Sucden Financial

# Quarterly Metals Report

## Q2 — May 2021

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

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




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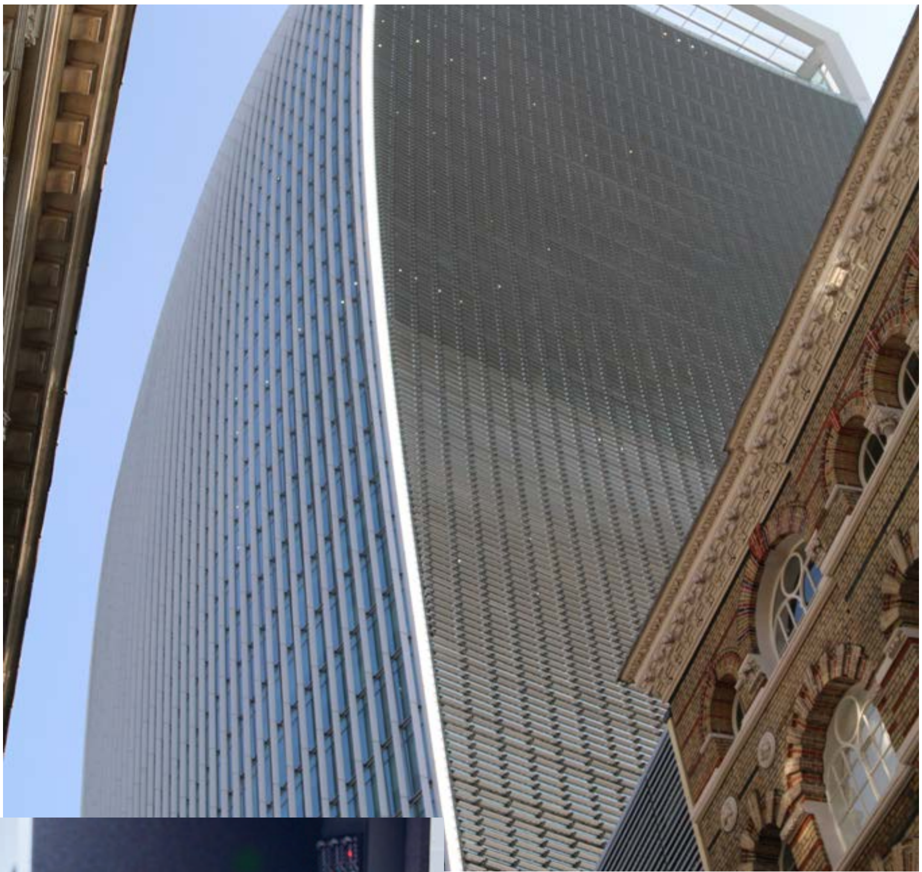
We have a track record of over 45 years in financial markets. Since our foundation in 1973, we have been supported by our parent, Sucden, one of the world's leading trading groups, while remaining fully independent in our day-to-day trading operations..



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# Summary

Metal prices have rallied so far in 2021, in line with improving economic data and risk appetite, largely due to improving vaccination rates across the globe. Europe was slow to roll out vaccines, and as a result, has seen lower economic growth and weaker metals demand. However, the disconnect between supply and demand is set to continue in the near term as supply struggles to keep up. The global chip shortage is having an impact on the auto market, and there is no quick fix to this problem. Physical traders in China are reluctant to pay the high prices, but the fund community remain heavily involved. We expect metal prices to remain supported in Q2, but we are seeing early signs that supply is responding, but this will be more of a factor in H2 2021.

**Aluminium** (Al)
The resumption of global demand and logistic disruptions caused premiums across the globe to rally. The market remains tight in the near term despite the high inventory level, but most of the stock is in Asia. Low carbon aluminium is highly sorted after, but supply is limited in the near term. The auto industry remains capped by the semiconductor shortage; this will continue in Q2. The extrusion anti-dumping regulations from the EU will keep prices in Europe elevated as it recovers. In our opinion, aluminium prices will remain on-trend in Q2 and premiums elevated demand is robust but inventories are not evenly distributed across the globe. Range: $2,350-2,630/t.

**Copper** (Cu)
The disconnect between copper demand, supply and logistical disruptions have caused tightness in the market, aiding renewed risk appetite and optimism surrounding economic data. Fund positioning and the commodity super-cycle trade has fueled the rally. However, we see weaker demand from the physical market as prices are high. Chinese output may moderate in the near term due to maintenance at smelters, and we see signs of the recovery in supply. Manufacturing in China moderated in the first few months of the year, as expected, and in our opinion, activity will improve, although we may see a re-location of production as economies reopen. Range: $9,500/t - $11,750/t.

**Lead** (Pb)
Lead prices fluctuated in the first quarter of the year, testing the support level at $1,896/t for the first time in six months, as a stronger dollar and muted demand weighed on the metal performance. While we expect auto demand to pick up in the next couple of quarters as the economy recovers, manufacturing sector growth in China is slowing, which could pose risks to lead. Near term outlook for lead remains muted, and market confidence has been diminishing demand. Range: : $2,030-$2,350/t.

**Nickel** (Ni)
NPI production in China has been held constant in recent months, and operating rates for NPI producers are low. We expect lower availability of nickel ore to curtail production in 2021, and we are seeing more Chinese imports of ferronickel and stainless. Indonesia capacity is increasing at an alarming rate, which will change the market balance in the long run, especially regarding matte. Nickel premiums have softened slightly in China, but nickel sulphate demand is robust and will continue to be supported by EVs and new energy. Stainless is still the driver of fundamentals, and we see an upside to nickel prices in Q2 due to a continuation of the fundamental outlook from Q1. However, in the long run, the market balance suggests we could see a reversal of the trend in the medium to long term. Range: $17,450-$20,029.75/t.

**Tin** (Sn)
The perfect storm for tin is set to continue, with low availability of raw material and strong demand for semiconductors and solder. This trend is set to continue, with a global shortage of chips and semiconductors. Processing fees for tin concentrate in Hunan are averaging RMB900/t as of April 26th. According to SMM, solder bar 63A and 60A prices are RMB129,000/t and RMB124,000/t as of April 26th, and prices have oscillated around this area in recent months. SHFE inventories are higher, and we expect any shortfall in production in China due to smelter maintenance and environmental inspection. Upside range target of $31,800/t before $35,000/t.

**Zinc** (Zn)
Zinc prices have consolidated recent gains; in the last few weeks, the demand outlook is progressive outside of the auto market. In our opinion, consumption of galvanised steel is expected to remain strong due to the construction sector. Prices of hot-dipped galvanised sheet are near record highs in different regions, increasing costs for users. We have seen premiums improve from Chinese warehouses, outlining a robust demand outlook, and the concentrate tightness could prompt maintenance in the near-term capping output of refined zinc. Profitability for smelters is low, and any further declines in TCs may see some capacity halted. We expect prices to maintain their upward momentum in Q2, with consumption continuing to recover but supply lagging. Range: $2,750-3,250/t.

**Iron Ore & Steel**
Downstream demand is robust, outlined by economic data and prices of steel products. The move by China to try and curb steel output has not been successful so far, the new rules will reduce exports, but with mill profitability high, we may see production remain elevated. Premiums for iron ore continue to climb, and the spread between 62% Fe and 65% Fe has widened significantly and is over $35/t. Shipments from Australia are high, and while tensions between China and Australia are high, we do not expect exports of iron ore to stop. In the physical market, prices are high, but the strength from downstream gives mills confidence and profit margins. Iron ore range: $212-240/t.

**Gold** (Au)
Investment appetite for gold has not enjoyed a great time so far in 2021, as risk-on sentiment along with stronger dollar urged investors away from precious metals, with some shifting their funds into cryptocurrencies. Still, a resurgence in virus cases and restrictions on movement and business activity in India is worrying jewellers as it could threaten the revival in sales. Continued focus along with increasing confidence in the developed economies vaccination programme, rising bond yields as a result of inflation concerns along with growing confidence in the lifting of economic restrictions should remain key influences for gold price moves. $1,650-1,900/oz.

**Silver** (Ag)
Silver speculative demand remained on the back foot in Q1; however, it declined at a much slower pace than gold. Rising real yields and the strengthening dollar have kept silver's price on the back foot, driving the precious metal to test $24.40/oz by the end of March. However, as economies see the way out of the lockdown restrictions, we expect silver demand as industrial metal to gain strength in the next couple of quarters, supporting silver price. Indeed, as the rollout of vaccinations drives hopes of a global economic and industrial recovery and bond yields rise in response, silver is likely to see another leg up in the upcoming months. Range: $23-28/oz.

**Palladium** (Pd)
In Q1, palladium prices picked up higher, with the most recent rally in April helping the metal to reach the record high of $3,018/oz. Stronger demand forecast along with expectations of muted supply supported the precious metal's performance, despite relatively flat ETF holdings. For the quarter ahead, stricter environmental rules in China and Europe are likely to support automakers demand for palladium. The gradual release of lockdown restrictions, as well as a higher propensity to spend, could push auto sales to multi-year highs. Range: $2,650-3,050/oz.

**Platinum** (Pt)
Industrial demand for platinum is likely to accelerate in Q2 2021, as the metal could benefit from the recovery in the auto sector as well as improving investment optimism. During the quarter, the price of platinum outperformed all other precious metals, with prices finding resistance at $1,275/oz by the end of the quarter. Palladium's recent price rally deepens the spread between the two metals; however, we do not envisage the switching of loadings in the short term. From the investment side, however, platinum has been regarded as a good-value, low-risk alternative for investors seeking exposure to precious metals. Range: $1,150-1,340/oz.

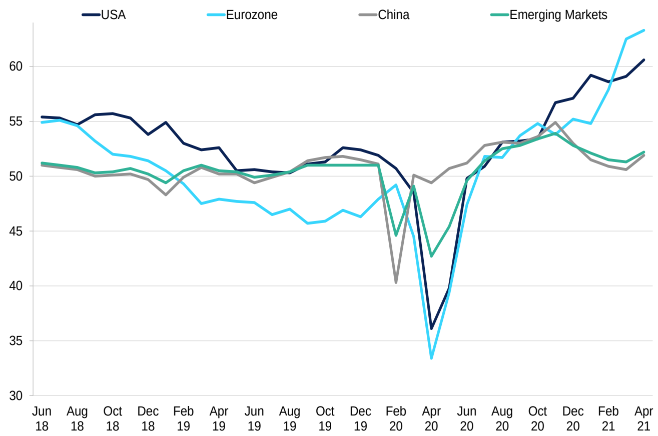
# Market Overview

**Global Outlook:** In 2020, high uncertainty surrounding the global economic outlook took hold due to the pandemic. While most of the globe suffered significant losses during the period, the world fared these disruptions much better than expected thanks to government support measures and partial reopening of economies in Q3 2020. Now, economic recoveries are already seen diverging between countries and sectors, reflecting the scope and scale of pandemic- induced disruptions. We believe the recovery will not just depend on the battle between the virus and the vaccine but also the extent to which economic policies managed to support businesses and households during times of uncertainty. After an estimated contraction of 3.3% in 2020, the global economy is forecast to grow by 6.0% in 2021, with more moderate growth of 4.4% in 2022, according to IMF. However, when compared to developed economies, emerging economies have been hit much harder and are expected to suffer more significant medium-term losses.

Vaccine progress and the US stimulus have the global economy on track for a strong rebound in the second half of 2021. Core inflation is likely to rise as consumers find outlets for pent-up demand, but we believe it will not be substantial enough for interest rate hikes. This, in addition to the US stimulus support, has turned investor sentiment from delayed growth prospects to fearing that the growth might be too fast, putting more upward pressure on interest rates. There are still concerns surrounding COVID-19 variants being resistant to vaccines, as well as slow rollouts in some countries. We believe that those behind on the inoculation programmes will see continued fluctuations of cases in the future.

**Manufacturing PMI in the US, China, Europe, and Emerging Markets**

The manufacturing sector across the globe continues to improve, the question remains whether this level of growth can be sustained in the next quarter..




Source: Bloomberg

While the service industry just begins recovery, manufacturing continues to beat multi-year highs. The JP Morgan global manufacturing PMI rose to 55.0 in March, a 121-month high, a level suggesting strong growth of global manufacturing activity. Conditions continued to improve, despite the rising cost inflationary pressures and supply-chain disruptions. The US continues to improve, with the latest reading coming at 59.1 in March from 58.6 in February, the second-highest level on record, supported by the highest level of new orders since June 2014. US companies have started to pass higher input costs to clients through higher prices, as the arrival of stimulus cheques added fuel to an upswing in demand. With business expectations becoming even more optimistic by the end of the quarter, strong production growth looks likely in Q2 2021, but the big question remains whether rising price pressures will persist.

Despite the bad news regarding the virus, Europe's manufacturing performance held up well. In particular, the latest reading suggests that the manufacturing sector improved from 57.9 in February to 62.5 in March, a record high. While Germany remains the stronger performer, robust growth was recorded across the region. Growth rates improved in all sectors, although gains were particularly strong in investment and intermediate goods producers, both posting record highs in March.

In China, the latest official readings show a notable deceleration in activity expansion in March. Specifically, the IHS manufacturing PMI fell from 50.9 in February to 50.6 in March, a number indicating very slow growth in activity. The decline in recent months likely reflected the negative impact on global demand coming from the recent outbreaks of the virus, especially in Europe. In addition, new outbreaks of the virus in northern China led to economic restrictions that had a negative impact on domestic demand. Finally, manufacturing output was suppressed because of a shortage of labour.

**US:** The US is set for strong growth in 2021, supported by the recent stimulus injections, which is likely to keep consumers spending, at least in the medium term. The IMF forecast growth to reach 6.4% in 2021, which would be the best outcome since 1984. Indeed, the $1.8tn American Rescue Plan introduced in February 2021 is set to supercharge the US recovery as lockdown restrictions are lifted. Now, Biden's new $2.1tn bill will mostly focus on infrastructure, financed in part by a rise in corporate taxes. If Biden can get the plan approved by Congress, it should support prove infrastructure stocks in the short term but also help support the constructions-use of industrial metals in the longer run. So far, the equity market response to the news has been muted; bond yields moved close to the top of the range recently but have not gone one another strike.

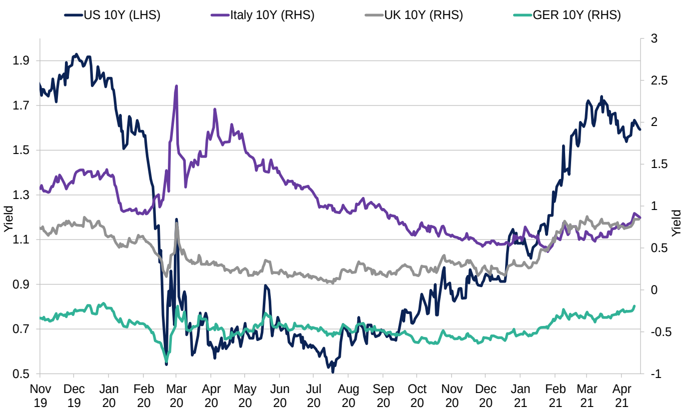
Stock markets fluctuate near the record highs, instilling worries of overbought sentiment, however, the positive sentiment has prevailed for more than a month, despite encouraging results out of the Q1 for corporate earnings, highlighting that investors were expecting something bigger. With the future economic recovery already priced in, it seems to be that the markets will struggle to go much higher. Additionally, despite the spike in bond yields, stocks have remained elevated, benefitting from the increased spread between short- and long-term interest rates, which also boosts the profitability of banks, and therefore, supports future corporate earnings results. The US stimulus and further reopening of the economy should boost the corporate earnings, supporting the outlook.

Vaccine distribution has accelerated rapidly, with an average of 2.8m doses administered per day at quarter-end. With President Biden pressuring states to open vaccinations to everyone by May 1st, it now seems very likely that America will be able to vaccinate the large majority of the population in Q2 2021, despite the pause of the J&J vaccine. Demand, not supply, should soon become the next challenge, as attention shifts to convincing those hesitant to get the vaccine. However, fears surrounding the prevalent variants remain elevated, as some are worried that the vaccine might not be able to protect them completely. So far, research shows that vaccines have not yet been shown to be ineffective against all of the current variants.

The markets have met the vaccine and stimulus news with higher bond yields, anticipating the Fed to adjust their monetary policy stance and raise interest rates as a result. The rise in the real yields, in part, reflect the upgrade in Fed tightening expectations. Nevertheless, the Fed stipulated that they are willing to tolerate higher inflation in the meantime to ensure consistent economic recovery and maximum employment. In the March Federal Open Market Committee, it was reinstated that the rate hikes are unlikely before the end of 2023.

## Developed Nations' 10yr Yields

Yields edged higher in Q1, as investors weighed on the inflation prospects.

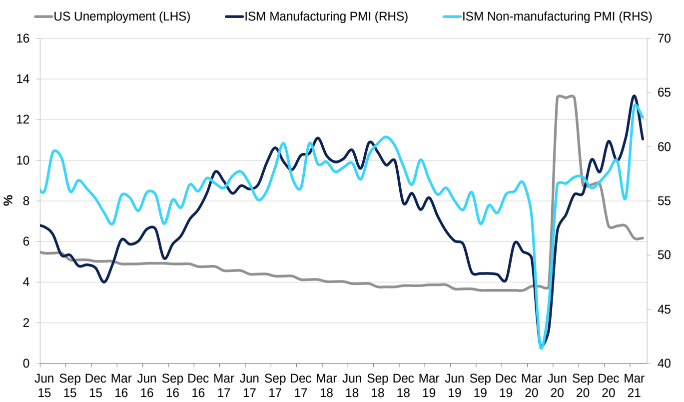



Source: Bloomberg

Reopening of the economy is likely to create inflation pressures in some sectors, evidently in the manufacturing, but spare capacity in the US economy means that the overall inflation is unlikely to rise substantially for a couple of years. In April, despite a strong economic backdrop, 10yr yields softened from 1.74% highs. Stronger-than-expected retail sales, as well as the recent inflation report, suggest the possibility of more inflationary pressures in the future. On the other hand, core inflation was under control, as it reached 1.6% in March. We do, however, expect a gradual scaling back of QE before the interest rate hike, with the purchase of bonds being reduced from $120bn per month. Indeed, economists now believe the Fed will start tapering purchases in Q4 2021, as the economy recovers strongly from the pandemic.

## US Sectors Performance

Unemployment levels continue to decline as the service industry recovers.




Source: Bloomberg

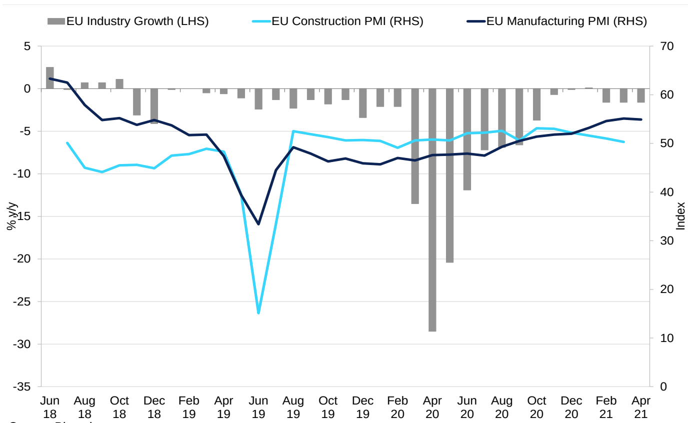
Initial claims for unemployment insurance fell to 576,000, the lowest level since the pandemic began. While this figure is declining week-on-week, it still remains at historic highs, and the number of people receiving the unemployment benefits is high. The labour market will continue to recover, yet slowly, until service employers feel confident about the economic reopening and demand growth. Despite these concerns, US Treasury Secretary Janet Yellen recently suggested that the economy might achieve full employment again by 2022. That would be a welcomed transformation of the US economy and ease some of the concerns about labour force scarring.

Retail sales soared in March to 9.8% m/m, above expectations, and the biggest increase since May 2020, when the economy first reopened since the beginning of the pandemic. The rise in retail spending most likely reflected not only the injection of the latest pandemic stimulus bill but also reduced economic restrictions across the country. Warmer weather conditions also encouraged spending. In addition to strong monthly performance, sales were up by 27.7% year-on-year, bringing sales well above the pre-pandemic level. The biggest beneficiaries of the rise in spending were automotive and electronics. We do not know the true extent to which this rise in spending could be attributed to another round of stimulus measures and which to relaxation of lockdown measures. However, we expect that given lockdown restrictions should continue to be lifted, growth will remain positive but grow at a weaker pace than that we saw in March due to a lack of government support.

**Europe:** Europe, in contrast to the US, has had less yield curve steepening. While bond yields have risen to the highest levels since early 2020, they remain historically low. We expect it to have a more delayed reaction, as vaccines and reopening are behind those in the US. This is also likely to keep the growth more subdued. As of mid-April, less than 22% of the European population had received at least one vaccine dose. This is compared to 50% in the UK and 42% in the US. Infection rates subsided but still remain elevated, and lockdown measures remain in place to contain the spread. However, after a slow quarter, the bloc is gaining pace in its inoculation programme and could be on track of reopening in Q3 2021. In the upcoming quarter, we should start to see an acceleration in recovery in economic growth rates, although from a low base, driven by the lifting of lockdown restrictions as well as the distribution of the recovery fund in H2 2021.

