7. While still indicative of improving conditions, the trend highlights a further slowdown in growth as both output and new orders rose at fractional rates. New orders increased at the weakest rate since September 2020, leading to diminishing activity from the firms. Nevertheless, stockpiling of inputs continued as businesses sought to protect against supply issues and price rises. While the availability of some parts may have improved, shortages of other components meant firms lacked all the inputs required to raise production. The result is strong, sustained – and sometimes unintentional – inventory accumulation. Late deliveries and labour shortages add to the backlogs while supply chains are easing. The Research company Gartner forecast that global mobile phone sales and computer shipments would fall 7.1% and 9.5% this year, respectively, citing inflation, the crisis in Ukraine and supply chain problems worsened by China's Covid-19 lockdowns.

Additionally, we expect that whatever buffer funds an average consumer has left from government stimulus will be spent on services, such as travel, rather than goods. Retailers already see a rapid slowdown in apparel, and home goods sales, including electronics.

Indeed, according to the US credit card spending data points to the continued slowdown in electronics and appliance stores and shows an increase of 9% since the beginning of the pandemic, vs 18% two months ago. Food and beverage spending was strong, but those goods tend to have lower profit margins, and so the companies will suffer financially. Samsung already reported lower sales as inflation dampened consumer demand for mobile phones and other electronic gadgets.

US Credit and Debit Card Data

Spending on electronics and appliance store continues to diminish as inflation diminishes real disposable income.



Source: US Bureau of Economic Analysis

On the other hand, the outlook for photovoltaic silver demand is set to continue to grow this year. In 2021, global photovoltaic capacity growth was led by China, which contributed 36% of growth. As a result, China's silver demand grew by 8% y/y to 121Moz during the year. This continued expansion takes place despite the backdrop of global economic uncertainty and volatile pricing. Solar demand for silver is set to continue growing in 2022, which is bullish for silver as the sector makes up around 10% of global demand. Global solar PV capacity installations are expected to increase by 25% y/y up to 190GW. Due to high commodity and energy prices, solar and wind costs are expected to remain elevated this and next year; however, their competitiveness actually improves, given a much stronger rise in gas and oil prices. In the US, solar PV expansion continued to increase due to the investment tax credits (ITC) available until the end of 2023, providing a relatively stable policy environment, with the sector expected to grow by 19% y/y this year. The US, in comparison to its counterparts in Europe, had faced more isolated impacts following the crisis in Ukraine, therefore implementing fewer policy alterations in response to these high volatility events.

With silver demand split in half by investment and industrial properties, we expect the cross with gold to widen, as the latter weighs heavily on material use. The labour market is still robust; however, further softening in job openings could drive the stagflation trend. This, coupled with a softer-than-expected recovery in China and slowing global demand, is likely to send silver lower before it can bottom out.

Palladium

Spot Palladium $/Oz

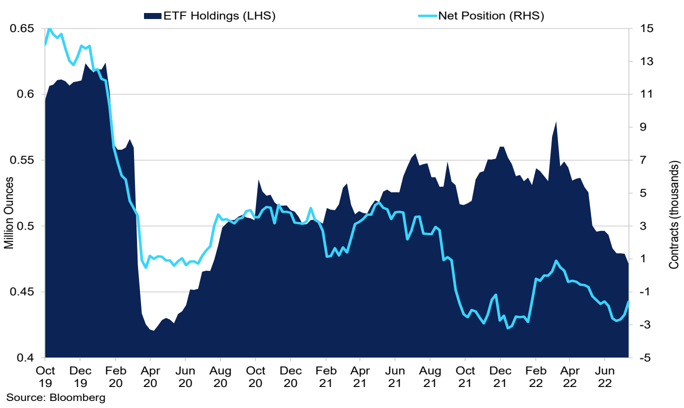
Sentiment

Weakening Auto Market	Weakening Industrial Demand	Supply from Russia	Supply Chain Bottlenecks