## EU Manufacturing and Construction Sector Performance

Construction continues to lag behind, while manufacturing beats multi-year highs.




Source: Bloomberg

In the Eurozone, the service industry continued to struggle- although the index increased from 45.7 in February to 49.6 in March, it is still contractionary. Continued weakness reflects the re- imposing of lockdown restrictions due to a surge in infections. However, the improvement since February reflects newfound optimism. The firms' expectations of future growth reached the highest level in over three years on the back of the growing number of vaccinations across the bloc. Because of the slow ramp-up in the vaccination numbers, the rebound in the service sector is likely to be delayed, suppressing economic growth in H1 2021. The pace and shape of the return to international travel still remain unclear, however, as of now, countries are proposing treaties for those travellers who have received the vaccine.

With the global economy recovering, inflation is rising in Europe, and the global economy got an injection of demand from the US fiscal stimulus, there has been concern that bond yields might move even higher, thereby stifling business investment and retarding the economic recovery. As such, the ECB announced that it would speed up the pace of asset purchases over the next three months. According to the ECB, the recent spurt in yields could drive a premature tightening for financing in all sectors of the economy. It reiterated its commitment to continue to engage in asset purchases until March 2022. In response to this announcement, bond yields fell today.

In the UK, a successful vaccine rollout should help keep the economy on track to continue reopening until June, which would support economic growth prospects. The IMF expects a rebound of 7% in 2021, after a 9.9% decline in 2020. The BOE is likely to keep the rates on hold during the recovery phase, and this is likely to keep gilt yield contained.

Now that we are four months down the line from the end of the Brexit transition period, there is data confirming its impact on both the UK and Europe. UK exports to the EU fell sharply, down a record amount of 40.7% m/m, immediately after imposing the agreement in January, whereas exports to the rest of the world increased modestly. Likewise, imports from the EU declined by 28.8%. Many believe that the weakness in trading conditions with the EU is what contributed to a 2.9% decline in GDP in January. The problems are believed to be short-lived, and while the export figures might not return to the levels seen before Brexit, growth is likely to stabilise throughout the year.

**China:** Chinese economic growth is expected to be strong in 2021, after a moderate increase seen last year, boosted by the recovery of the global economy supporting demand. As a result of the earlier start to recovery, China is expected to be one of the first economies to tighten the monetary policy stance this year. This is more likely to be a gradual process, with authorities remaining sensitive to bounds of volatility and a possibility of eased tightening given labour market weakness. Just like in the rest of the world, we expect domestic consumption to catch up to the production side of the growth, boosted by government incentives as well as developing labour market employment. In the meantime, the PBoC is expected to keep the lending rate and reserve requirement ratio on hold.

Around the world, shortages and supply chain disruptions, especially around semiconductors, and in China, this is clearly the case. In March, the government reported that the factory gate prices rose by 4.4% y/y, the fastest pace in two years and were up by 1.7% m/m. The surge in wholesale prices has not translated yet into higher consumer prices. Consumer prices were up by 0.4% in March y/y, the biggest increase since October. Core consumer prices were up a moderate 0.3% in March versus a year earlier. Although consumer price inflation in China remains muted, the surge in producer prices has alarmed officials. In fact, the government brought up the risk of rising commodity prices pushing on the stability of prices. Overall, in the first two months of 2021, industrial production is up 35.1% y/y. While this figure is higher than any other major producer country, it is only marginally higher than the 16.9% seen in 2019, before the pandemic. This strength has been driven by strong exports, fiscal stimulus, and success in suppressing the virus. Industrial profits, in particular, soared by 92.3% y/y in March, boosted by a booming economy and rising factory gate prices mentioned above.

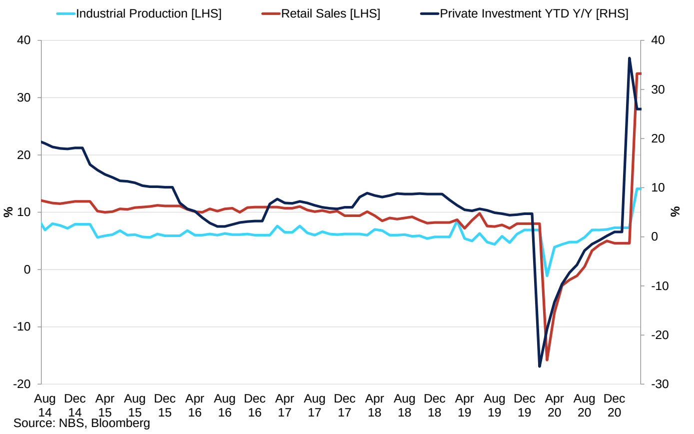
Meanwhile, the retail sector bounced back, as retail sales were up 33.8% y/y, vs 20.5% in the first two months of 2020, despite the impacts of the virus. That suggests a slow rate of increase, meaning that although China's industrial sector has been supported by growing export demand and fiscal support, the consumer sector has lagged behind. That is likely to be attributed to consumer concerns regarding the spread of the virus. Caixin service PMI improved from 51.5 in February to 54.3 in March, continued positive growth. Domestic supply and demand were strong, although export orders remained on the back foot. The easing of the new outbreak in the Northern regions helped boost consumer confidence. Inflationary pressures were up due to increases in prices of raw material and labour.

Fixed asset investment has grown rapidly in recent months, but it has not been sufficient enough to offset the decline seen in 2020. In particular, in the first two months of 2021, investment rose by 35% y/y, vs 24.5% y/y in 2020. However, that means that fixed asset investment is only 1.9% higher than it was two years ago, despite the recent injection of government investment in infrastructure. As of recently, however, sentiment is seen changing, as Chinese authorities have already begun to slow the pace of debt sales to finance infrastructure projects, highlighting the gradual tightening of fiscal support.

**Emerging Markets:** The massive US stimulus is having a disruptive impact on many emerging markets. The anticipation of higher inflation, in particular, boosted the rise in real US bond yields. As a result, this has generated capital outflows from EM nations, exerting downward pressures on local currencies. In order to avoid depreciation and reduction in foreign currency reserves, many central banks have boosted interest rates. Indeed, the Bank of Russia raised their key interest rates by 50bps. This has the potential to cause a slowdown in growth. Furthermore, with less access to medical care and vaccines, they are more challenged by the pandemic than their wealthier neighbours. According to the IMF, emerging economies are forecast to rise by 6.7% in 2021, above the advanced economies performance. This is attributed to emerging markets' outlooks improving later on in the year as vaccinations gather pace and global demand strengthens.

### Emerging Industrial Production vs Retail Sales vs Private Investment

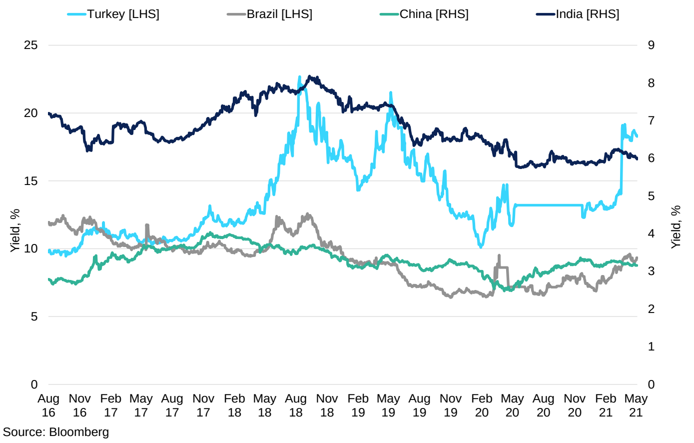
Both service and industrial sectors continue to grow, albeit at a slower rate than at the start of the year.




Rising commodity prices, especially oil, are likely to be a mixed bag for emerging countries performance. In particular, it will benefit exporters such as Russia and much of Latin America, however, be detrimental to importers such as India that is already suffering muted demand expectations due to the latest COVID-19 outbreak.

### Emerging Countries 10yr Yields

EM yields softened in April in line with a weaker 10yr yield in the US.




India is the latest country to face another strong wave of infections across the country, putting enormous pressures on the healthcare sector to support the economy. As a result, India stocks are set for the largest monthly foreign outflows in over a year, as overseas investors sold $1.1bn through end-April, and the currency suffered a 2.13% fall. On the other hand, in the last few years, India accumulated a massive pile of foreign currency reserves, doubling since 2014. This means that, unlike in other countries, India can afford a decline in reserves in order to stabilise its currency without having to resort to increasing interest rates. However, as the newest outbreak persists, the economy is unlikely to make any major changes in monetary policy decisions.

# Aluminium

LME Aluminium
3MO ($)


Source: Bloomberg, 07.05.2021

Summary

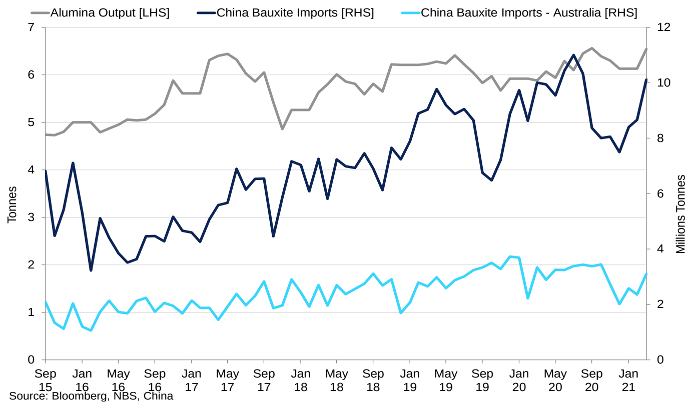
**The resumption of global demand and logistic disruptions caused premiums across the globe to rally. The market remains tight in the near term despite the high inventory level, but most of the stock is in Asia. Low carbon aluminium is highly sorted after, but supply is limited in the near term. The auto industry remains capped by the semiconductor shortage; this will continue in Q2. The extrusion anti-dumping regulations from the EU will keep prices in Europe elevated as it recovers. In our opinion, aluminium prices will remain on-trend in Q2 and premiums elevated demand is robust but inventories are not evenly distributed across the globe.**

**Q1 Recap:** As outlined in our Q1 report, risk appetite caused prices to rally 11.7%, prices broke above $2,200/t to test $2,300/t. The market closed at $2,212/t, but the 3-month contract has continued to rally and is trading at $2,435/t as of April 30th. LME inventories surged higher in Q1, following two days of significant inflows of material in March, stocks increased 40% for the quarter. SHFE deliverable stocks have followed a similar path, gaining 72% in Q1, inventories reached 388,000 tonnes a month. SHFE prices gained ground but underperformed the LME contract; prices gained 9.9% in the three months to March, with the 1st generic contract rallying 9.4% in April to RMB18,860/t. Logistical constraints and the emission restrictions in China surrounding coal-powered smelters propelled prices higher; this caused the SRB to indicate a willingness to release between 300-500,000 tonnes.Economic data favours the upside and risk sentiment, but the caveat at the time of writing is the Conid-19 Indian variant spreading to other regions.

**Outlook:** The seasonal lull in bauxite imports from Australia had no bearing on total imports into China in March. Shipments from Australia were 3.09m tonnes in March, but this was offset by arrivals from Guinea, which were 5.7m tonnes in the same period. Total imports of bauxite were 10.1m tonnes; the average for Q1 was 9.05m tonnes and increased from 7.8m tonnes in Q4 2020. Australian bauxite to China with 52% monohydrate CIF has consolidated in recent weeks at $41/t, the equivalent from Guinea is $44/t; bauxite lump from Guinea has been increasing recently to $45/t CIF. Prices of bauxite in Shanxi (6<Al/Si<7) is the highest in China but has held constant at RMB540/t as of April 30th, this compares to bauxite (6.5<Al/Si7.5) in Guizhou, which is RMB360/t. Bauxite availability is good, and this will aid alumina production in China.

Chinese Bauxite Imports from Key Origins vs Alumina Output

Imports are firm and we expect this to aid domestic alumina output.

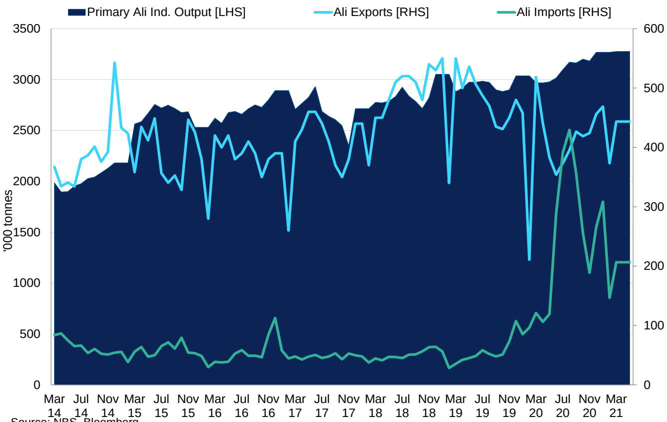



Source: Bloomberg, NBS, China

According to the IAI, alumina in output in China for March was 6.31m tonnes, an increase from 5.7m tonnes in February. According to SMM, Chinese production of alumina was 6.54m tonnes for March 2021. Alumina prices from Australia declined to $290.2/t at the end of Q1 2021; prices have fallen further in April to $272.31/t as of April 30th. China customs data shows that alumina imports have declined in recent months from 409,000 tonnes to January 157,000 tonnes. Reduced demand for alumina imports can be attributed to higher freight costs from Australian ports. The higher freight rates and consistently high alumina output in China will reduce demand for alumina imports, capping gains in Australian alumina in the near term. Chinese alumina prices fell to RMB2,349/t ($380/t), and with Australian alumina prices at $270/t plus freight, imports into China may remain slightly subdued. However, as domestic material consumption is robust by Chinese producers, Australian alumina prices will become more attractive to refineries.

### Primary Aluminium Demand vs China Aluminium Exports vs China Aluminium Imports

Imports are trending lower, but output and exports remain constant as China's capacity maintains the spotlight..

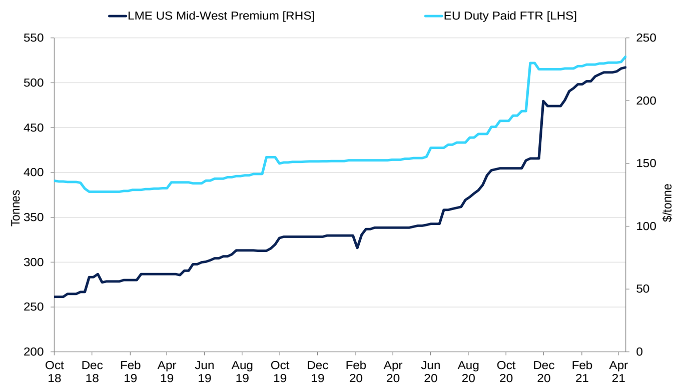



Source: NBS, Bloomberg

The output of primary aluminium for March 2021 was 3.276m tonnes, up 8.5% y/y, marginally higher than February's figure of 3.268m tonnes; cumulative production has reached 9.758m tonnes in March 2021, up from 8.843m tonnes for the same period last year. We expect aluminium output to remain high in the near term, especially with industrial production for aluminium products at 5.37m tonnes for March, down from 5.678m tonnes in December. The increase in both SHFE and LME prices will keep incentives for producers high, and if the LME market tests $2,600/t, this will incentivise smelters to transition away from coal. They are shifting smelter capacity away from coal-powered plants, increasing production costs and, therefore, the cost curve. Inner Mongolia was the only province that did not meet the carbon targets, but stricter regulations will come and therefore, the risk to new and existing capacity curtailments are real.

### US Mid-West Premium vs EU Duty Paid FTR

We have seen premiums across the board rally in Q1 2021.




Source: Bloomberg, LME

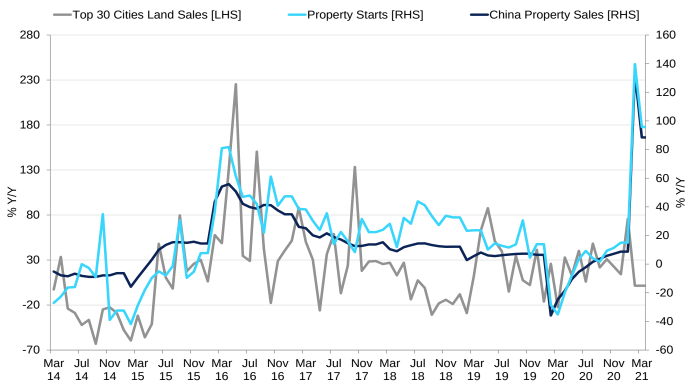
While the impact on production due to Inner Mongolia is limited, the rhetoric is essential, and output shutdowns elsewhere compel the bull case. Power tariffs and strict regulations could reduce the temptation for new capacity; we continue to see new capacity powered by renewables or Hydropower as producers look to capture the low carbon aluminium market. The inert anode technology being developed by a few participants can revolutionise the industry, and more and more projects are testing the technology, with Elysis looking to commercialise the technology by 2024. In conjunction with the low carbon aluminium premium, high exchange prices present a compelling financial case to produce low carbon aluminium, especially as downstream producers such as automakers and countries make carbon neutrality pledges.

However, the market for low carbon aluminium is in its infancy, and market pricing has not really been set, but consumption of the low carbon alternative will only increase. Indeed, the scrap market will also have a huge role to play.

The global chip shortage heavily impacts the automobile market, with no easy way out for this in the near term. Vehicle production in China was 2.56m units in March 2021, up from 1.5m units. We expect to see operation rates at factories moderate slightly due to the chip shortage. However, it has been noted that automakers outside of China and Asia are more severely impacted. We have seen approximately 100 assembly plants in Europe halted; this will significantly impact aluminium scrap, secondary, extruders, and recyclers who sell to the auto industry. We expect to see a shift in production towards P1020. In Europe, the average vehicle contains around 179kg; considering the chip, the shortage is likely to last at least 6 months, aluminium consumption in Europe will be considerably damaged as a result. We estimate that production loss could reach 100,000 vehicles in Europe alone by the time the chip industry recovers. In the US, automakers have halted production as well. The average aluminium content is more significant in the US than Europe and is expected to reach 514lbs per vehicle, 233kg in 2026. Aluminium casing for EV batteries in conjunction with increased use of aluminium sheet in car bodies, as automakers look to reduce the weight of their vehicles, will raise aluminium content in vehicles.

### Top 30 Cities Land Sales vs Property Starts vs China Property Sales

The construction sector is recovering, but new restrictions form a dark cloud.




Source: Bloomberg

The construction sector is recovering in line with investment and the reduction of restrictions. Property sales, new starts, and completions in China have all shown significant growth in the first few months of 2021. New starts gained have gained 23% from 2019's figures and 13% from 2020. We expect the month-on-month growth rate to moderate in the coming months, but in absolute numbers, figures will remain elevated, promoting aluminium consumption to continue to grow at a steady clip. We continue to highlight that regulations in the property sector, the slowdown of stimulus, and the tightening of financial conditions could moderate growth in Q4 2021.

Construction in the US and Europe shows continued sign of recovery, which will boost demand for aluminium. However, extrusion availability will decline, demonstrated by reduced exports from China due to anti-dumping. Exports to the EU from China has declined to 3,500 tonnes as of March 2021, a decline of 20.7% m/m and 64.7% y/y., total exports for extrusion were 58,000 tonnes in March. The EU imposed duties between 21.2% and 32.1% on China aluminium extrusion and aluminium structures. This has caused margins for extrusions to be significant in Europe and premiums to rally. The backlog of orders, high margins, reduced container availability has caused premiums for semi-finished products to rally significantly.

# Copper

LME Copper 3MO ($)

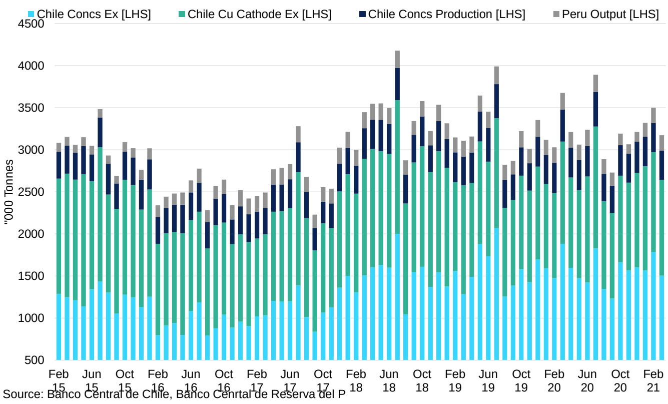

## Summary

**The disconnect between copper demand, supply and logistical disruptions have caused tightness in the market, aiding renewed risk appetite and optimism surrounding economic data. Fund positioning and the commodity super-cycle trade has fueled the rally. However, we see weaker demand from the physical market as prices are high. Chinese output may moderate in the near term due to maintenance at smelters, and we see signs of the recovery in supply. Manufacturing in China moderated in the first few months of the year, as expected, and in our opinion, activity will improve, although we may see a re-location of production as economies reopen. We expect prices to remain on-trend and push towards $11,000/t in Q2.**

**Q1 Recap:** Copper prices were well supported in Q1, gaining 12.9% to the end of March, but prices are up 27% YTD, as risk appetite due to improve the vaccination policy in the US. Also, economic data improved, the dollar weakened, and central banks continue to keep stimulus levels elevated to support economies. End-user consumption shows signs of growth, and the demand and supply disconnect helps explain high prices. Europe is playing catch up with the vaccination, and this will improve end-user consumption. LME inventories are declining, and stand at 143,725 tonnes, 130,600 tonnes of this material is in Europe. Manufacturing PMIs are improving, with the global figure at 55.8, China, US, and Europe PMIs are 51.9, 60.5, and 62.3 in April, respectively. TCs have been declining significantly as supply struggles to live up to demand, outlining tightness in the market.