Q2 Review: Palladium rallied in Q1, gaining as much as 19%, but in Q2, the trend reversed, and the losses erased most of the first quarter gains. Indeed, signs of a recovery in automotive chip supply, combined with an anticipated post-Covid rebound in auto sales, supported the palladium prices early in the year. Adding to this support was the invasion of Ukraine in late February, which sparked fears that 40% of global palladium supply could be cut off, pushing the prices to record highs of $3,442/oz. However, last quarter, supply-side concerns have since given way to the threat of demand losses owing to deteriorating economic conditions, and prices have fallen to find support at $1,790/oz. ETF holdings have sold off, falling by more than 12%, 65koz, but not enough to reach the pandemic lows.

Palladium ETF Holdings vs Net Position

ETF holdings pulled back sharply following the downbeat momentum for prices.



Outlook: Supply disruptions from Russia rocked the markets in March, and with a multitude of sanctions imposed on the economy, the outlook for shipping out of the country was uncertain. However, according to Nornickel, the production projection for 2022 remains unchanged at 2.5-2.7Moz. Nornickel confirmed that operations had remained uninterrupted, and it is currently using new logistical arrangements and exploiting opportunities with alternative suppliers. In Q1, however, palladium production declined 8.0% y/y, down to 706koz, and was attributed to a high base in the comparative period owing to elevated levels of work-in-progress feedstock processing. The company now estimates a small deficit of 100koz for the palladium market due to downward revisions to global light-vehicle forecasts. Annual production guidance for Stillwater has been maintained at 424- 447koz. Impala Canada's metal-in-concentrate production was 5% lower at about 58koz of palladium.

While the supply side looks robust, the demand side is showing signs of weakness globally. In the US, car sales continue to fall, with the most recent decline of 13.5% y/y in June to 1.1m vehicles. Still very low vehicle inventory, despite the recent increase in June, and fewer selling days than in 2021 than so far in 2022, with June at 26 days. Combined, the automotive palladium demand in these markets exceeds 35% of global demand at around 2.9Moz. Adding to vehicle inventory woes are the significant downgrades to production already seen, owing to component shortages and other issues related to the Russia-Ukraine conflict. In 2022, global light-vehicle production is expected to be around 80.6 million, up 6% year-on-year, but still 10 m units below average production in 2018 and 2019 and below expectation, according to S&P Global Mobility.

Semiconductor shortages are easing; however, they continue to dampen growth. US and European vehicle factories had to cut 104,000 units from schedules due to chip shortages at the beginning of July. As of May, it was estimated that a total of 2.5m light-vehicle sales would be lost by the end of the year. This reduction will constrain sales growth, dampening the Covid rebound in several markets and consequently reduce forecast growth in palladium demand in autocatalysts. At the same time, new European emissions standards, initially expected in 2021, have been further delayed to October. The new legislation is assumed to include more stringent CO2 and NOx standards for new cars. This could provide a slight upside for palladium in Q4; however, the deteriorating demand outlook limits the upside for prices.

Platinum

Spot Platinum $/Oz

Sentiment

Weakening Auto Market	Weakening Industrial Demand	Supply from South Africa	Supply Chain Bottlenecks