### Chile Concentrate and Cathode Exports vs Chile Concentrate Output vs Peru Output

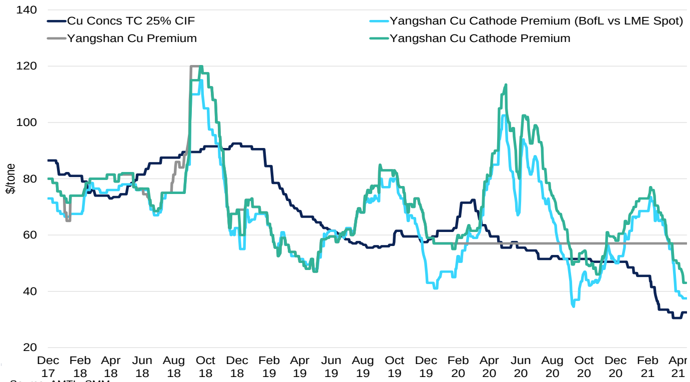
Latin America output improving, exports to China have rallied, but TCs are low.




**Outlook:** Codelco's pre-tax profits increased significantly for Q1 2021 to $1.627bn; this was primarily attributed to the rally in copper prices. According to company data, production reached 386,000 tonnes, up 7% from the same period last year. Chile copper concentrate and cathodes exports have been robust but still lag demand. Copper concentrate production was 324,600 tonnes for February in Chile, according to Cochilco Ministerio de Mineria, and we expect higher prices to continue to boost profits for miners. Whether this prompts more significant CAPEX in the longer term would help cover longer-term deficit fears due to solid demand from the green economy. Copper production in Peru is 155,753 tonnes for February, down from the previous month at 160,526 tonnes in January. Output in Peru has failed to keep up with Q4 2020 production, which has been aiding the tightness in the market. The copper concentrate index is low at $30.5/t as of April 30th and had been in constant decline since December 2021. The treatment charge for copper concentrate 25% CIF stands at $32.5/t as of May 4th. China copper concentrate imports reached 2.17m tonnes in March 2021, up from 1.8m tonnes in February. March's figures saw was strong due to robust demand from Chinese smelters and the delayed shipments from poor weather in January and February. Spot TCs are low in China, and while we do not expect a significant change of trend, there is a large amount of maintenance at smelters for May and June. As a result, demand should be a bit softer, prompting some strength to the market, and we may see benchmark rates in their 40s.

### Copper TCs vs Yanshan Premiums

Premiums declined as prices are high from their perspective. TCs will remain low..

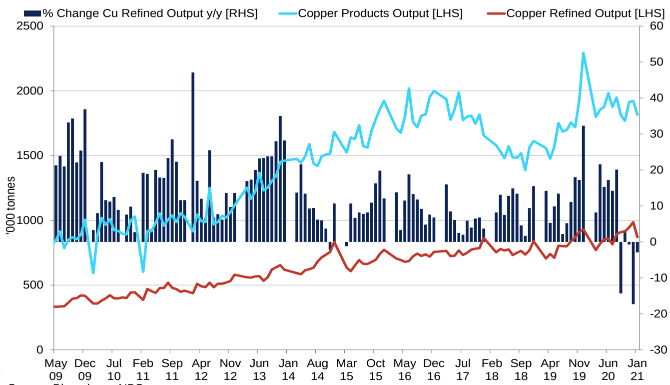



Source: AMTL, SMM

Imports of unwrought copper and copper products bounced back in March to 552,000 tonnes, up from 410,040 tonnes in February. The decline in January and February is seasonal, but we see the physical market slowdown for copper. Imports of refined material have also ticked higher, reaching 354,853 tonnes in March 2021; this improved from February's shipments of 275,522 tonnes. The LME/SHFE arbitrage is closed, and there is little scope for this opening in the near term; this should cap imports of refined material to some extent, as well as the reduced physical demand in China and Europe. There is a strong argument that lower premiums are a sign of an efficient market with prices high. Cathode B/L Shanghai CIF has declined to $37/t as of April 28th, down from $74/t on February 25th. The Yanshan Cu warrant premium stands at $43/t, the copper cathode warrant premium down at $42/t. We expect premiums to remain under pressure in the coming months as the flat price holds its ground. Inventory levels in China are sufficient in the near term, especially following the large amounts of copper China bought in Q2 last year. They continue to sit on large quantities of material. Copper wire producer finished inventory has been rising in 2021, indicating weaker demand, due to more inadequate consumption from the state grid and infrastructure, but we expect a resumption in this demand in Q2; however, you cannot just rely on this. Tube finished stock levels are still high, but PSS finish stocks have been falling. SRB inventory holds its level at 1.5m tonnes, and bonded warehouse stocks are shy of 400,000 tonnes.

### China Refined Output vs Cu Products

Production is starting to moderate in the near term, and maintenance in May and June will cap output.



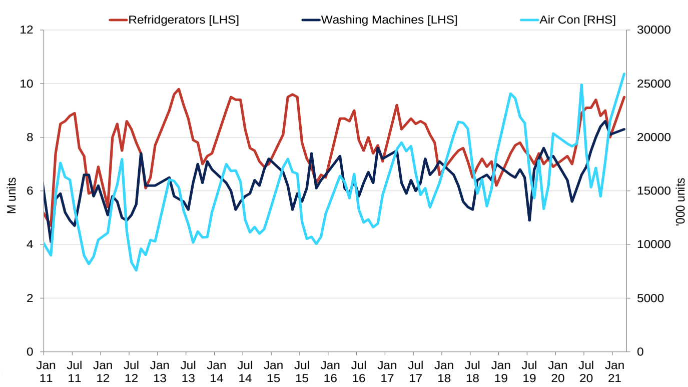

Source: Bloomberg, NBS

China production of refined output 870,000 tonnes in March 2021; this was a decline from December 2020's output level of 986,000 tonnes. March's output was down -2.9% y/y, and production of copper products has declined in recent months to 1.8m tonnes in March, down from December 1.92m tonnes. Operating rates for tube and wire producers are rising but remain below April and May 2020 levels. We expect production at smelters to moderate in May and June due to maintenance; this will cause TCs to rise. Indeed, supply from Chile is improving, and, in our opinion, there are early signs that supply will start to rebalance in H2 2021.

In contrast, we do not expect this to play out in the LME price in Q2 as macro funds favour copper due to the green economy and an improving macroeconomy in the near term. We do not expect central banks to tighten their monetary policy, but we hope to be seen bond- buying tapered, making prices moderate. The backwardation shows the tightness in the market; however, when supply starts to respond and premiums weaker, weakness in the spread is becoming more likely in H2 2021.

### Home Appliance Sales

Sales and production of home appliances robust due to property completions.




Source:Bloomberg

All systems financing rate reached 3.3trn in March, an increase from February 2021. The net cash injections every week are flat and have been for a while. This suggests no injections of liquidity into the economy but merely replacing what has matured. End-user demand in the US is strong, and we are starting to see improvements from Europe. Consumer electronics consumption is robust, and the financial results from Apple, Microsoft, and Amazon outline end-user solid demand. The technology bubble will continue in the near term, but we continue to highlight that when furlough payments are stopped, end-user demand will falter. The global shortage of chips and semiconductors impacts automotive production, which may soften copper demand from this sector in the near term. EVs have a higher content of copper, and the push towards new energy vehicles and energy will boost consumption in the long run.

The Biden stimulus has boosted sentiment, but the physical demand from the green expenditure will take a while to filter through. The US is behind the curve on the EV front, with around 3% of the total global stock. The new policy will boost sales in 2021, but the market is still significantly behind Europe and China. With the construction sector on the front foot, completed space in the commercial and residential sectors has prompted home appliances to strengthen. Air conditioners, refrigerators, and washing machine products sales have increased since October 2020 in, China and as more property buildings get completed in the near term, we expect this to continue. The new property finance regulations have meant developers need to sell units to finance new projects. As a result, home appliance demand will robust in Q2, but with the government looking to prevent a property bubble, these restrictions may reduce copper consumption in the longer run.

# Lead

LME Lead
3MO ($)


Source: Bloomberg, 07.05.2021

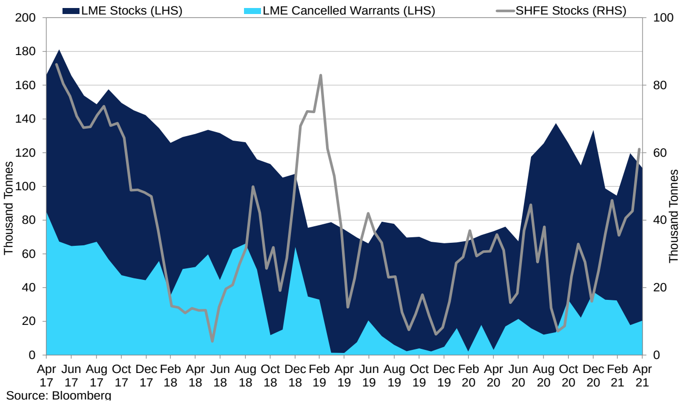
Summary

**Lead demand from the automotive industry has been gaining pace so far this year; we expect this to remain the case in Q2. YTD vehicle sales in China is 5.67m; passenger cars make up 5.09m units. Chinese industrial sector continued to grow, albeit at a slower pace than by the end of 2020. Likewise, European demand remains muted due to the extension of the lockdown restrictions across the bloc, postponing the country's demand. On the other hand, healthy fundamentals and a refined lead squeeze in the US are supporting prices, limiting the chance for another correction.**

**Q1 Recap:** Lead fluctuated in Q1, finishing the quarter on the back foot, falling by 3.7%, below the key support level of $1,896/t for the first time in six months. Except for nickel, lead has once again lagged behind other base metals, as a stronger dollar weighed heavily on lead prices. The dollar gained 2.5% in March, pushing the dollar-denominated value of base metals, and in turn lead, down significantly. Despite some currency breathers during the month, the downward pressures did not ease, as Chinese manufacturing data showed to be slower in February, dampening expectations of increased metal consumption. The Caixin manufacturing PMI fell from 51.3 in January to 50.9 in February before declining to 50.6 in March. On the other hand, manufacturing activity in the US has increased substantially, rising to the highs of 60.6. We did see some stabilisation in lead prices by the end of March, as stronger Chinese export levels and the approval of the economic stimulus package offset the effects of a stronger currency.

### LME Lead Warehouse Stocks vs SHFE Deliverable Stocks

LME stocks jumped to 2017 levels in 2020 and are seen subsiding with demand.




Source: Bloomberg

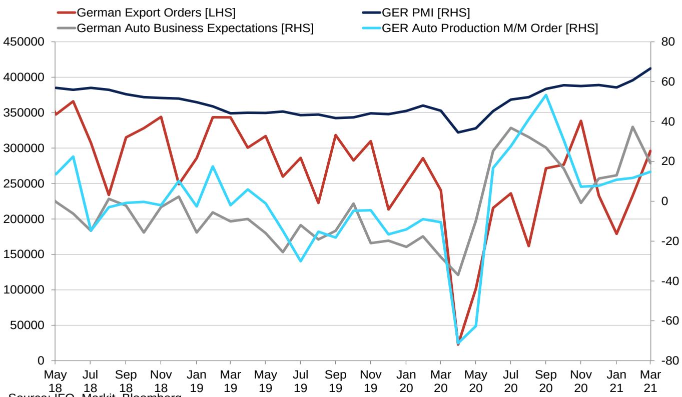
**Outlook:** Near term outlook for lead remains muted, and market confidence has been diminishing demand. Investment funds have fallen substantially, with net length declining from 11,136 to 755 contracts, the level last seen in November 2020. As lead prices suffered, exchange stocks leapt higher, plunging investor interest. LME stocks surged higher in March, up by 26.5% to a total of 119.7kt, the highest total so far this year. SHFE stocks rose as lead production built momentum after the Chinese New Year, however, fell down in the last week of the quarter due to some smelter maintenance prompting drawdown of these stocks by battery makers. Live warrants jumped by 63.6%, exceeding 100kt for the first time since October.

European COVID-19 case flareups created market distress, complicating the outlook from the demand side. The slow pace of the vaccination programme put the bloc recovery considerably behind the US and the UK, countries with now more than 40% of the population vaccinated. Poor European performance boosted the rise in the dollar's value. It was further bolstered by the worsening geopolitical tensions between China and the US, UK, and the EU. In Q1 2021, the registrations of BEVs increased by 59.1% to reach 146,000 cars, with demand still benefiting from government stimulus support for zero-emission vehicles. Overall, new passenger car registrations grew by 87.3% up to 1.06m, up from 0.56m same time last year; hybrids made up 18.4% of total passenger car sales in the EU, almost doubling the share in a year. Germany saw a 36% rise in new registrations in March, up to 292,000 units. In the meantime, Germany's IFO business index improved noticeably despite the lockdown restrictions in place in March, rallying to the highest level of 96.6 since June 2019. Export order and production continue to improve. Companies are reported to be more satisfied with their current business conditions, and optimism about the upcoming months has also returned.

The shortage of semiconductors has created some difficulties for the car industry, with many companies announcing production slowdowns. The main reason behind the shortage is a significant increase in demand for semiconductors during the pandemic, in part due to increased sales of consumer tech. The global market for semiconductors is estimated to reach a value of $476bn, and further growth of 7.7% y/y is forecast for 2021, as global vaccination rates continue to pick up, and lockdown measures are gradually lifted. Indeed, for car manufacturers, the situation is quite challenging, and competition of supplies with other sectors is intense. As a result, US scrap prices gained ground despite ample supply, as lead producers filled out orders books until May to convert scrap batteries to refined lead to satisfy the battery maker demand. However, with adequate stocks and a falling futures price, many smelters are holding off battery purchases in hopes of even lower prices to come out from the reduced collector demand.

### German Auto Market and Manufacturing PMI

Conditions in Germany start to improve as manufacturering confidence rises.

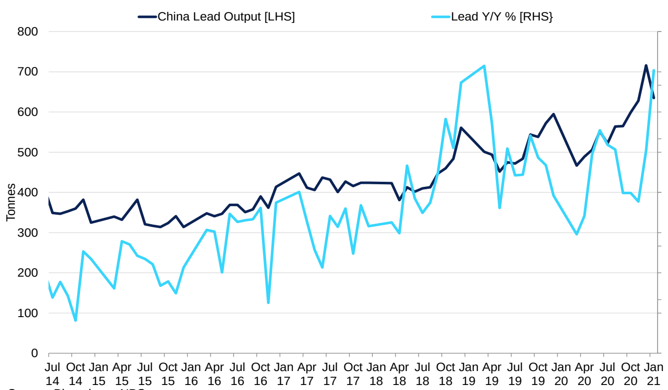


Source: IFO, Markit, Bloomberg

Battery plants in China have come back to normal production, especially in the early part of March, with workers returning home from the Chinese New Year holidays. However, demand for automotive batteries was only modest, as distributors and wholesalers restocked after running down inventories prior to the holiday period. Chinese passenger vehicle sales increased by 29% to 1.487m units in March, the first monthly increase since December 2020, up 42% y/y, due to workers returning from the national holidays. In the longer term, we expect ICE sales to continue to fall, as the government expects 40% of all new vehicle sales to be coming from electric cars to phase out ICE cars altogether by 2035. Allocation of new car license plates, as well as purchase subsidies, are the main policy tools currently used to promote the NEVs. However, by 2022, the government should halt subsidising new BEV purchases, as it is shifting focus towards EV charging infrastructure development. While infrastructure is crucial to EV adoption, the relaxation of subsidies is likely to have an impact on immediate vehicle sales.

### Chinese Lead Output vs Chinese Output Y/Y

Output softened in January, but year-on-year performance continues to improve.



Source: Bloomberg, NBS

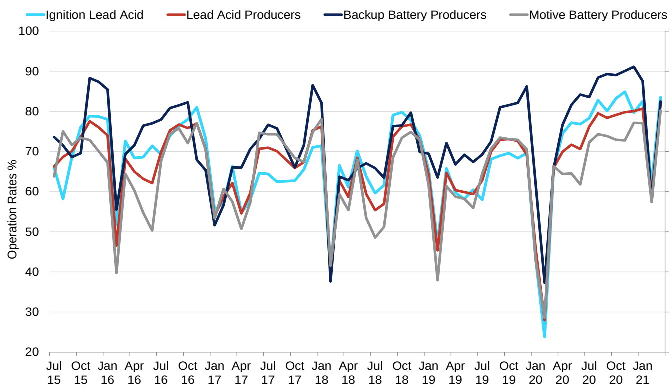
Negotiations of annual contract terms for concentrate supply did not reach a conclusion in February. While smelters may remain hopeful of signs that concentrate availability will improve from 2020 levels, it appears that the opposite is taking place. Pandemic-related disruptions to mine production do not seem to be picking back up significantly, despite the low base of growth, with only modest losses reported so far. Indeed, energy consumption controls have forced some mines in Inner Mongolia to shut down, making it unlikely to return to normality soon. As a result, spot TCs there have fallen substantially and are likely to continue to fall.

Reduced mine supply there could possibly cut the supply of domestic feed to Chinese smelters, as the country does not export any lead concentrate. Overall, spot TCs remain close to their cycle lows and may be held down if smelters try to increase production rates through this year. As of May 1st, monthly domestic TCs for lead concentrate stand at RMB1,700- 1,900/mt, whereas TCs for imported concentrate remain in the $50-70/dry mt.

In 2021, mine production is expected to increase marginally, up by 2.7%, not enough to offset the 7.8% decline in 2020. Refined production, however, should grow strongly enough to offset the contraction seen in 2020, at 3.7%, on the back of an improving global economy. The most prominent component should remain in consumption as the world recovers from the lockdown restrictions. As mines ramp output up and availability improves, lead concentrate markets are likely to soften in the second half of the year, improving the supply outlook. While supply is seen growing from the pandemic lows, mine production is not forecast to climb in excess of the 2019 levels, which is the case for zinc. Furthermore, with last year's concentrate deficit depleting concentrate stocks as well as the disruptions between the mine and smelter, lead concentrate is set to remain tight, up to -60kt in 2021, supporting the price from the downside. Operating rates rebounded sharply from a contraction seen over the January and February levels, with backup battery producers picking up to 91.11%, as workers came back from the Chinese New Year, however, seen below the December 2020 levels.

### China Battery Operation Rates

Operation rates have improved so far in 2021.



Source: Bloomberg, SMM

Likewise, the availability of refined lead is increasingly tight, thanks to continued pick up in demand, despite no shortage of the scrap feed. The premium for US domestic 99.97% purity secondary lead was around $45-65/t higher on February's level. Additionally, cash to 3-month contango has increased in Q1 2021, supporting the outlook for lower prices. The above- mentioned conditions are coinciding with the metal transitioning towards its seasonal low in consumption as the consumer countries transition into warmer weather. However, healthy fundamentals and a refined lead squeeze in the US are supporting prices on the downside, limiting the chance for another correction. As of April 27th, the spread is at -21.5/t, and the price of lead breached $2,050/t, a level last seen in February. China produced 280,900mt of primary lead in March, up 12.17% m/m and up 17.23% y/y, due to the increase in working days for refined lead smelting enterprises. Due to the recovery period after the Covid-19 pandemic in March last year, the resumption progress of some smelting companies was slightly delayed. Stronger growth was seen in secondary production, as China produced 334,800mt in March, up 53.79% m/m and 194.23% y/y.

# Nickel

LME Nickel 3MO ($)

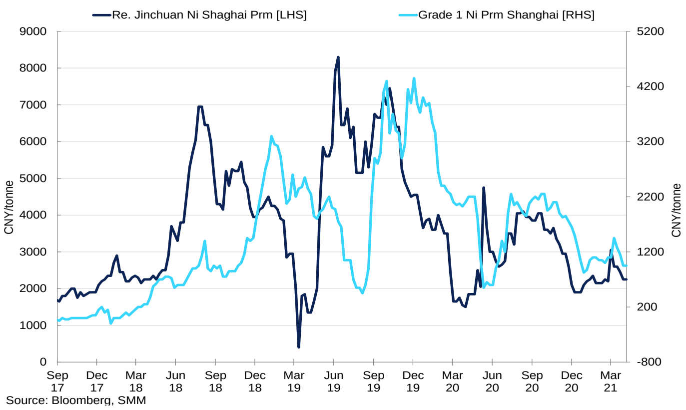

## Summary

**NPI production in China has been held constant in recent months, and operating rates for NPI producers are low. We expect lower availability of nickel ore to curtail production in 2021, and we are seeing more Chinese imports of ferronickel and stainless. Indonesia capacity is increasing at an alarming rate, which will change the market balance in the long run, especially regarding matte. Nickel premiums have softened slightly in China, but nickel sulphate demand is robust and will continue to be supported by EVs and new energy. Stainless is still the driver of fundamentals, and we see an upside to nickel prices in Q2 due to a continuation of the fundamental outlook from Q1. However, in the long run, the market balance suggests we could see a reversal of the trend in the medium to long term.**

**Q1 Recap:** Nickel prices were on track to perform well in Q1, gaining 20.8% to February 22nd. However, news broke that Tsingshan would soon choose between NPI for stainless and matte for batteries. This caused prices to fall back to $16,000/t; the market closed at $15,948/t, down 4.1%. SHFE prices followed a similar pattern and declined 1.9% in Q1, closing around RMB121,000/t. Prices rallied in April and trade at RMB129,770/t as of April 29th. LME inventories have increased marginally and sit at 262,212 tonnes; SHFE deliverable stocks have been declining since August 2020 and stand at 8,560 tonnes as of April 29th. EVs sales globally been improving at a rate of knots, in conjunction with investment in the battery supply chain and infrastructure. We expect sales of EVs to be robust, as policies favour e-mobility.

### Nickel Premiums

Premiums are weakening, but demand for nickel is expected to be significant.



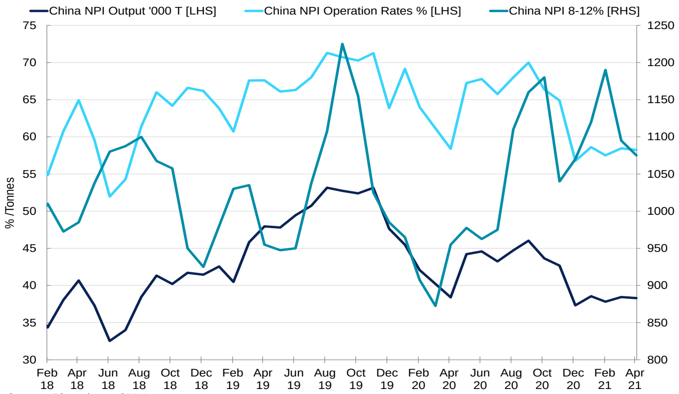

Source: Bloomberg, SMM

**Outlook:** In the last quarter, Tsingshan announced that they would provide 100,000 nickel matte from Indonesia. However, the statement outlined that this would only be the case when market conditions allowed. This technology has been in development for some time. Still, now we know Tsingshan is commercialising it, the market balance for battery-grade nickel has changed, and that is the reason behind prices falling so sharply. According to Wood Mackenzie, the margins are the most crucial factor; converting NPI to matte costs $2,000- 4,000/t, refining matte to sulphate is an additional $2,000/t, bringing the total cost of ore to sulphate at $11,500-13,500/t. So, assuming the matte price equates to 85% of the LME price, the sales margin could reach $3,000/t; if sulphate is included, this would add approximately $6,000/t, according to Wood Mackenzie.

Mined nickel is expected to improve in 2021 due to reduced disruptions and increased Indonesian capacity. However, Nornickel revised its output for 2021 due to disruption by 220- 230,000 tonnes, reducing 35,000 tonnes. The Federal Service for the Environment is inspecting the ore loading facility at Norilsk's concentrator, and it is not clear when this will re- start. On the nickel pig iron side of things, we expect Indonesia to be in the driving seat for 2021 as the new capacity comes online. Production capacity could reach 800,000 tonnes in 2021, with 70% of this capacity being commission this year alone. Indonesia's nickel mine output reached 79,000 tonnes in February 2021, which is flat on the month.

## Chinese NPI Output vs China 8-12% NPI Price

Operating rates moderated in China- we expect output to remain constant in Q2.

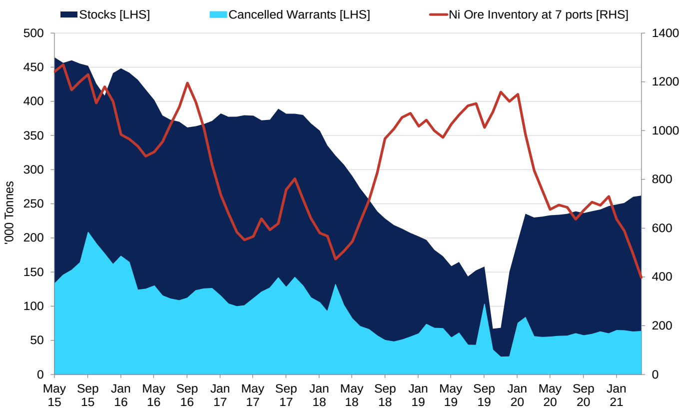


Source: Bloomberg, SMM

One thing is for sure, though, that China's NPI output will decline in 2021 due to the reduction in nickel ore imports. Nickel ore imports reached 1.84m tonnes in March 2021; while we usually see imports low due to seasonality, March's figure was down year-on-year. We expect Chinese imports to increase in the coming months in line with previous years. The premium for imported nickel laterite ore 1.4-1.6% to Rizhao Por CIF has softened recently.

## LME Nickel Inventory vs Ni Ore Inventory at 7 major Ports China

We expect ore inventories to decline further due to reduced availability of imports.



Source: Bloomberg

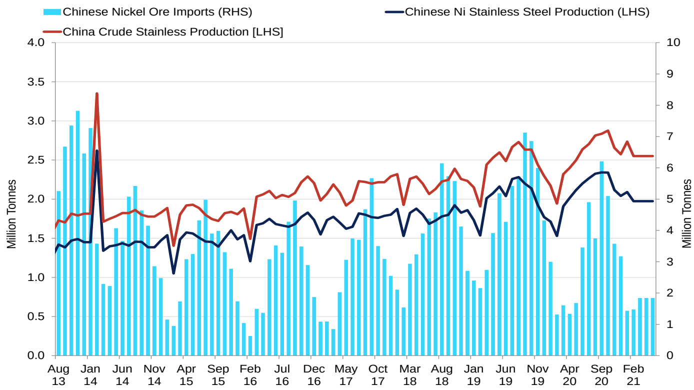
What is different to last year is domestic nickel ore inventory levels, the 7 most significant ports in China have declined significantly since April 2020, falling from 781,000 tonnes on April 24th, 2020 to 424,100 tonnes on April 29th, 2021. Nickel ore inventories increased by 77,000wmt to 5.37wmt on April 30th. The reduced imports of nickel ore in conjunction with lower stock will support nickel prices in the near term and continue to cap Chinese NPI output. We could see production of Chinese NPI fall to 450,000 tonnes; there is a significant downside to this number due to high costs for NPI producers in China and increasing capacity in Indonesia, changing the market balance in H2 2021. The NPI output in China was 384,400 tonnes for March, up from 378,200 tonnes in February. Operation rates for NPI have remained constant, around 60% for the first few months, and we could see output remain subdued due to the weak availability of nickel ore. China NPI 8-12% prices have rallied, in line with raw material costs, and trades at 1,067.50/t as of April 29th. There is increased availability of nickel ore from the Philippines as weather conditions have been favourable, with China customs data suggesting March exports reached 1.6m tonnes, up from 1.15m tonnes from March 2020. Q1 exports to China reached 4.024m tonnes, an average of 1.34m tonnes per month.

Freight rates from the Philippines to the port of Lianyungang has softened slightly to $17.75/t. Nickel 0.9%, Fe 49% FOB from the Philippines has remained flat in recent months, standing at $19/wmt, the nickel 1.5%, Fe15%-25%, FOB Philippines has declined sharply and stands at $44/wmt, as of April 30th, down from $66/wmt on March 18th, according to SMM.

However, it is well documented that this material will not fill the void left by Indonesia. We see more imports of ferronickel into China from Indonesia; March data outlines that China imported 277,752 tonnes, up from 233,815 tonnes in February. For Q1, total imports reached 800,970 tonnes, up from 757,861 tonnes for Q4 2020. We continue to see appetite for NPI and ferronickel in China, with imports remaining elevated. Imports of stainless steel into China for January and February were up 151%y/y, to 375,000 tonnes, of which 297,000 tonnes were from Indonesia. Demand for nickel in China is robust, with Q1 stainless production up 36.4% y/y, crude stainless output reached 8.2m tonnes, according to the stainless-Steel Council of China Steel Enterprises Association. 300 series prices have been rising as improved domestic demand continued before China's Labour Day holiday, 304/2B coil-EM (Wuxi) stands at RMB15,400/t with 304/No.1 Coil (Foshan) RMB15,100/t. According to Mysteel, commercial warehouses at Wuxi and Foshan declined in the week to April 29th to 545,468 tonnes, down 7.5%; this is the 9th straight week that inventories have declined.

## Chinese Nickel Ore Imports vs Stainless Steel Production

Series 300 stainless has been robust in Q1, we are seeing greater imports of stainless into China.



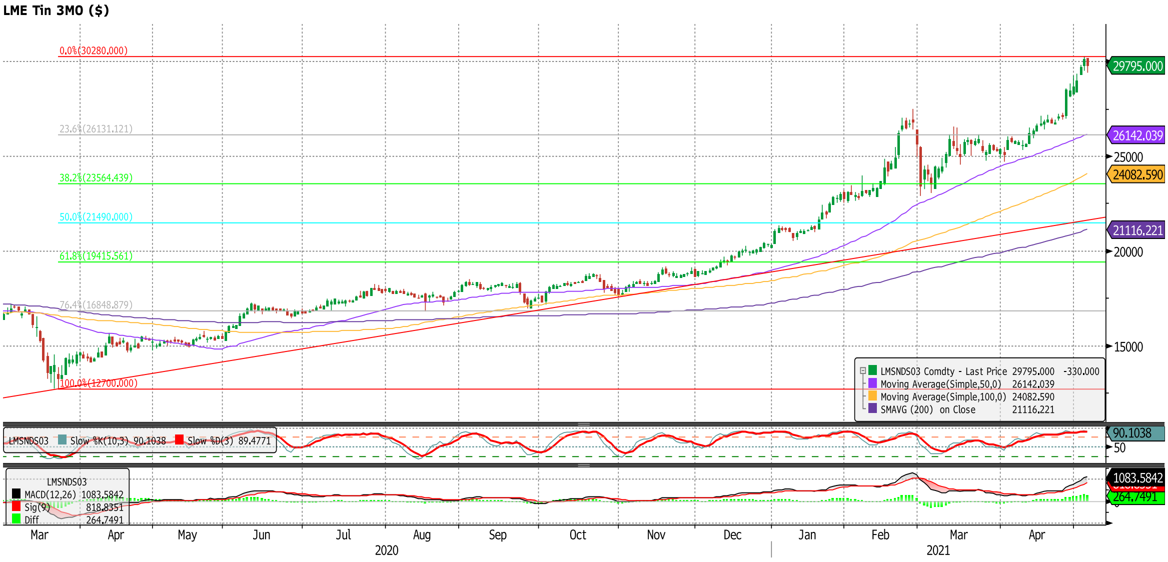
Source: Bloomberg

We believe nickel consumption from stainless will be robust. However, one area that is likely to remain subdued is aircraft orders. Travel restrictions across the globe are still high, and with new variants of the virus, there is little scope for all these restrictions to be lifted any time soon. As such, aircraft deliveries will likely be 800-1000 for 2021, a modest improvement from 2020. However, market sentiment continues to look to the EV market for guidance. Battery demand from EVs and new energy will continue to see double-digit growth in EV sales; while these numbers are coming from a low base, the increase in this market will be significant.

Nickel sulphate prices have outperformed nickel recently; battery-grade nickel sulphate stands at RMB31,250/t, with the electroplating grade at RMB35,250/t as of April 30th. According to SMM, nickel sulphate production increased to 98,500 tonnes or 21,700 tonnes of nickel content. We expect output to be healthy in the near term, following new capacity added in the Zhejiang province. EV sales in China continue to grow in Q1, but March sales reached 210,000 passenger plug-in cars, up 244% y/y. Year to date sales for new passenger plug-in EVs reached 491,000 units. In 2020, China sold 1.3m EVs, which equated to 41% of the global sales, Europe represented 42%, whereas the US was significantly behind the curve at 2.4%.

# Tin

## LME Tin 3MO ($)



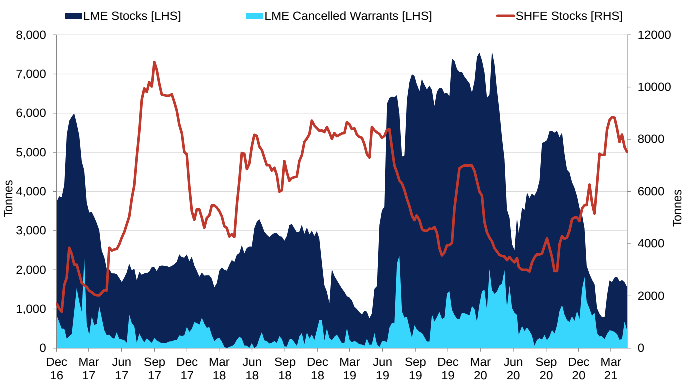

## Summary

**The perfect storm for tin is set to continue, with low availability of raw material and strong demand for semiconductors and solder. This trend is set to continue, with a global shortage of chips and semiconductors. Processing fees for tin concentrate in Hunan are averaging RMB900/t as of April 26th. According to SMM, solder bar 63A and 60A prices are RMB129,000/t and RMB124,000/t as of April 26th, and prices have oscillated around this area in recent months. SHFE inventories are higher, and we expect any shortfall in production in China due to smelter maintenance and environmental inspection. We expect prices to trend higher, $30,000/t is the critical psychological level, before the all-time high of $33,559/t from April 2011.**

**Q1 Recap:** Tin was the star performer in Q1 2021; YTD prices have gained 31.8%. SHFE prices have rallied 18.48% this year, with prices at RMB184,500/t. Sentiment remains bullish, and the shortage from the microchip industry continues to have ripple effects for the broader global economy. Orders in the auto market have been damaged due to the backlog of orders for chips. LME inventories have increased marginally over Q1, but they remain perilously low. Conversely, SHFE stocks have continued to rise and stand at around 8,000 tonnes, with the LME at 2,000. The tightness in the tin market has caused the cash to 3m contract to tighten exponentially, reaching $2,650/t and now stands at $1,476/t.

## LME & SHFE Stocks

SHFE inventories are sufficient to cover the reduced availability of the raw material.

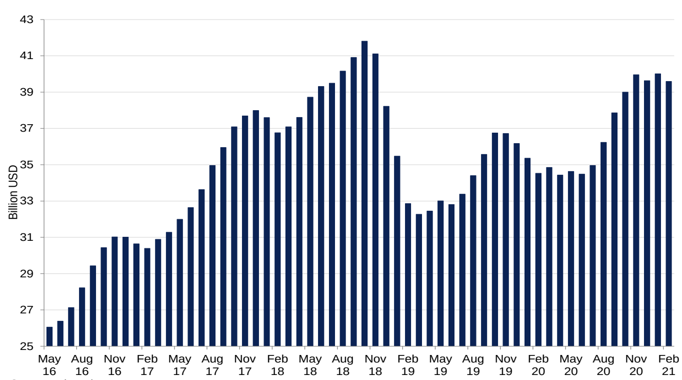


Source: Bloomberg

**Outlook:** The PHLX Semiconductor Index gained 10% in Q1 2020 but pulled back from all-time highs in recent sessions, but the sentiment is firmly on the upside. The WFH economy has prompted orders for consumer electronics to skyrocket, and chip manufacturers have prioritised higher- margin products. The problem was compounded when a Japanese microchip factory offline due to a fire. The current PE ratio for the index so far in 2021 stands at 36.95, the dividend yield is low at 1.13, down from 1.26 last year. The gross margin stands at 52.26% as of April 20th, and the profit margin stands at 19.79%. TSM reported their Q1 sales 2021 increase 25% y/y to $12.92bn, earned 96cts per share in Q1, beating expectations. They expect revenue to reach $12.9bn to $13.2bn in Q2 2021 as orders remain strong. The 5-nanometer semiconductor and 7-nanometer semiconductor accounted for 14% and 35% of revenues, respectively. TSM expect their HPC chips to remain strong, and this should offset seasonality in the smartphone sector. However, Apple's launch of new products is expected in Q4; there could be challenges in the supply chain for these products due to the shortage. Samsung also saw profits rise for Q1, potentially 44%; operating profit is expected to be $8.2bn. DRAM chips demand remains robust, and this will keep revenues buoyant in Q2 2021.

## Global Semiconductor Sales

Sales continue month-on-month improvement. WFH economy only aids this.



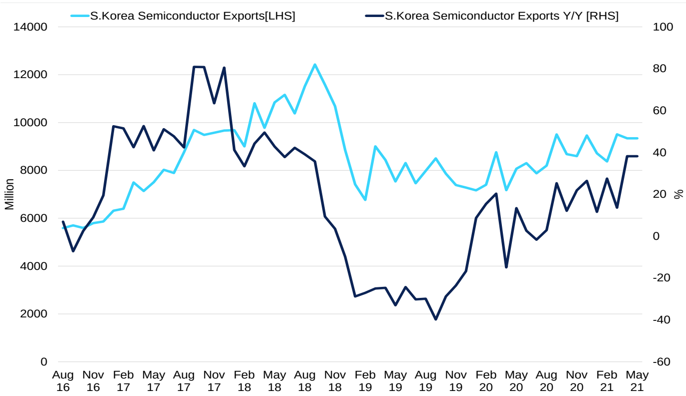
Source: Bloomberg

Semiconductor sales for January 2021 remained strong, improving 1% to $40bn, up from $39.6bn; the Semiconductor Industry Association represents 98% of the US semiconductor industry and two-thirds of the non-US chip companies. Production continues to play catch up with demand; sales are forecast to increase year-on-year for 2021. Regionally, China continues to dominate, with sales up 18.9% y/y, with the Asia Pacific/other at 18.2% y/y. On a month-on-month basis, European sales are strengthening, up 0.8%, Asia Pacific/other, grew 1.5% m/m in February. China sales were flat on the month, with the Americas down 5.9% m/m. Given the recent shortage of chips and semiconductors globally, President Biden has shown his intention to invest aggressively in semiconductors and batteries. The CHIPS for America program have bipartisan support, with Biden asking for $50bn to invest in research and development of semiconductors. This will improve America's resilience to the semiconductor supply chain in the long run, this is no quick fix, and the President has pledged $37bn to cover the costs in the short run of securing the chips. The shortage is expected to continue for at least the next 6-months; we expect this to cap auto production further with the risk to the electronics market growing. The lower margin products will be the first to have production limited, which we see in the auto industry.

Taiwan exports have remained strong so far in 2021; this is expected to remain the case. In March, exports of electronics reached 15,844m which is an increase of 27.3% y/y. After January's 64.3% y/y increase, the growth rate is falling, but the absolute figures remain high on a historical level. According to the Ministry of Finance, electronic exports to China set a record in March, reaching 11,031m; according to the Ministry of Finance, this was a 36.3% y/y. We expect shipments to China and Hong Kong to remain high as mainland China stockpiles where possible. China needs the chips and semiconductors from Taiwan, products for optical equipment were robust, with Hong Kong and Mainland China consuming 70% of the total global demand for Taiwanese products. We continue to hear reports that some technology firms are attempting to stockpile supplies if a deterioration in relations between the US and China after calls for more tech bans on China increases. The reliance on trade from China is something Taiwan is looking to amend and increase business with the US and Europe.

### S. Korea Semiconductor Exports

Indonesian Exports grow at a strong pace as the industry runs at full capacity.



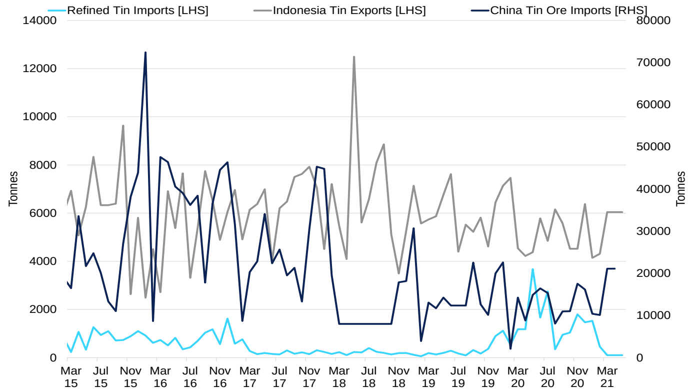

Source: Ministry of Trade, Industry and Energy

China's imports of refined tin have declined significantly in recent months to 102 tonnes for March 2021, while exports increased to 939 tonnes. Conversely, imports of tin ore have risen in recent months to 21,115 tonnes as of March 2021. According to customs data, 18,163 in March equates to 86% of the total imported ore for March. Bolivia and Congo imported the remaining 2,395 material. According to the ITA, tin content of the imports was 6,000 tonnes. The higher prices have likely incentivised high-cost producers, with lower quality ore now being extracted. Availability of the raw material remains low, and this is expected to remain the case. However, political tensions between Myanmar and the UK, US, and Europe could see more products being shipped to China. Tin concentrate in Yunnan averaged RMB172,250/t as of April 26th, which has increase RMB2,000/t on the week, the other three significant provinces all have an average of RMB176,250/t as of April 26th, according to SMM.

Processing fees for 40% tin in Yunnan average at RMB13,000/t, down RMB500/t on the week. According to SMM, fees for 60% tin are lower at an average of RMB9,000/t in Hunan. In recent months, exports of tin from Indonesia have been improving, reaching 6,043 tonnes in March up from 4,313.6 tonnes in February.

### China Refined Tin and Tin Ore Imports vs Indonesia Tin Exports

Imports of refined tin into China have been low, the arb window is shut but ore imports are growing.