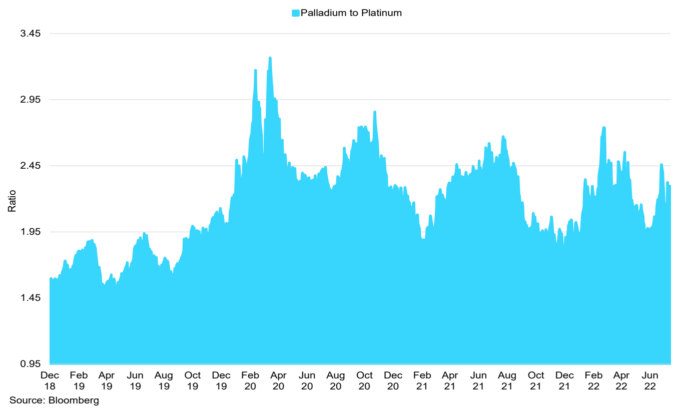
Q2 Review: While declining by 11% during the quarter, platinum, has performed better than its counterpart palladium, closing the quarter at November 2020 lows of $890/oz. Demand for platinum has already suffered as a semiconductor shortage crimped auto production, while car sales in China have slumped due to COVID lockdowns and economic worries weigh on consumer sentiment. The market focus has shifted from potential supply losses to potential demand slowdown and is likely to erode prices even further as industrial uses suffer. However, the interest has not been there for platinum as ETFs have seen outflows of 289koz (-8%) year-to-date, a continuation of the longer-term trend of retail divestment seen since mid-2021.ETF holdings continued to decline steadily, falling below the 3.3m ounce levels but still not at the 2020 lows. The disparity in price and ETF holdings points to further weakness from industrial uses.

Outlook: While we expect the auto production capacity to recover in H2 2022 as chip shortages ease, lower demand for these goods will drag on platinum performance. US sales continued to decline, with the annualised selling rate slipping to 13.2m in June, a decades low. In Europe, new vehicle registrations fell to 1.06m units in June, lows not seen since 1996. In particular, the US is seeing falling sales of heavy-duty vehicles, which use higher loadings of PGM in manufacturing, falling by 7.5% y/y in Q1 to 50,132, while new orders fell by 46%. Heavy-duty autocatalysts account for 30% of all US automotive platinum demand at 125koz and approximately 4% of worldwide automotive platinum demand.

Platinum is less exposed to the auto sector than palladium, where automotive demand represents over 85% of total demand, but jewellery and industrial demand also drop under weaker economic conditions. Total North American demand for platinum, palladium and rhodium is 1.1Moz, 1.8Moz and 200koz, respectively, accounting for 16-19% of global demand for each metal. Reduced overall demand will result in lower prices. However, in the near term, supply chain problems and macroeconomic weakness are holding back car production and sales, which could continue to weigh on palladium and platinum prices. These factors add downside risk to the demand forecasts for the year, given that auto supply chains are still highly stressed because of lockdowns which are only just starting to ease in Shanghai.

Palladium to Platinum Ratio

Platinum's relative performance improved compared to palladium, given its smaller share in auto production.



Supply issues are not as strong as initially thought, so the metal weakened on the back of the previous spike following the crisis in Ukraine. Platinum production in South Africa was constrained in Q1 2022. Sibanye Stillwater's first-quarter production was down 5% at 250koz, owing to a slower than planned return to work after the Christmas holiday period. Impala Platinum also reported reduced output due to a combination of safety stoppages and processing lower-grade material. Impala reported an 11% year-on-year decline in refined output to 332koz of platinum. Platinum production in South Africa is expected to be around 4.6Moz this year. South African supplies will fall in 2022 as plant maintenance, and operational challenges hit output. As a result, platinum oversupply is widening the market surplus, which is now forecast to reach 1.1Moz, according to PGI. Chinese demand for automotive platinum is currently at around 800koz and is forecast to grow as a platinum substitution for palladium in catalysts takes off and automotive sales rebound. However, for Q3, we see further downside pressures as markets price in declining growth factors.