Source: NBS

Chinese smelters have cut production in April due to environmental inspections; the inspections will now be finished as they only lasted a month. We do not expect this to have reduced output of refined material; however, the trend is worth noting. We see increased pressure from authorities on smelters and provinces to improve or maintain environmental standards. We continue to watch the rhetoric from governments about environmental standards and closures for inspections. Maintenance has also been brought forward due to insufficient availability of raw materials, and SHFE deliverable stocks will provide enough cover in the near term.

Investment funds have drastically reduced their long exposure in recent months; the z-score for the current investments fund position is 0.674, the maximum is 2.30. The z-score shows how many standard deviations the current position is from the median. Pricing momentum favours the upside, and solder demand will be strong, indicating the rally will continue. Tightness in the spreads will continue in the near term, with raw material availability low. The fact that prices have maintained their strength despite the reduction net length suggests a continuation of the trend as the perfect storm for tin remains intact.

# Zinc

## LME Zinc 3MO ($)


Source: Bloomberg, 07.05.2021

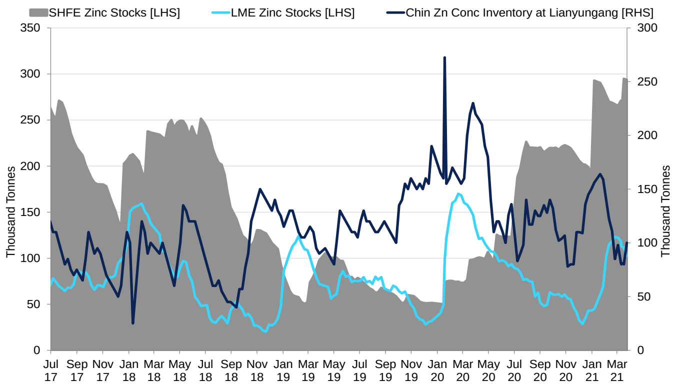
## Summary

**Zinc prices have consolidated recent gains; in the last few weeks, the demand outlook is progressive outside of the auto market. In our opinion, consumption of galvanised steel is expected to remain strong due to the construction sector. Prices of hot-dipped galvanised sheet are near record highs in different regions, increasing costs for users. We have seen premiums improve from Chinese warehouses, outlining a robust demand outlook, and the concentrate tightness could prompt maintenance in the near-term capping output of refined zinc. Profitability for smelters is low, and any further declines in TCs may see some capacity halted. We expect prices to maintain their upward momentum in Q2 2021, with consumption continuing to recover but supply lagging.**

**Q1 Recap:** Zinc prices consolidated in Q1 2021, gaining 2.5% through the 3-months. Prices reached a high of $2,952.50/t, but prices failed to maintain this momentum, and the market closed at $2,818.50/t. Sentiment in the metals market remains positive, with economic data improving in the US and staying strong in China. The dollar has stabilised, acting as a headwind to the flat price, but cash to 3-month spreads have widened to -$21.65/t as of April 16th. In China, SHFE prices mirrored the LME, as the 1st generic zinc contract traded at RMB21,885/t. Demand for metals and zinc remains dislocated, and this has played out in the premiums market; in the US and China's premiums have rallied more strongly than in Europe. LME inventories have rallied so far to 294,800 tonnes, up from 202,000 at the beginning of the year We have seen a similar trend for SHFE deliverable stocks, up 290% YTD, but inventories have fallen marginally from this year's high of 123,000 tonnes.

### LME Inventory vs SHFE vs Zinc Concentrate Stocks at Lianyungang

Concentrate stocks and SHFE stocks are falling, LME inventories remain constant.




Source: Bloomberg

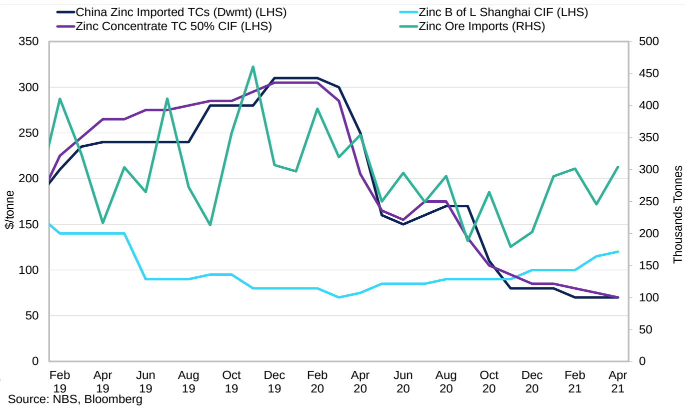
**Outlook:** According to SMM, refined zinc output reached 496,600 tonnes in March, up 5.4% from the previous month and 6.49% y/y. This brings zinc output for Q1 to 1.51m, up 4.3%.. We expect output to improve in the coming weeks and months. Zinc alloy production reached 75,100 tonnes, according to an SMM survey in March, up 5%; the survey indicates that primary zinc output was 390,00 tonnes in March. Despite low availability of zinc or and low TCs for domestic or in China. Profitability for smelters is low. Currently, lower margins are not impacting output in Chinese smelters too much, although production is down 8% from Q4 2020. We still believe output will increase in 2021, but we continue to watch TCs and imports closely. TCS in Inner Mongolia are higher than in other areas of China, at RMB4,300/t as of April 16th; this is compared to Yunnan, where TCs are RMB3,500/t and Guangxi at RMB4,000/t. The domestic concentrate TCs average at RMB3,850/t imported TCs are at $70/t. There is an expectation that TCs will decrease if this is the case, causing some smelters to halt production, which could help to balance the concentrate market. Zinc concentrate stocks at Lianyungang have fallen to 80,000 tonnes as of April 16th; this has fallen from 160,000 tonnes in January, and we expect this trend to continue. TCs will remain under pressure as miners currently benefit, receiving 76% of the zinc price; according to Wood Mackenzie, which will help incentivise production, supporting TCs in the longer run.

Chinese customs data shows that imports in February declined to 269,378 tonnes, down from 410,380 tonnes in January, compared to 324,487 tonnes in December 2020. February and January imports in 2021, which is not an accurate representation, were 297,169 tonnes and 394,973 tonnes, respectively. The low imported TCs will mean smelters will continue to avoid buying imported concentrate where possible, but the tightness in domestic supply remains a concern. Refined zinc imports into China have declined in recent months, after peaking at 64,343 tonnes in October 2020. Imports stood at 37,301 tonnes in February, for the first 2- months of the year, they were down 61% y/y. SHFE inventories are lower than in previous years but stand at 111,663;

we expect the seasonal decline in stocks to start in the coming weeks. This should support Chinese prices. LME inventories have consolidated in recent weeks, but if demand from the auto sectors improves as the shortage of chips subsides, this could prompt stocks to draw. The dislocated nature of the zinc market is due to unsynchronised recovery and supply. Premiums have been supported, zinc warehouse premiums in China have increased to $135/t as of April 19th, suggesting a more robust demand outlook, but some argue it is an efficient market. Bill of lading premiums reached $127.5/t as of April 19th, indicating greater demand.

### Chinese Imported TCs vs Bill of Lading vs Zinc Ore Imports

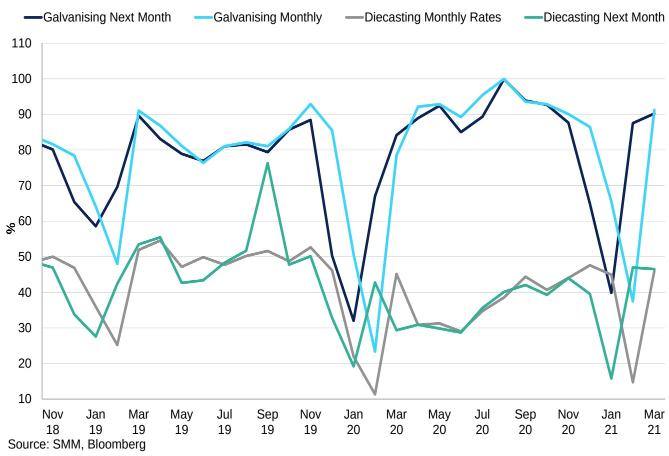
TCs are low and dropping towards 2012 levels; the tightness in the concentrate market will keep them low.




Operation rates at galvanised steel plants have recovered well from the lows of Chinese New Year; rates in March reached 91.24% and is expected to moderate slightly to 90.23% in April. This could cause output to fall; however, galvanised steel sheet prices are elevated in most consuming regions suggesting high margins for galvanisers. China produced 60.6m tonnes of the metallic coated sheet; if we see steel production reduced due to emissions, this could mitigate Chinese steel exports in the years to come. The end-user will have higher costs as sheet prices remain high. Zinc slab production reached 578,900 tonnes in China; this was just shy of 50% of the global output. In the longer run, we could see spillover from the aluminium industry of low-carbon alternatives; Salzgitter has had steel slab and galvanised sheet officially certified as low carbon steel. This technique reduced the carbon footprint by 66% for galvanised sheet.

### Zinc Operation Rates

Galvanising rates are high, and the strong margins will push operation rates to higher levels unless concentrate tightness caps output.



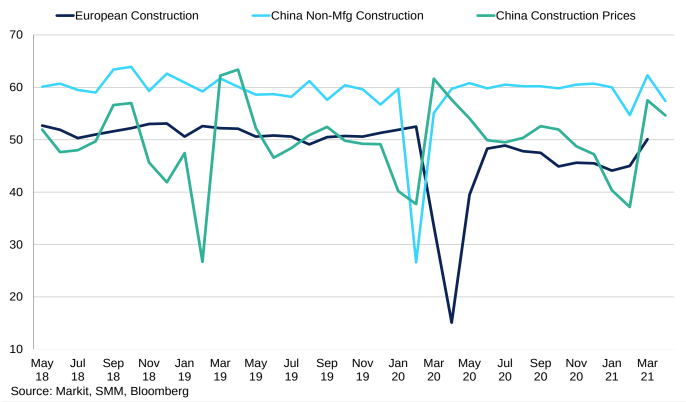

Manufacturing and construction PMIs across the globe have rallied in March, except for China, and we could see this story continue in the coming months. China's construction price index pushed back above 50 to 57.53 in March; this was the first reading above 50 since March 2020.

The non-Mfg construction PMI has been robust throughout this period and reached 62.3, European construction PMI has pushed back above 50 to 50.1, again the first expansionary reading since February 2020. We see demand for galvanised steel to strengthen Europe as the vaccine programme improves and construction starts to pick up. European orders for galvanised steel sheet is predominately for Q3 and Q4, Northern Europe hot-dipped galvanised steel spot ex-work stands at €1,045/t, this is a 106% increase since June 2020, outlining the increase in raw material costs.

Similarly, in China, hot-dipped galvanised steel spot FOT stands at RMB6,380/t, up 56.76% from RMB4,070/t. The expansionary data suggests appetite for galvanised steel will continue to be strong, with prices maintaining their strength. We expect momentum in the construction industry to be maintained, however in the US, construction spending has declined in 2021, and the US Census Bureau indicated a decline in February of 0.8% m/m.

### European Construction vs Chinese Construction

Output Data in Europe has rebounded to the expansionary territory since this reading, and China is also vital.




Demand from the auto sector is weaker due to the shortage of microchips; we do not expect this to change in the near term. Demand for consumer electronics has been significant in the last 14 months due to the WFH economy. Auto companies comprise 10% of the global market; as EV sales continue to gather pace, the demand for chips will increase. The chip shortage is expected to last until at least Q3. In our opinion, zinc demand will continue to improve despite the backlog of orders from the auto sector. The tightness in the long-dated spreads shows tightness in the market; the 3m-27m and 3m to 69m spreads are backwardated compared to the nearby spreads in contango. Prices are consolidating above

$2,800/t; we expect momentum to remain positive due to the tightness in the concentrate market capping output of refined material. Stimulus levels in China are being maintained at the same level as 2020, which should keep demand momentum more robust. However, we remain wary of some tightening of stimulus levels. The PBOC net injections daily are mostly zero and are considerably below January levels; all systems financing rate was higher in March at 3.340trn according to PBOC. Investment funds have maintained their positive sentiment; the current z-score is 1.824 suggesting how many standard deviations the net position is from the mean. Conversely, the commercial position stands at -1.24; the median is 0.089.

# Iron Ore & Steel

### 1st Generic SGX 62% Fe


Source: Source: Bloomberg, 07.05.2021

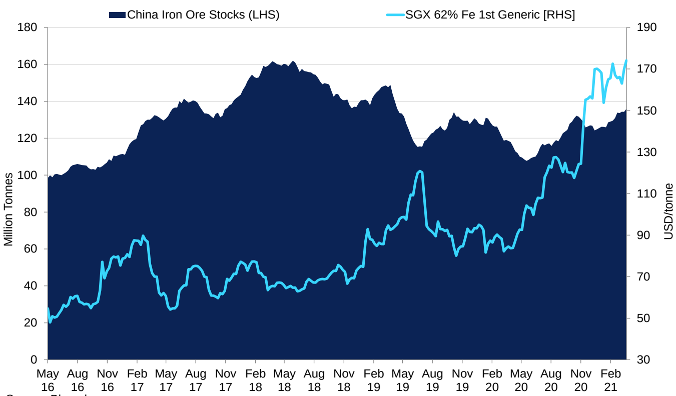
**Summary**

**Downstream demand is robust, outlined by economic data and prices of steel products. The move by China to try and curb steel output has not been successful so far, the new rules will reduce exports, but with mill profitability high, we may see production remain elevated. Premiums for iron ore continue to climb, and the spread between 62% Fe and 65% Fe has widened significantly and is over $35/t. Shipments from Australia are high, and while tensions between China and Australia are high, we do not expect exports of iron ore to stop. In the physical market, prices are high, but the strength from downstream gives mills confidence and profit margins. Iron ore supply is more substantial this year, but demand is robust; we expect prices to break $200/t, our upper range stands at $212/t for July with the lower bound at $175/t.**

**Q1 Recap:** The SGX 1st Generic 62% Fe contract continued to rally, gaining 5% in the three months to April, with prices closing at $167/t. Prices reached $178.5/t, up 12.26% YTD; since the beginning of April, they have been well supported to test $180/t. Stimulus levels in China have been held constant; net repo injections by the PBOC have been predominately held constant for most of 2021, with injections in 2 weeks so far in 2021 and a reduction in February. Steelhome inventories have been rising so far this year at 135.90m tonnes, up 9% YTD. Prices of domestic iron ore gained 3.10% and reached RMB948.64/t; prices have rallied in April to RMB1,165/t, a gain of 26.3% YTD, with prices up 22% in April alone. Rebar prices have continued to rebound this year, gaining 25% YTD to April 27th, but prices gained 12.3% in Q1

### Steelhome China Iron Ore Port Stocks vs SGX 62% Fe 1st Generic

Iron ore prices have been well bid, and we expect this to continue towards $200/t.

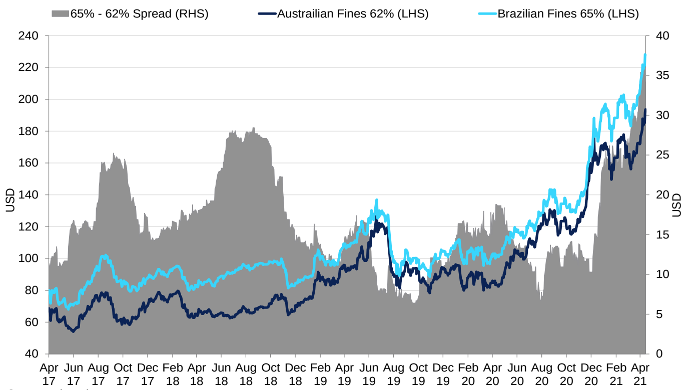



Source: Bloomberg

**Outlook:** Vale's output for Q1 was 68m tonnes, up 14.2% above Q1 2020. For 2020, production was around 300m tonnes; the initial guideline suggests output will reach 350m tonnes in 2021. We believe production will fall short of this around 340m tonnes. The guidance from Vale indicates that output will increase to 400m tonnes in 2022 and 450m tonnes in 2023. BHP and Rio Tinto produced 59.8m tonnes and 76.4m tonnes, respectively. Wet weather in Australia hampered production for Q1 2021, with BHP and Rio Tinto output was flat and down 2%, respectively.

### Australian 62% Fe CFR N.China vs Brazilian 65% Fe CFR N.China

The spread widened significantly as demand for iron ore is robust.



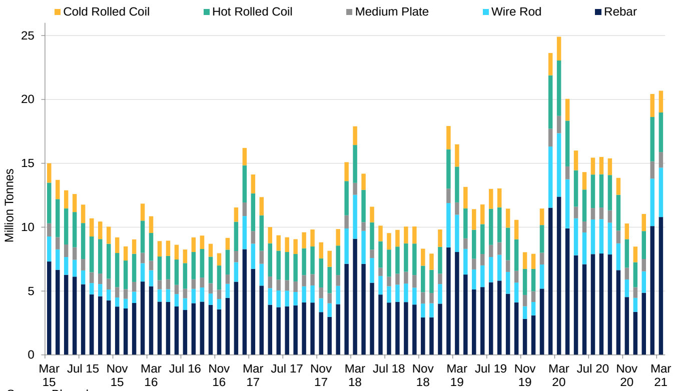

Source: Bloomberg

Despite the worsening relations between Australia and China, shipments of iron ore have remained elevated. Customs data suggests that China imported 61.39m tonnes of iron ore from Australia in March, increasing 9.8m tonnes. The average monthly shipments in Q1 were 55.58m tonnes, down from Q4 2020's average at 58.45m tonnes. Tensions deteriorated following Australia's decision two cancel deals on the Belt and Road Initiative. Having seen Australian exports of metallurgical and steam coal to China fall to near zero in recent months, questions remain what product could be next.

As mentioned before, and using March's exports as a guide, Australia's exports equated to 60.1% of total iron ore imports into China. If the premiums are anything to go by, this will not be the case; Australia's 62% Fe CIF has continued to surge, reaching $194.50/t as of April 27th, up 20% YTD. We expect imports of Australian iron ore to remain strong in the near term, with tariffs on iron ore unlikely at this stage, given China's heavy reliance on the steel market for infrastructure and the property industries. Arrivals of iron ore at Chinese ports declined in 2.4m tonnes in the week to April 27th, a total of 75 vessels delivered 9.91m tonnes of material according to SMM, down 2.4m tonnes from the week prior and 1.3m tonnes y/y. Shipments from Australia increased by 1.95m tonnes w/w to 18.08m tonnes; Brazil deliveries reached 5.51m tonnes up 1.49m tonnes w/w. The Brazil iron ore fines 65% Fe offshore CIF to China have gained 27% YTD to $228/t; this again outlines strong demand from China for high-quality Brazilian fines. This is outlined by the spread between the Australia 62% Fe and Brazilian 65% Fe reaching $34/t. Brazilian exports to China reached 21.02m tonnes in March and slightly declined from February's figure of 21.67m tonnes. Demand for iron ore in China is robust, and we do not envisage this halting in the near term. The PBOC has indicated that stimulus levels will be kept the same in 2021 than 2020, but we are looking for signs of tightening.

### Chinese Finished Steel Inventories

Finished steel inventories show the seasonal inflow of material, high proit margins outline robust production.



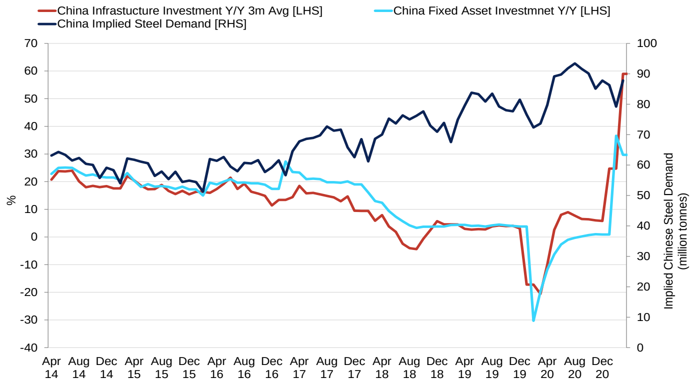
Source: Bloomberg

According to World Steel, crude steel output in Q1 2021 reached 489.6m tonnes, up 13%; in China, production was 271m tonnes, up 15.6%. Chinese output reached 94.02m tonnes in March, which equates to 3.03m tonnes a day. Output at steel mills continues to be elevated despite Beijing's desire to curb production; with this rhetoric now back in focus, steel prices have continued to rally, fueled by speculators. Blast furnace capacity in China remains strong and reached 85% as of April 22nd; in Tangshan, the blast furnace operation rates have edged higher in recent weeks to 70.7% as of April 23rd, significantly below the August 2020 level when operating rates were at 79.32%. Due to production curbs in Tangshan, Handan, and Hebei, output was expected to remain weaker; however, operating rates and profit margins keep mills incentivised. Profit margins for steel are high, and operating income has increased to 8.17% as of March 30th, according to the NBS. Chinese steel exports improved in March, reaching 7.45m tonnes, and up from February when exports were 4.9m tonnes. The export market shows signs of recovery, with exports for Q1 up 23.8% as steel exports in March were the largest since 2017. However, the higher tax on exporters was seen in an attempt to service the domestic market. China removed the VAT rebate on 146 steel products from May 1st; a 13% rebate on HRC, wire rod and rebar will no longer be applicable. The Finance Ministry indicates the reduced cost of importing, expanding the imports of iron and steel resources and putting downward pressure on crude output. In practice, profit margins are high, and we could see high output levels maintained.

High-profit margins for HRC is expected to drive output in April, with an SMM survey indicating production of HRC in China should reach 10.09m tonnes in April, up 2.3% m/m. Production of HRC, plates and domestic sales will expand 0.79% to 9.29m tonnes. According to SMM, most of the output increase was in North and East China, with planned output set to reach 5.17m tonnes and 2.82m tonnes, respectively. Downstream demand is strong, giving mills the confidence to keep producing despite high raw material costs. According to SMM, profits averaged 887yuan/t for HRC in East China.

### China Investment vs Implied Steel Demand

Implied steel demand is high, and investment in infrastructure will remain strong in the near term.



Source: NBS,

Downstream demand continues to be strong, infrastructure investment as a 3-month average gained 58%y/y in March; once again, these figures are distorted due to COVID-19, but the premise remains the same. Fixed asset investment reached 29.7% y/y in March. Industrial production in China improved to 14%y/y Q1 2021, we continue to see restrictions in the property market, but sales of land purchased are recovering to17%y/y in Q1, up from -1% y/y in Q1 2020. Commercial building space under construction was 11% y/y in Q1 2021, but the premise of developers selling units to finance new buildings continues with retail space sold up 64% in Q1 2021, with residential floor space sold up 68% y/y in Q1 2021. LME steel HRC FOB China have trended higher, incessantly, reaching $868/t as of April 29th, up 19.67%. This outlines strong demand in China; this is replicated in the US, with HRC forward prices at $1,368 per short ton as of April 29th. The HRC index FOB mill in the US reached $1,410.60 per short ton on April 21st. However, new capacity in the US could exert some downward pressure on prices in Q4. In the US, and Europe construction is behind the curve, especially in Europe, and the reduced exports from China may increase prices in the ROW due to reduced availability of material. Europe construction confidence is improving but is still negative a -2.7, with order books negative at -7.3 in March, up from -12.3 in February.

# Gold

### Spot Gold $/Oz


Source: Bloomberg, 07.05.2021

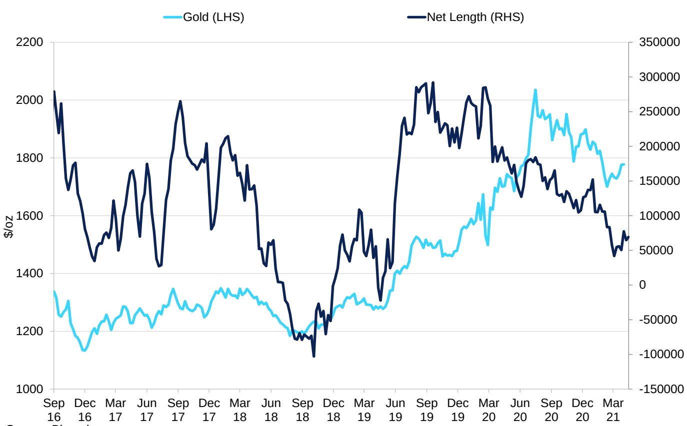
**Summary**

**In 2020 the spread of COVID-19 affected global markets significantly, urging investors towards gold as a safe-haven. Now, the picture has changed, and gold fell by 12% during the quarter as continued vaccination success in the developed economies as well as rising real yields muted gold's attractiveness. Indeed, ETF funds have been in decline since November 2020, especially as investors diverted their funds to cryptocurrencies. There is a potential upside to gold as central banks keep interest rates low, pushing yields back down, however, positive economic and virus-related news are likely to cap gold's performance on the upside.**

**Q1 Recap:** As the first quarter came to an end, gold hasn't enjoyed a great time of it. The precious metal tumbled 12% during the quarter and 19% from its August highs and is back where it was in February of last year before the pandemic hit the world. This was the first quarterly decline since Q1 2018. The gold price has found support at $1,700/oz before picking up higher in April. Continued focus along with increasing confidence in the developed economies vaccination programme, rising bond yields as a result of inflation concerns along with growing confidence in the lifting of economic restrictions were all key influences for gold price moves.

### Gold Investment Funds Net Length vs Spot Gold

Reduced investment demand led to a decline in gold prices in Q1.




Source: Bloomberg

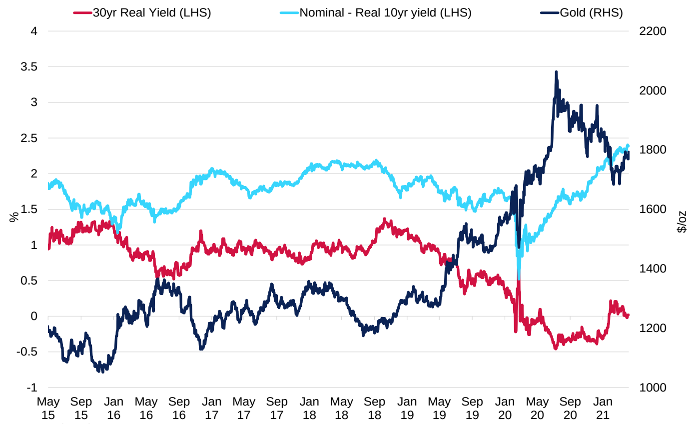
More recently, the price of gold softened after Biden announced a $2tr infrastructure spending plan and the prospect of further stimulus measures further increased expectations of higher inflation. The ETF funds have been on the decline since November 2020, in line with the price decline, as some investors diverted funds to cryptocurrencies. Speculative futures positions on NYMEX have dropped, and ETF holdings have fallen from 106.70m to 99.84m, the lowest since May 2020..

**Outlook:** Inflation expectations have been rising as markets bet on rising numbers of people vaccinated as well as the reopening of the lockdown restrictions. Since gold is an inflation hedge, why has it softened in the recent months? Gold has tracked long-dated real Treasury yields in recent months. Although the metal is regarded as an inflation hedge, it is not tied to its moves as it is to interest rates. In particular, it is more sensitive to real interest rates, not nominal. When yields rise due to concerns of higher long-term inflation, gold, as a non- yielding commodity, is expected to fall. Hence, the price corrected sharply even as markets braced for inflation. Historically, increased fears over inflation have largely been favourable to gold. This time, though, the growth in confidence, especially at the consumer level, and the expectations of a successful outcome from the vaccination programmes have combined to focus investor attention on economic growth prospects; this has boosted longer-term bond yields. All these factors have combined to reduce gold's risk-hedge role and thus put pressure on gold prices.

More recently, the Fed Reserve made no changes to its monetary policy but did raise its GDP forecast and inflation outlook. Rising long-term yields are expected for this stage in the recovery but, if inflation expectations continue to rise, breaching psychological levels, that could prove supportive for the gold price. The lack of any agreement on inflation risk, alongside a weaker dollar, keeps some investors on the fence as policymakers have been downplaying the risks. We see rising inflation to lift the gold price during the third quarter of this year as we start to see economies in full-swing recovery. However, it remains to be seen whether the market will hold on to gold for inflation hedging. Now, central banks are starting to have conversations about tapering bond-buying as a means of reducing support for a recovering economy, which could present some downside risks to gold. In May 2013, when the last tapering was announced, gold did not respond immediately, but nonetheless, it tightened the markets. Gold continued to fall until the end of 2015, reaching $1,046/oz. We would expect the next tapering statements to have a similar impact on gold's price, especially if it is paired with continued economic recovery.

### Gold vs 10yr Nominal - Real vs 30yr Real

Despite inflation and gold's relationship breaking in 2021, we saw real yields edge higher on expectations of a sooner-than-expected interest rate increase from the Fed.

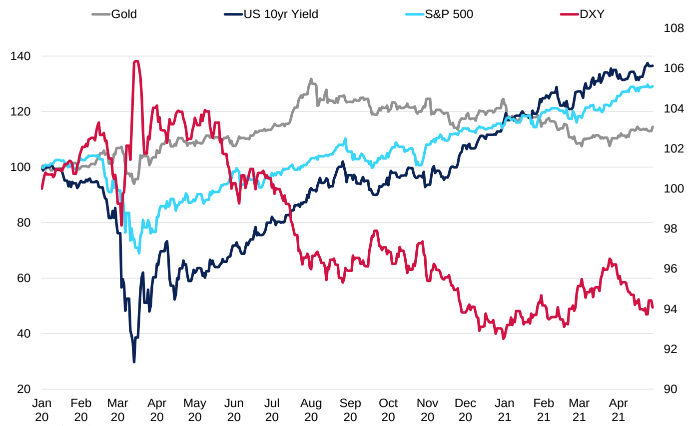


Source: Bloomberg

In April, however, the dollar-gold relationship remained intact, as softer bond yields gave more room for the precious metal to grow. Indeed, despite stocks remaining near record highs, gold gained 7.15% during the month. Likewise, global negative-yielding debt fell in the first two months of the year as the nominal yields rose, pushing some of the shorter-term real yields into positive territory, maintaining a positive relationship with gold. We do not expect yields to rise much further, but they are likely to remain elevated, supporting gold prices in the medium term.

### Gold vs Dollar vs Stocks vs US 10yr Yield

Both gold and US stocks are picking up higher in April, whilst the dollar loses steam.

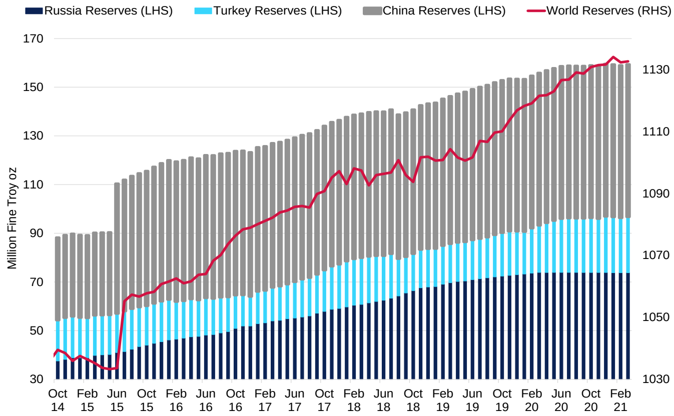


Source: Bloomberg

Swiss gold exports to Asia have gained momentum, rising to multi-year highs, confirming expectations that demand in Asia, particularly India, is improving. Switzerland exported 57.9t of gold to India and 2t to China in February. Meanwhile, in Europe, Hungary tripled its gold reserves in one of the biggest purchases by a central bank in decades – the latest sign of governments turning to precious metals as a safeguard of value. The monetary authority raised its value to 94.5t in March. Additionally, the WGC showed that global central banks were net buyers of gold in February, as they added 8.8t to their gold reserves. Now, with ETFs in a months-long contraction, falling by 8.3% YTD to 98.32m in April, the market is looking elsewhere for support. We believe that central banks will continue to purchase gold for the rest of 2021, but the immediate outlook remains in the balance.

### Central Bank Gold Purchases

Central bank purchases began to gain pace from February.



Source: Bloomberg

Still, a resurgence in virus cases and restrictions on movement and business activity in India is worrying jewellers as it could threaten the revival in sales. Meanwhile, gold demand in China is rebounding. Gold withdrawals from the Shanghai Gold Exchange in March were more than double the volume year-on-year. Withdrawals totalled 168t last month, up 104% y/y but down 23% compared to 2019. Another indicator of recovery in the world's largest gold market is the local gold price, which has been consistently trading at a premium to the international spot price since mid-February. Indeed, jewellery sales during the Chinese New Year were higher than those in 2019 and 2020, and manufacturers and retailers needed to replenish their stocks.

India Rating and Research estimates demand for gold jewellery to increase by 30-35% y/y in 2022, owing to rising demand improving consumer sentiment with the rollout of COVID-19 vaccine. In a more medium-term view, they expect the wedding demand to restore in Q3 2021. Physical prices have fallen by 20% since their peak in August, due to both a fall in spot price and the reduction in import duty and an appreciating rupee, which is incentivising purchases from abroad. Official Indian imports hit a 21-month high of 91t in March, as jewellery and retailers restocked. A selloff in gold ETFs is further eroding support. We have seen on days when rates are down, gold has struggled to gain footing, suggesting that there is little buying interest. The outflows appear to have had a big impact on gold prices.

# Silver

## Spot Silver $/Oz


Source: Bloomberg, 07.05.2021

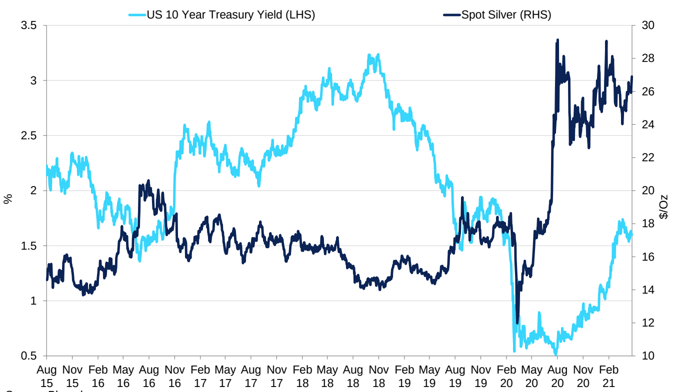
**Summary**

**A similar story to gold; rising real yields and the strengthening dollar have kept silver's price on the back foot, driving the precious metal to test $24.40/oz by the end of March. The Fed reiterated that it expects to maintain the accommodative monetary policy and keep the near- term interest rates very low until at least 2022 to support economic growth. However, as the rollout of vaccinations drives hopes of a global economic and industrial recovery and bond yields rise in response, silver is likely to see another leg up in the upcoming months.**

**Q1 Recap:** As with gold, rising real yields and the strengthening dollar kept silver on the back foot, driving it down to test $24.40/oz by the end of the quarter. After the Reddit-driven frenzy in February, silver prices pulled back in line with the long-term average. More recently, the Fed's accommodative stance in recent weeks has helped cool a rise in Treasury yields that benefitted non-interest-bearing silver. Silver ETF holdings declined from January highs of 1.017bn, however, at a slower pace than gold, as prices traded sideways.

### US 10yr Treasury Yields vs Silver Spot

Silver spot traded sideways so far in 2021, as stronger yields and recovering industrial performance have opposing effects on the metal.




Source: Bloomberg

**Outlook:** Inflation expectations are rising. The US 5yr breakeven inflation rate has moved to its highest level for nearly 10-years at 2.6% and has exceeded the 10yr rate. The last time the 5yr breakeven inflation rate was this high was in 2011, and silver was trading around $48/oz, almost double the current price. With precious metals seen as an efficient hedge against inflation, higher inflation expectations should provide an upside for silver. We believe silver prices are set to continue to outperform gold through 2021 as it benefits from rising inflation and renewed industrial demand as the global economy bounces back from the COVID-19 pandemic.

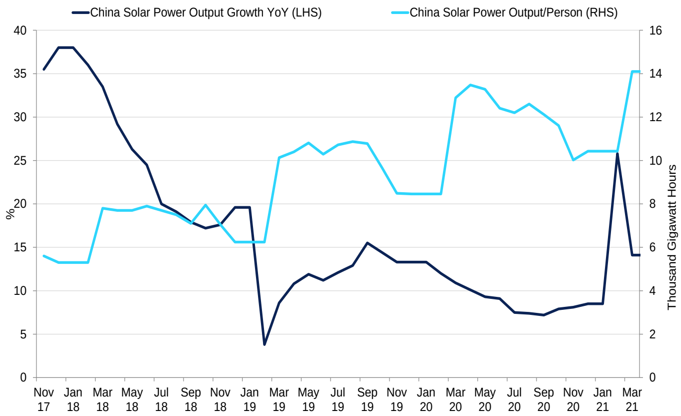
The Fed's accommodative stance in recent weeks has helped cool a rise in Treasury yields that benefitted non-interest-bearing silver. In the short-term, US monetary policy is likely to remain dovish as the Fed said its prepared to tolerate the short-term rise in inflation without the need to combat it. However, not even their reiteration to keep the rates low until 2022 has been enough to keep longer-dated yields down. We think long-dated real yields will rise marginally higher from the current level of 1.61%, putting the silver price under more pressure. If the bond market continues to believe that inflation expectations are rising enough for the Fed to raise the interest rates, silver, just like gold, is likely to fall as a safe haven. If inflation concerns take greater hold and 10-year real yields continue to rise, silver looks at risk of a bear market. But, as in Q3 2020, the emergence from the pandemic matters the most and the resulting effect of it on bond yields.

The outlook for silver in the US is bright with Biden's new infrastructure plan. The president's commitment to accelerate wind and solar deployment is expected to be a key driver in long- term silver demand. An extended investment tax credit schedule and a large project pipeline are anticipated to boost utility-scale installations to 20GW in 2021, according to IHS Markit. Additionally, Congress extended the 26% tax credit for residential and commercial solar projects for two years in December 2020 as part of the $2.3tr spending and coronavirus relief bill. The current extension is expected to drive greater adoption out to 2025.

Indeed, the US's fleet of solar and wind generation capacity is set to almost triple over the next decade, however, this will still not be enough to meet Biden's climate goals to meet the carbon-free target by 2035. Over the next 10 years, in particular, 287GW and 115GW of solar and wind capacity are forecast to be added to the grid. In the latest $2tr plan, he included fiscal benefits for solar and storage developers, such as incentives to develop at least 20GW of high voltage power lines to upgrade the grid. The Department of Energy also announced a $128 million research and development funding package last month that it hopes will bring the cost of generating solar power down 60% by the end of the decade.

### China Solar Power Output and Growth

Output growth jumped by 25.8% in the first two months of the year, 13.8pps higher than 2020 growth.

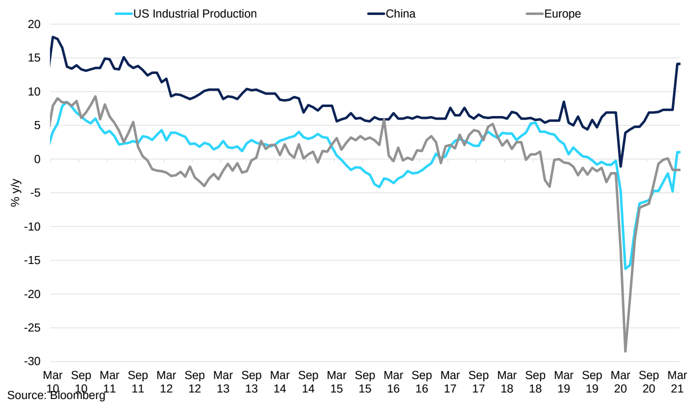



Source: Bloomberg

Strong industrial demand is expected to keep prices supported in the medium term. The US is the second-largest PV market behind China, installing 19.2GW of capacity last year. Global consumption from industrial end-users is forecast to extend to a four-year high of 510moz in 2021, with strong growth coming from the electrical, electronics and PV sectors. PV installation forecasts have been upgraded from 159GW to 181GW in 2021, a 27% y/y increase, owing to support from governmental policy and falling costs. As a result, silver demand from the PV industry is forecast to increase to 105moz in 2021, from an estimated 88moz in 2020, according to The Silver Institute.

### Industrial production Y/Y growth in the US, Europe, and China

While European industrial growth continues to struggle due to the continued impact of lockdown measures, China and the US see new highs.




Source: Bloomberg

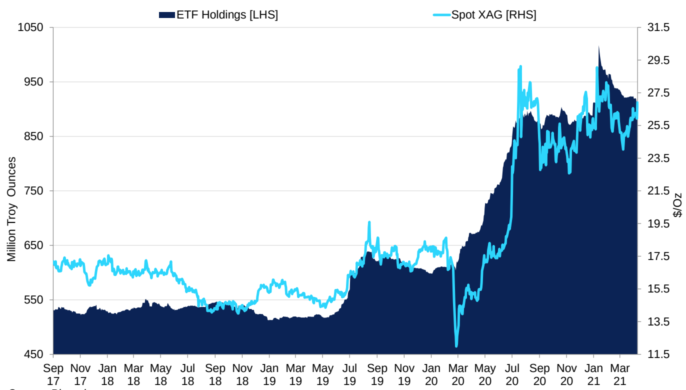
Likewise, in China, industrial production continues to grow, yet at a slower rate than in the US. During January and February, production grew more than anticipated, raising expectations of increased demand for industrial metals, including silver. The index rose by 35.1% y/y, according to the National Bureau of Statistics of China, highlighting the country's recovery from the pandemic. This, of course, could be attributed to the fact that the country started from a low base, but continued growth since April 2020 proves Chinese industrial resilience. Coin demand, however, has been buoyant, and the US mint reported a 20% y/y sales increase of its American Eagle coin in Q1 2021 to 12moz.

Silver has resumed its outperformance of gold in Q1, highlighted by the ratio falling to 75 to 67 from the beginning of the year, and is now favoured to outperform gold if the rally continues. In March, the gold/silver ratio has risen marginally and is now running into resistance just above 70. However, since mid-2020, it has been contracting as the improving industrial outlook has kept silver more resilient than gold. In the meantime, silver's performance seems closely tied to gold. When investment demand is low, silver tends to revert to its industrial character, but over the past quarter, it has followed gold movements more closely. Growing industrial activity has been developing, pushing silver prices higher.