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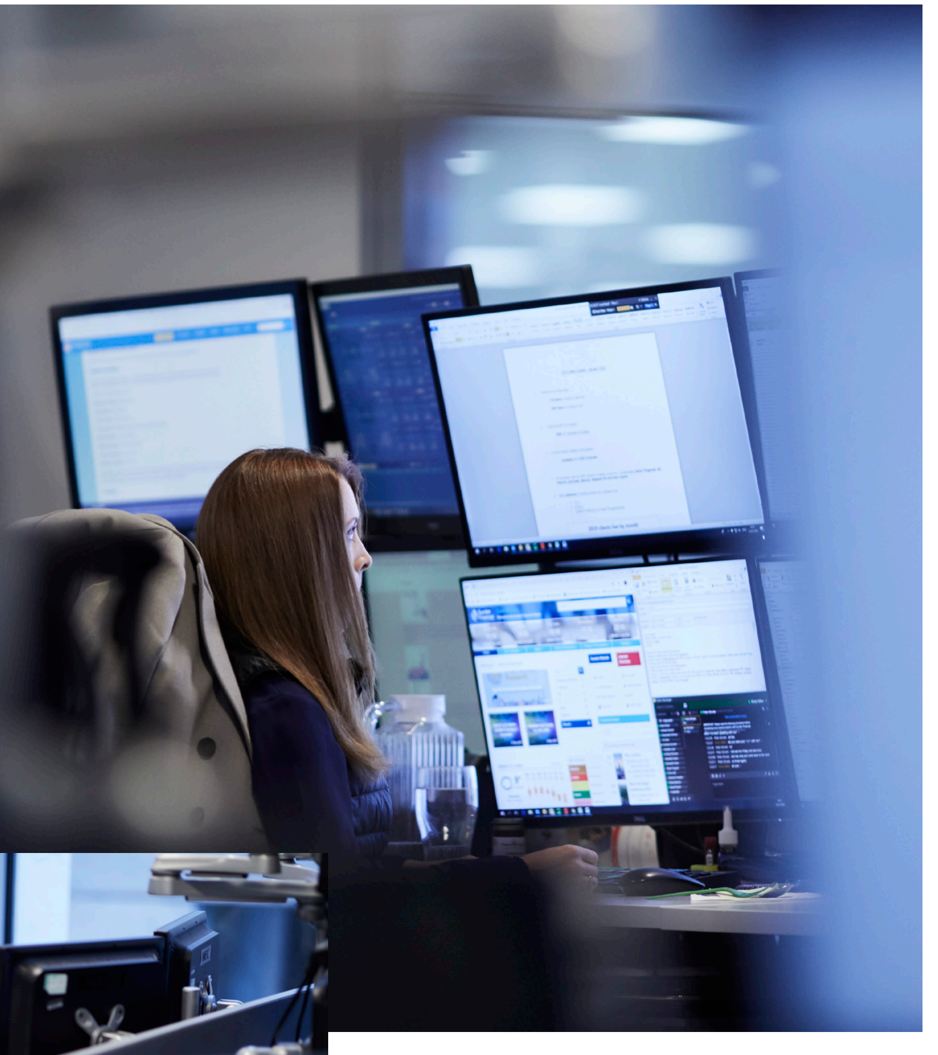

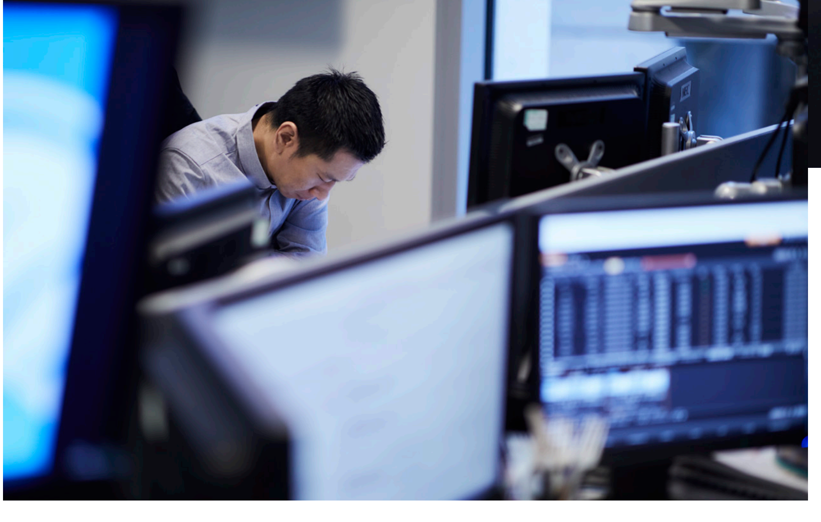

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