Silver ETF holdings have been holding up better than gold, despite the contraction seen in recent months, as prices traded sideways. Holdings are down from a peak of 1.017bn at the start of January to around 0.921bn (-9.4%) now, and sales momentum is slowing. From the physical side, a considerable amount of silver is stored in London. As of the end of March 2021, there was a record stock of silver held in London vaults, totalling 1,249moz, up 11% m/m. Of the total 1,249moz held in London vaults in March, ETFs accounted for 58%, compared to 35% at the end of 2019. ETF demand is expected to accelerate marginally as the price remains supported by industrial end-users and global economic recovery.

### ETF Holdings vs Silver Spot

Softer investor demand, after the Reddit-driven rally, weakened the metal to test $24/oz once again.




Source: Bloomberg

# Palladium

### Spot Palladium $/Oz


Source: Bloomberg, 07.05.2021

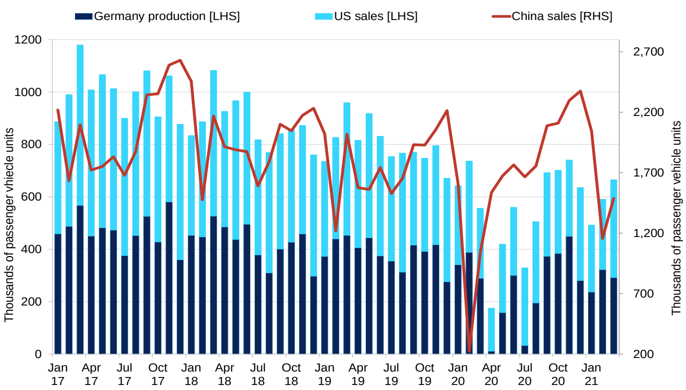
**Summary**

**Palladium prices surged to record highs as investors weighed on the prospects of future supply. Continued growth in demand from the automakers supported the precious metal's industrial demand. In Q1, palladium rallied 40% despite relatively flat ETF holdings. For the quarter ahead, while disruptions in Nornickel's mines seem to be normalising, stricter environmental rules in China and Europe are likely to support automakers demand for lead. The gradual release of lockdown restrictions, as well as a higher propensity to spend, could push auto sales to multi-year highs. The case for another rebound seems more likely in 2021, especially as the metal is forecast to face another deficit.**

**Q1 Recap:** Palladium surged to a new record high of $2,895/oz on supply shortfalls and a rebounding demand from the automakers that is likely to keep the industrial market in a deep deficit. Stricter environmental standards are fuelling automakers demand for the commodity used in vehicles. Additionally, disruptions in Russia have exacerbated supply concerns, even after the world's largest producer has said the recovery is proceeding faster than originally planned. Regardless, in Q1 2021, Nornickel palladium output increased by 40% y/y to 766koz even as two of its biggest Arctic mines fought flooding that forced the Russian mining company to lower annual targets. UBS forecast a deficit of 1moz in 2021, the 10th straight annual shortfall. Investment demand has kept relatively flat, apart from a recent spike in March.

### US, Germany, and China Passenger Vehicle Sales

We see a bounce back in sales and production as auto outlook improves.




Source: Marklines, VDA, CAAM

**Outlook:** China's vehicle sales surged by 74.9% y/y in March for the 12th straight month, as the country continued to recover from the COVID-19 pandemic. Sales reached 2.53m units. The country's industry body expects car sales to increase by 4% this year but has warned that production in Q1 negatively affected by the global semiconductor shortage, with losses estimated at 500,000-550,000 units. Production losses are expected to be recouped by the end of H2. The recovery when chip supply recovers will be profound, and bullish for physical demand. A scenario in which half of the prior stocks are rebuilt over six months would represent about a 5% annualized total demand increase for palladium, and if all prior stocks are rebuilt, 10%. A robust car market combined in the second half of the year with the higher PGM loadings required to meet tightening emissions legislation meant China's autocatalysts palladium demand increased by 7% last year, to 2.4moz.

For 2021, the trend changes, and the use of PGM in light-duty applications in China is expected to be flat to slightly down this year, despite an improvement in passenger car output and the full, nationwide enforcement of the first phase of China 6 legislation. The rising prices of palladium encouraged sustained efforts to reduce the PGM content of Chinese gasoline vehicles, mostly through thrifting. JM expects that thrifting activities are likely to lead to a decline of at least 5% in PGM loadings on Chinese cars in 2021. In Europe and the US, however, they expect to see double-digit growth, although the volumes are unlikely to return to the pre-pandemic levels.

In Western Europe, registrations of new passenger vehicle sales declined by 30% in the first two months of 2021, as lockdown restrictions continued to weigh heavily on demand.According to LMC Automotive, the 2021 sales forecast has already been lowered by 100,000 units since the start of the year, owing to weak ongoing restrictions. The slow rollout of the vaccines relative to other developed regions also complicates recovery. Additional complications from semiconductor shortages are likely to continue in Q2 2021.

The supply of both PGMs is expected to recover this year, in line with the global economic growth pick up; however, palladium supply is forecast to be slower than platinum. Mine disruptions in Nornickel have added to supply concerns. However, as both supply and demand factors move in tandem, palladium markets should remain in deficit.

# Platinum

### Spot Platinum
### $/Oz


Source: Bloomberg, 07.05.2021

### Summary

**Platinum outperformed all other precious metals, up 26% up to its peak in February, with prices finding resistance at $1,275/oz by the end of the quarter. Expectations of strong industrial recovery, as well as platinum's discount to its sister palladium, should continue to influence prices, with auto industry recovery supporting industrial demand on the downside. From the supply side, mine output might see a leg up as it recovers from the pandemic-related disruptions, possibly creating an industrial surplus by the end of the year. With gold and palladium both setting new record highs, platinum has been regarded as a good-value, low- risk alternative for investors seeking exposure to precious metals.**

**Q1 Recap:** The platinum price consolidated in Q1 2021 after the sharp rally seen in February on the back of expectations of a strong recovery in industrial demand, as well as its large discount to palladium. Year to date, platinum outperformed its precious peers after falling behind for most of 2020. The outlook improved on the back of a positive demand outlook, especially in the hydrogen economy sector, as well outages in South Africa. Additionally, investment demand has been marginally supportive.

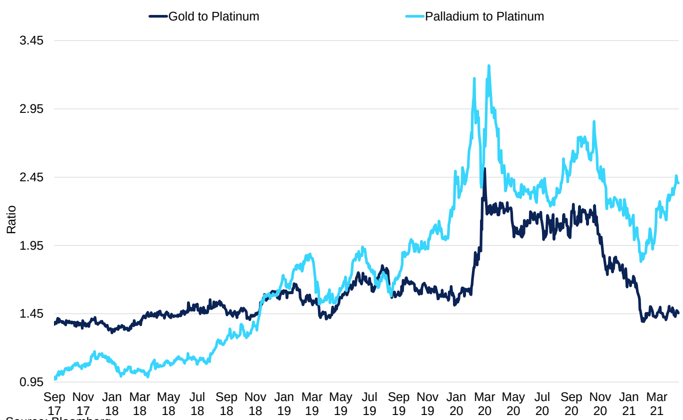
**Outlook:** Tightening emissions legislation for heavy-duty vehicles continues to support platinum demand, as India and China bring their tailpipe standards into line with other global markets. BS VI standards were implemented across India in April 2020, while China VI standards have been rolled out and will apply across the country from July 2021. Globally, medium- and heavy-duty trucks accounted for 25% or 550koz of platinum autocatalyst demand in 2020. For 2021, autocatalyst demand is set for a strong rebound, growing by more than 30% to 2.8moz this year. The outlook for Europe is less positive as the full-year sales forecasts for light-duty vehicles have been revised downward to 12m units.

Platinum mine supply and scrap volume may increase in 2021, potentially reversing the 20% decline seen in 2020. Global supply may rise by 17% to 7.9moz, according to WPIC. The platinum market is well supplied, but prospects of improving fundamentals from the demand side could support prices in the near term. The industrial surplus is forecast to remain in excess of 1moz in 2021; however, is forecast to narrow in the next couple of years. Substitutions of palladium in gasoline catalysts, especially in the US and China, could spur long-term demand. Indeed, according to JM, platinum's share of autocatalyst PGM consumption is likely to increase to 21%.

Russian supply disruptions have had little impact on the platinum market due to the company's small production share; however, Nornickel reduced its 2021 PGM production guidance by 710koz, including 130koz coming from platinum. The direction of the market balance will largely depend on jewellery demand and investors. We saw some improvement in the Chinese jewellery market in late 2020; however, it is not yet clear whether this can be sustained. South African supplies will be boosted by the refining of backlogs following Anglo converter outages in 2020.

### Gold and Palladium to Platinum

Platinum's discount to other precious metals makes it an attractive investment.




Source: Bloomberg

From the investor side, platinum holdings have grown by over 2moz over the past two years. Of this, an estimated 600koz was in platinum bars and coins, particularly in Japan, where low yen-denominated prices stimulated unusually strong purchasing during the first half of 2020. With gold and palladium both setting new record highs, platinum has been regarded as a good-value, low-risk alternative for investors seeking exposure to precious metals. However, there may be potential for further buying in response to platinum's large discount to other precious metals and the prospect of additional use in autocatalysts. If investment falls significantly below 2019–2020 levels, the platinum market could move back into balance or even into surplus.

# Appendix

# Global

## Global Manufacturing PMI

Source: Bloomberg

| Date | USA (Markit) | China (Caixin) | Eurozone (Markit) | Japan (Nikkei) | Emerging Markets |
|---|---|---|---|---|---|
| Dec-2017 | 55.10 | 51.50 | 60.60 | 54.00 | 52.20 |
| Jan-2018 | 55.50 | 51.50 | 59.60 | 54.80 | 51.90 |
| Feb-2018 | 55.30 | 51.60 | 58.60 | 54.10 | 51.90 |
| Mar-2018 | 55.60 | 51.00 | 56.60 | 53.10 | 51.30 |
| Apr-2018 | 56.50 | 51.10 | 56.20 | 53.80 | 51.30 |
| May-2018 | 56.40 | 51.10 | 55.50 | 52.80 | 51.10 |
| Jun-2018 | 55.40 | 51.00 | 54.90 | 53.00 | 51.20 |
| Jul-2018 | 55.30 | 50.80 | 55.10 | 52.30 | 51.00 |
| Aug-2018 | 54.70 | 50.60 | 54.60 | 52.50 | 50.80 |
| Sep-2018 | 55.60 | 50.00 | 53.20 | 52.50 | 50.30 |
| Oct-2018 | 55.70 | 50.10 | 52.00 | 52.90 | 50.50 |
| Nov-2018 | 55.30 | 50.20 | 51.80 | 52.20 | 50.80 |
| Dec-2018 | 53.80 | 49.70 | 51.40 | 52.60 | 50.30 |
| Jan-2019 | 54.90 | 48.30 | 50.50 | 50.30 | 49.50 |
| Feb-2019 | 53.00 | 49.90 | 49.30 | 48.90 | 50.60 |
| Mar-2019 | 52.40 | 50.80 | 47.50 | 49.20 | 51.00 |
| Apr-2019 | 52.60 | 50.20 | 47.90 | 50.20 | 50.50 |
| May-2019 | 50.50 | 50.20 | 47.70 | 49.80 | 50.40 |
| Jun-2019 | 50.60 | 49.40 | 47.60 | 49.30 | 49.90 |
| Jul-2019 | 50.40 | 49.90 | 46.50 | 49.40 | 50.10 |
| Aug-2019 | 50.30 | 50.40 | 47.00 | 49.30 | 50.40 |
| Sep-2019 | 51.10 | 51.40 | 45.70 | 48.90 | 51.00 |
| Oct-2019 | 51.30 | 51.70 | 45.90 | 48.40 | 51.00 |
| Nov-2019 | 52.60 | 51.80 | 46.90 | 48.90 | 51.10 |
| Dec-2019 | 52.40 | 51.50 | 46.30 | 48.40 | 51.00 |
| Jan-2020 | 51.90 | 51.10 | 47.90 | 48.80 | 51.00 |
| Feb-2020 | 50.70 | 40.30 | 49.20 | 47.80 | 44.60 |
| Mar-2020 | 48.50 | 50.10 | 44.50 | 44.80 | 49.00 |
| Apr-2020 | 36.10 | 49.40 | 33.40 | 41.90 | 42.70 |
| May-2020 | 39.80 | 50.70 | 39.40 | 38.40 | 45.40 |
| Jun-2020 | 49.80 | 51.20 | 47.40 | 40.10 | 49.60 |
| Jul-2020 | 50.90 | 52.80 | 51.80 | 45.20 | 51.40 |
| Aug-2020 | 531.00 | 53.10 | 51.70 | 47.20 | 52.50 |
| Sep-2020 | 53.20 | 53.00 | 53.70 | 47.70 | 52.80 |
| Oct-2020 | 53.40 | 53.60 | 54.80 | 48.70 | 53.40 |
| Nov-2020 | 56.70 | 54.90 | 53.80 | 49.00 | 53.90 |
| Dec-2020 | 57.10 | 53.00 | 55.20 | 50.00 | 52.80 |
| Jan-2021 | 59.20 | 51.50 | 54.80 | 49.80 | 52.10 |
| Feb-2021 | 58.60 | 50.90 | 57.90 | 51.40 | 51.50 |
| Mar-2021 | 59.10 | 50.60 | 62.50 | 52.70 | 51.30 |
| Apr-2021 | 60.60 | 51.90 | 63.30 | 53.60 | 52.20 |

# Aluminium

## Price Forecasts and China Quarterly Supply/Demand Balance (kt)

Source: Wood Mackenzie

| Year | Quarter | Production | Consumption | Balance | Stocks Days Cons | SHFE Cash Price $/tonne |
|---|---|---|---|---|---|---|
| 2018 | Q1 | 8965 | 7535 | 1430 | 101 | 2247 |
| | Q2 | 9087 | 9275 | -188 | 81 | 2271 |
| | Q3 | 9206 | 9412 | -207 | 79 | 2112 |
| | Q4 | 9134 | 10137 | -1004 | 64 | 2003 |
| | Total/Average | 36392 | 36359 | 33 | 67 | 2154 |
| 2019 | Q1 | 8806 | 7653 | 1152 | 92 | 2002 |
| | Q2 | 8941 | 9436 | -496 | 71 | 2055 |
| | Q3 | 8884 | 9566 | -682 | 64 | 2005 |
| | Q4 | 8806 | 10287 | -1480 | 46 | 1992 |
| | Total/Average | 35437 | 36942 | -1505 | 48 | 2014 |
| 2020 | Q1 | 8868 | 7733 | 1134 | 70 | 1909 |
| | Q2 | 8911 | 9680 | -769 | 49 | 1821 |
| | Q3 | 9436 | 9943 | -507 | 44 | 2100 |
| | Q4 | 9789 | 10553 | -764 | 35 | 2360 |
| | Total/Average | 37004 | 37909 | -905 | 58 | 2044 |
| 2021 | Q1 | 9582 | 8160 | 1421 | 82 | 2506 |
| | Q2 | 9818 | 10106 | -289 | 65 | |
| | Q3 | 10043 | 10294 | -252 | 62 | |
| | Q4 | 10183 | 11027 | -844 | 51 | |
| | Total/Average | 39625 | 39588 | 36 | 56 | |
| 2022 | Q1 | 10114 | 8464 | 1650 | 82 | |
| | Q2 | 10336 | 10482 | -147 | 65 | |
| | Q3 | 10484 | 10677 | -194 | 63 | |
| | Q4 | 10502 | 11437 | -936 | 52 | |
| | Total/Average | 41435 | 41061 | 374 | 54 | |
| 2023 | Q1 | 10480 | 8787 | 1694 | 79 | |
| | Q2 | 10670 | 10904 | -234 | 63 | |
| | Q3 | 10811 | 11120 | -310 | 59 | |
| | Q4 | 10811 | 11890 | -1080 | 47 | |
| | Total/Average | 42772 | 42701 | 71 | 52 | |

## Aluminium Forecasts

Source: Wood Mackenzie

| Global (Mt) | 2018 | % | 2019 | % | 2020 | % | 2021 | % | 2022 | % | 2023 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alumina Production (SGA) | 121.6 | -0.3% | 123.1 | 1.2% | 125.3 | 1.8% | 133.8 | 6.8% | 139.2 | 4.0% | 142.1 | 2.1% |
| Aluminium Production | 64.0 | 1.3% | 63.4 | -1.0% | 65.0 | 2.6% | 69.3 | 6.5% | 72.2 | 4.3% | 73.6 | 1.9% |
| Consumption | 65.3 | 3.6% | 65.7 | 0.6% | 64.1 | -2.5% | 67.8 | 5.7% | 70.6 | 4.1% | 73.1 | 3.5% |
| Metal Market Balance | -1.3 | | -2.3 | | 0.9 | | 1.5 | | 1.7 | | 0.5 | |
| Stock Days of Consumption | 91.8 | | 78.3 | | 85.6 | | 89.3 | | 94.4 | | 93.9 | |
| Alumina Market Balance | -1.3 | | -2.3 | | 0.9 | | 1.5 | | 1.7 | | 0.5 | |
| Stock Days of Requirement | 91.8 | | 78.3 | | 85.6 | | 89.3 | | 94.4 | | 93.9 | |
| **Prices** | | | | | | | | | | | | |
| Cash Aluminium ($/t) | 2110 | | 1791 | | 1702 | | 2241 | | 2143 | | 2011 | |
| (c/lb) | 96 | | 81 | | 77 | | 102 | | 97 | | 91 | |
| Spot Alumina ($/t) | 474 | | 332 | | 270 | | 305 | | 320 | | 320 | |

## Price Forecasts and World Quarterly Supply/Demand Balance (kt)

Source: Wood Mackenzie

| Year | Quarter | Production | Consumption | Balance | Stocks Days Cons | LME Cash Price $/tonne |
|---|---|---|---|---|---|---|
| 2018 | Q1 | 15777 | 14721 | 1055 | 115 | 2158 |
| | Q2 | 15958 | 16795 | -837 | 97 | 2259 |
| | Q3 | 16172 | 16676 | -505 | 96 | 2055 |
| | Q4 | 16094 | 17137 | -1044 | 88 | 1967 |
| | Total/Average | 64000 | 65330 | -1330 | 92 | 2110 |
| 2019 | Q1 | 15666 | 14805 | 861 | 105 | 1859 |
| | Q2 | 15886 | 16908 | -1022 | 87 | 1792 |
| | Q3 | 15939 | 16783 | -845 | 83 | 1761 |
| | Q4 | 15897 | 17230 | -1333 | 74 | 1754 |
| | Total/Average | 63388 | 65727 | -2339 | 78 | 1791 |
| 2020 | Q1 | 15870 | 14283 | 1586 | 99 | 1689 |
| | Q2 | 15818 | 15968 | -149 | 88 | 1494 |
| | Q3 | 16412 | 16755 | -343 | 82 | 1706 |
| | Q4 | 16941 | 17102 | -161 | 79 | 1918 |
| | Total/Average | 65041 | 64108 | 933 | 86 | 1702 |
| 2021 | Q1 | 16745 | 15170 | 1576 | 99 | 2092 |
| | Q2 | 17174 | 17234 | -60 | 86 | 2313 |
| | Q3 | 17583 | 17444 | 139 | 86 | 2300 |
| | Q4 | 17796 | 17908 | -112 | 83 | 2260 |
| | Total/Average | 69298 | 67756 | 1542 | 89 | 2241 |
| 2022 | Q1 | 17598 | 15806 | 1792 | 105 | 2200 |
| | Q2 | 17931 | 17949 | -17 | 92 | 2150 |
| | Q3 | 18190 | 18166 | 24 | 91 | 2120 |
| | Q4 | 18225 | 18645 | -420 | 87 | 2100 |
| | Total/Average | 71944 | 70565 | 1379 | 94 | 2143 |
| 2023 | Q1 | 17958 | 16348 | 1611 | 109 | 2040 |
| | Q2 | 18255 | 18519 | -264 | 95 | 2005 |
| | Q3 | 18503 | 18856 | -353 | 92 | 2000 |
| | Q4 | 18538 | 19332 | -795 | 86 | 2000 |
| | Total/Average | 73255 | 73056 | 199 | 94 | 2011 |

# Copper

## Copper Forecasts

Source: Wood Mackenzie

| Global (kt) | 2020 | % | 2021 | % | 2022 | % | 2023 | % |
|---|---|---|---|---|---|---|---|---|
| Total Mine Production | 20858 | -0.4 | 21100 | 1.2 | 22419 | 6.2 | 23536 | 5.0 |
| Total Smelter Production | 20177 | 2.6 | 20553 | 1.9 | 21791 | 6.0 | 22811 | 4.7 |
| Refined Production | 23831 | 1.2 | 23878 | 0.2 | 25252 | 5.8 | 26322 | 4.2 |
| Consumption | 23511 | -0.7 | 24113 | 2.6 | 24939 | 3.4 | 25692 | 3.0 |
| Concentrate Stock Change | -310 | | 50 | | 100 | | 200 | |
| Metal Market Balance | 320 | | -235 | | 313 | | 630 | |
| Metal Stocks - Days of Cons | 69 | | 64 | | 66 | | 73 | |
| **Prices** | | | | | | | | |
| Cash LME Price ($/t) | 6181 | | 9013 | | 8275 | | 7450 | |
| (c/lb) | 280 | | 409 | | 375 | | 338 | |
| Contract TC/RCs (c/lb excl pp) for 30% Cu Conc | 16 | | 15 | | 19 | | 20 | |
| Contract Blister Europe ($/t) | 128 | | 145 | | 170 | | 185 | |

## Copper Concentrate Market TC/RCs

Source: Wood Mackenzie

| | Asia Term Contracts (Benchmark) | | | Far East Spot Market (CIF Asia) Miner Selling Terms to Merchants | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2018 | 2019 | 2020 | 2021 | 2021 | | |
| | Ave | Ave | Ave | Ave | Ave | Ave | Q1 | Feb | Mar | Apr |
| T/C ($/tonne Conc.) | 80.80 | 62.00 | 59.50 | 76 | 52 | 44 | 27 | 28 | 21 | 12 |
| R/C (c/lb Cu) | 8.08 | 6.20 | 5.95 | 7.6 | 5.2 | 4.4 | 2.7 | 2.8 | 2.1 | 1.2 |
| PP (c/lb Cu) | | | | | | | | | | |
| Combined (c/lb) + | 23.35 | 17.92 | 17.20 | 22.0 | 15.1 | 12.6 | 7.8 | 8.1 | 6.1 | 3.5 |
| Combined (c/lb) # | 20.72 | 15.90 | 15.26 | 19.5 | 13.4 | 11.2 | 6.9 | 7.2 | 5.4 | 3.1 |
| | | | | **Chinese smelter buying terms (CIF basis)** | | | | | | |
| | | | | 2018 | 2019 | 2020 | 2021 | 2021 | | |
| | | | | Ave | Ave | Ave | Q1 | Feb | Mar | Apr |
| T/C ($/tonne Conc.) | | | | 85 | 65 | 55 | 39 | 38 | 32 | 30 |
| R/C (c/lb Cu) | | | | 8.5 | 6.5 | 5.5 | 3.9 | 3.8 | 3.2 | 3.0 |
| PP (c/lb Cu) | | | | | | | | | | |
| Combined (c/lb) + | | | | 24.6 | 18.7 | 15.8 | 11.3 | 11.0 | 9.2 | 8.7 |
| Combined (c/lb) # | | | | 21.8 | 16.6 | 14.1 | 10.0 | 9.7 | 8.2 | 7.7 |
| + For a 25% copper concentrate | | | | | | | | | | |
| # For a 30% copper concentrate | | | | | | | | | | |

## Price Forecasts & Quarterly Supply/Demand Balance

Source: Wood Mackenzie

| Year | Quarter | Refined Production | Refined Consumption | Balance | Metal Stocks Days of Cons | Cash Price $/tonne | c/lb |
|---|---|---|---|---|---|---|---|
| 2020 | Q1 | 5815 | 5073 | 742 | 76 | 5636 | 256 |
| | Q2 | 5872 | 5921 | -49 | 75 | 5356 | 243 |
| | Q3 | 5976 | 6210 | -234 | 71 | 6519 | 296 |
| | Q4 | 6169 | 6308 | -139 | 69 | 7166 | 325 |
| | Total/Avg | 23831 | 23511 | 320 | 69 | 6181 | 280 |
| 2021 | Q1 | 5884 | 5246 | 638 | 77 | 8504 | 386 |
| | Q2 | 5953 | 6039 | -86 | 76 | 9350 | 424 |
| | Q3 | 6020 | 6376 | -357 | 70 | 9200 | 417 |
| | Q4 | 6021 | 6452 | -431 | 64 | 9000 | 408 |
| | Total/Avg | 23878 | 24113 | -235 | 64 | 9013 | 409 |
| 2022 | Q1 | 6303 | 5452 | 852 | 74 | 8500 | 386 |
| | Q2 | 6306 | 6181 | 125 | 76 | 8400 | 381 |
| | Q3 | 6317 | 6580 | -262 | 72 | 8200 | 372 |
| | Q4 | 6325 | 6726 | -401 | 66 | 8000 | 363 |
| | Total/Avg | 25252 | 24939 | 313 | 66 | 8275 | 375 |
| 2023 | Q1 | 6581 | 5623 | 958 | 78 | 7800 | 354 |
| | Q2 | 6581 | 6296 | 285 | 82 | 7600 | 345 |
| | Q3 | 6581 | 6759 | -179 | 79 | 7400 | 336 |
| | Q4 | 6581 | 7014 | -434 | 73 | 7000 | 318 |
| | Total/Avg | 26322 | 25692 | 630 | 73 | 7450 | 338 |

# Lead

## Global Quarterly Supply/Demand Balance And Price Forecasts

Source: Wood Mackenzie

| | | Refined Prod'n | Cons'n | Balance | Stock Days | $/tonne | c/lb |
|---|---|---|---|---|---|---|---|
| 2020 | Q1 | 2945 | 2648 | 297 | 56 | 1847 | 84 |
| | Q2 | 3135 | 3108 | 27 | 48 | 1670 | 76 |
| | Q3 | 3208 | 3340 | -132 | 41 | 1876 | 85 |
| | Q4 | 3294 | 3359 | -64 | 39 | 1903 | 86 |
| | Total/Avg | 12582 | 12454 | 128 | 43 | 1824 | 83 |
| 2021 | Q1 | 3054 | 2944 | 110 | 48 | 2020 | 92 |
| | Q2 | 3251 | 3312 | -61 | 41 | 1968 | 89 |
| | Q3 | 3329 | 3275 | 53 | 43 | 1960 | 89 |
| | Q4 | 3418 | 3408 | 9 | 42 | 1970 | 89 |
| | Total/Avg | 13052 | 12940 | 112 | 45 | 1980 | 90 |
| 2022 | Q1 | 3123 | 3019 | 104 | 50 | 2000 | 91 |
| | Q2 | 3326 | 3403 | -78 | 42 | 1975 | 90 |
| | Q3 | 3405 | 3367 | 37 | 44 | 1950 | 88 |
| | Q4 | 3494 | 3505 | -12 | 42 | 2000 | 91 |
| | Total/Avg | 13347 | 13295 | 52 | 45 | 1981 | 90 |
| 2023 | Q1 | 3173 | 3061 | 112 | 51 | 2010 | 91 |
| | Q2 | 3380 | 3452 | -73 | 44 | 1995 | 90 |
| | Q3 | 3458 | 3417 | 41 | 45 | 1990 | 90 |
| | Q4 | 3547 | 3557 | -10 | 43 | 2020 | 92 |
| | Total/Avg | 13557 | 3107 | 70 | 200 | 2004 | 91 |

## Lead Forecasts

Source: Wood Mackenzie

| Global (kt) | 2020 | % | 2021 | % | 2022 | % | 2023 | % |
|---|---|---|---|---|---|---|---|---|
| Mine production | 4288 | -7.8 | 4404 | 2.7 | 4535 | 3.0 | 4512 | -0.5 |
| Refined production | 12582 | -3.0 | 13052 | 3.7 | 13347 | 2.3 | 13557 | 1.6 |
| Consumption | 12454 | -3.4 | 12940 | 3.9 | 13295 | 2.7 | 13487 | 1.4 |
| | | | | | | | | |
| Concentrate balance | -134 | | -60 | | 18 | | 10 | |
| In days of requirement | 35 | | 30 | | 31 | | 32 | |
| | | | | | | | | |
| Refined market balance | 128 | | 112 | | 52 | | 70 | |
| In days of requirement | 43 | | 45 | | 45 | | 46 | |
| | | | | | | | | |
| **Prices** | | | | | | | | |
| Cash LME Price ($/t) | 1824 | | 1980 | | 1981 | | 2004 | |
| (c/lb) | 82.7 | | 89.8 | | 89.9 | | 90.9 | |
| | | | | | | | | |
| Realised TCs ($/t conc) | 180 | | 140 | | 154 | | 157 | |

# Nickel

## Global Nickel Quarterly Supply/Demand Balance - (kt)

Source: Wood Mackenzie

| | | Refined Supplies | Refined Consumption | Balance | Cash Price $/tonne | c/lb | Stocks kt | Days of Cons |
|---|---|---|---|---|---|---|---|---|
| 2020 | Q1 | 633 | 543 | 90 | 12720 | 577 | 1398 | 232 |
| | Q2 | 639 | 571 | 68 | 12197 | 553 | 1465 | 234 |
| | Q3 | 641 | 634 | 6 | 14231 | 646 | 1472 | 213 |
| | Q4 | 650 | 639 | 11 | 15941 | 723 | 1482 | 214 |
| | Total/Avg | 2562 | 2387 | 175 | 13772 | 625 | | |
| 2021 | Q1 | 670 | 643 | 26 | 17625 | 799 | 1509 | 211 |
| | Q2 | 688 | 673 | 16 | 16390 | 743 | 1524 | 206 |
| | Q3 | 692 | 673 | 19 | 16241 | 737 | 1543 | 211 |
| | Q4 | 722 | 686 | 36 | 15763 | 715 | 1580 | 212 |
| | Total/Avg | 2772 | 2675 | 97 | 16505 | 749 | | |
| 2022 | Q1 | 728 | 672 | 55 | 16461 | 747 | 1635 | 219 |
| | Q2 | 745 | 716 | 29 | 16351 | 742 | 1664 | 212 |
| | Q3 | 755 | 722 | 33 | 15285 | 693 | 1697 | 216 |
| | Q4 | 752 | 737 | 15 | 15065 | 683 | 1713 | 214 |
| | Total/Avg | 2980 | 2847 | 133 | 15791 | 716 | | |
| 2023 | Q1 | 790 | 707 | 83 | 14661 | 665 | 1796 | 229 |
| | Q2 | 794 | 742 | 53 | 15175 | 688 | 1849 | 224 |
| | Q3 | 795 | 751 | 44 | 14661 | 665 | 1893 | 227 |
| | Q4 | 779 | 764 | 15 | 15065 | 683 | 1908 | 225 |
| | Total/Avg | 3159 | 2963 | 195 | 14890 | 675 | | |

## Nickel Forecasts

Source: Wood Mackenzie

| Global (kt) | | 2209 | | 2021 | | 2022 | | 2023 |
|---|---|---|---|---|---|---|---|---|
| Mine Production | 2657 | 5.1% | 2877 | 8.3% | 3220 | 11.9% | 3443 | 6.9% |
| Smelter Production | 2539 | 6.0% | 2711 | 6.7% | 2928 | 8.0% | 3088 | 5.5% |
| Refined Production | 2562 | 5.2% | 2772 | 8.2% | 2980 | 7.5% | 3159 | 6.0% |
| Consumption | 2387 | -1.5% | 2675 | 12.1% | 2847 | 6.4% | 2963 | 4.1% |
| | | | | | | | | |
| Market Balance | 175 | | 97 | | 133 | | 195 | |
| **Cash LME price** | | | | | | | | |
| ($/t - Current) | 13772 | | 16505 | | 15791 | | 14890 | |
| (c/lb - Current) | 625 | | 749 | | 716 | | 675 | |

# Tin

## ICDX & LME Tin Price

Source: LME, ICDX

| | ICDX | LME Cash | LME premium to ICDX |
|---|---|---|---|
| 03-Oct-17 | 20700 | 20954 | 254 |
| 01-Nov-17 | 19650 | 19535 | -115 |
| 04-Dec-17 | 19600 | 19582 | -18 |
| 02-Jan-18 | 20100 | 20112 | 12 |
| 01-Feb-18 | 21820 | 21550 | -270 |
| 01-Mar-18 | 21800 | 21755 | -45 |
| 02-Apr-18 | 21100 | 21252 | 152 |
| 01-May-18 | 21375 | 21340 | -35 |
| 01-Jun-18 | 20800 | 20795 | -5 |
| 02-Jul-18 | 19850 | 19825 | -25 |
| 01-Aug-18 | 20100 | 19925 | -175 |
| 03-Sep-18 | 19200 | 18895 | -305 |
| 01-Oct-18 | 19150 | 18970 | -180 |
| 01-Nov-18 | 19180 | 19115 | -65 |
| 03-Dec-18 | 18690 | 18871 | 181 |
| 02-Jan-19 | 19525 | 19508 | -17 |
| 01-Feb-19 | 20750 | 20985 | 235 |
| 01-Mar-19 | 21790 | 21710 | -80 |
| 04-Apr-19 | 21515 | 21524 | 9 |
| 02-May-19 | 19685 | 19639 | -46 |
| 03-Jun-19 | 18770 | 19350 | 580 |
| 01-Jul-19 | 18840 | 18890 | 50 |
| 02-Aug-19 | 17280 | 16971 | -309 |
| 02-Sep-19 | 15775 | 16812 | 1037 |
| 01-Oct-19 | 16030 | 16228 | 198 |
| 04-Nov-19 | 16515 | 16398 | -117 |
| 04-Dec-19 | 16750 | 16772 | 22 |
| 03-Jan-20 | 17120 | 16801 | -319 |
| 04-Feb-20 | 16250 | 16337 | 87 |
| 03-Mar-20 | 16225 | 16741 | 516 |
| 01-Apr-20 | 14225 | 14411 | 186 |
| 04-May-20 | 14980 | 15193 | 213 |
| 02-Jun-20 | 15640 | 16160 | 520 |
| 01-Jul-20 | 16825 | 16857 | 32 |
| 04-Aug-20 | 17750 | 17767 | 17 |
| 01-Sep-20 | 17830 | 18205 | 375 |
| 01-Oct-20 | 17380 | 17254 | -126 |
| 02-Nov-20 | 17915 | 17769 | -146 |
| 01-Dec-20 | 19315 | 18897 | -418 |
| 07-Jan-21 | 21880 | 21310 | -570 |
| 01-Feb-21 | 24140 | 24158 | 18 |
| 01-Mar-21 | 27780 | 23739 | -4041 |
| 01-Apr-21 | 27760 | 26678 | -1082 |

# Zinc

## Price Forecasts and World Quarterly Supply/Demand Balance

Source: Wood Mackenzie

| | | Refined Supplies | Refined Consumption | Balance | Metal Stocks Days of Cons | Cash $/tonne | Price c/lb |
|---|---|---|---|---|---|---|---|
| 2020 | Q1 | 3357 | 3269 | 88 | 42 | 2128 | 96.5 |
| | Q2 | 3296 | 2881 | 416 | 61 | 1961 | 89.0 |
| | Q3 | 3445 | 3435 | 10 | 51 | 2335 | 105.9 |
| | Q4 | 3633 | 3644 | -11 | 48 | 2628 | 119.2 |
| | Total/Avg | 13731 | 13228 | 503 | 48 | 2267 | 102.8 |
| 2021 | Q1 | 3386 | 3404 | -18 | 51 | 2748 | 124.6 |
| | Q2 | 3456 | 3480 | -24 | 49 | 2839 | 128.8 |
| | Q3 | 3514 | 3425 | 89 | 52 | 2850 | 129.3 |
| | Q4 | 3582 | 3446 | 137 | 56 | 2900 | 131.5 |
| | Total/Avg | 13938 | 13755 | 183 | 56 | 2834 | 128.6 |
| 2022 | Q1 | 3487 | 3483 | 4 | 55 | 2900 | 131.5 |
| | Q2 | 3582 | 3561 | 21 | 54 | 2900 | 131.5 |
| | Q3 | 3586 | 3504 | 81 | 57 | 2900 | 131.5 |
| | Q4 | 3649 | 3525 | 124 | 60 | 2900 | 131.5 |
| | Total/Avg | 14303 | 14073 | 230 | 60 | 2900 | 131.5 |
| 2023 | Q1 | 3661 | 3550 | 110 | 63 | 2800 | 127.0 |
| | Q2 | 3640 | 3629 | 11 | 62 | 2750 | 124.7 |
| | Q3 | 3603 | 3572 | 31 | 63 | 2650 | 120.2 |
| | Q4 | 3653 | 3593 | 60 | 65 | 2650 | 120.2 |
| | Total/Avg | 14557 | 14344 | 213 | 65 | 2713 | 123.0 |

## Price Forecasts and World Quarterly Supply/Demand Balance

Source: Wood Mackenzie

| Global (kt) | 2020 | % | 2021 | % | 2022 | % | 2023 | % |
|---|---|---|---|---|---|---|---|---|
| Mine Production | 12463 | -3.2 | 13067 | 4.8 | 13525 | 3.5 | 13682 | 1.2 |
| Refined Production | 13731 | 2.5 | 13938 | 1.5 | 14303 | 2.6 | 14557 | 1.8 |
| Consumption | 13228 | -4.6 | 13755 | 4.0 | 14073 | 2.3 | 14344 | 1.9 |
| Concentrate Market Balance | -455 | | 131 | | 297 | | 261 | |
| Metal Market Balance | 503 | | 183 | | 230 | | 213 | |
| | | | | | | | | |
| **Prices** | | | | | | | | |
| Cash LME Price ($/t) | 2267 | | 2834 | | 2900 | | 2713 | |
| (c/lb) | 103 | | 129 | | 132 | | 123 | |
| Realised TCs ($/t concentrate) | 300 | | 159 | | 226 | | 252 | |

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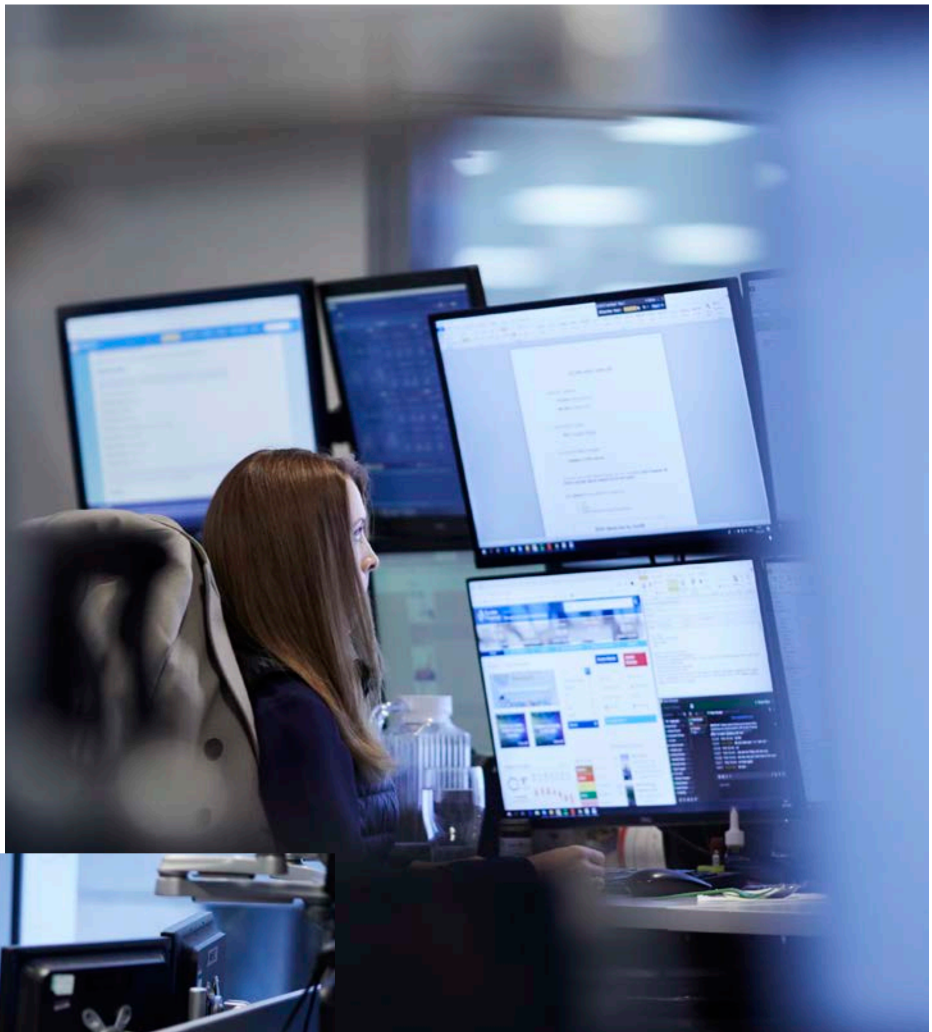

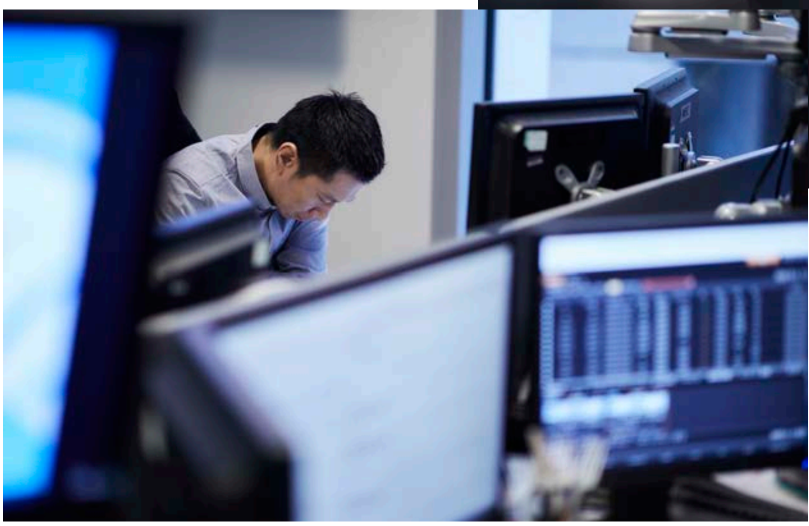

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