Quarterly Metals Report

Q3 — July 2020

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

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Summary

Metals prices trended higher in Q2 as sequential economic data improved, and investors looked through lockdown data and concentrated on the staggered re-opening of the global economy. Expansive Monetary and Fiscal policy has aided liquidity and optimism to the benefit of speculators. However, the PBOC has paused liquidity measures and as data improvements become less pronounced we expect weak demand conditions to play a more prominent role in the market, especially as mine supply starts to come back online albeit at a reduced capacity. Unemployment policies have been successful, but they can't go on forever and high levels on redundancies seem inevitable which may prompt stagflation. We expect stimulus and liquidity to remain extremely accommodative but gains and volumes to be less pronounced in Q3, with downside risks evident.

Aluminium (Al)
The carry trade prompted strong demand for aluminium in Q2, but underlying demand remains weak. While there are signs of recovery in the global auto market, which is positive for sheet consumption, Chinese semi exports have been lower as the export market is weak. We expect supply to remain strong as prices have recovered back above $1,650/t. Speculator sentiment is improving, which may aid the upside as liquidity measures remain expansive, but the fundamentals remain weak. We expect speculator moves to the upside to be exaggerated, but the threat of a second wave is pronounced and this should cap gains and presents a downside risk. Economic data-led speculators could push to $1,775/t, but we expect the majority of trading to take place between $1,610/t – and $1,810/t.

Copper (Cu)
Tightness in the concentrate market due to mine suspensions and the global lockdown has caused TCs to fall, and we expect these to remain weak in the immediate term but as mine supply comes back online we should see availability increase with TCs. Operation rates and smelter production has been strong and the lack of scrap availability has supported cathode demand. Infrastructure investment and 5G will support consumption, but as the PBOC pause liquidity and special bond issuances reach their year maximum we could see positive speculator sentiment falter. The recovery of economic data should be less pronounced and as mine supply improves, this could prompt correction to the downside. In our opinion, the market is overextended on the upside but we anticipate trading between $6,000/t - $6,800/t, with prices well bid towards $5,800/t.

Lead (Pb)
China's auto market has recovered well compared to other majors, but some demand is from dealers looking to restock. In Europe, the order book is weaker with the IFO German automobile order assessment index at -49.8 for June, just off the low. Battery demand is expected to recover but operating rates in China at producers are still recovering, which in conjunction with the low collection rate of older batteries could create some tightness in the market. As mine supply comes back online, the availability of the raw material should improve. We expect the majority of trading between $1,730/t and $1,960/t.

Nickel (Ni)
Nickel Ore inventories declined significantly in the last 4 months, following frontloading before the Indonesia export ban and reduced availability due to COVID. Maintenance in the immediate term may prompt some softness to stainless production but we could see low-cost producers continue to keep production high. Chinese NPI may increase as operation rates improve but Indonesia demand is expected to rise sharply in the next year as new RKEF lines are produced. EV sales in China are recovering well and Tesla emerged as a front runner in the market. Range:$12,109/t - $14,745/t.

Tin (Sn)
The solder and semiconductor markets are expected to remain strong in Q3, we could see the smartphone market recover in H2 2020 as well. Mine supply has struggled but Chinese imports of refined tin were up 1,762% y/y in May with the majority of imports coming from Indonesia. Ore and concentrate imports into China were stronger in May, up 24% y/y; this affirms the trend that China is a net importer. The PHLX Semiconductor Index has benefitted from the equity rally, although Samsung did beat analyst earnings expectations for Q2. We expect tin to remain on-trend, trading a range of $15,650/t - $19,000/t.

Zinc (Zn)
Galvaniser operating rates in China have remained strong but diecasting operating rates is lacklustre. Output of zinc in China has fallen from the recent high but production remains in growth on y/y basis. The reduction in mine supply prompted a decline in zinc concentrate imports into China but TCs have stabilised in recent weeks. We expect Chinese zinc concentrate output to increase. Demand remains weak and stainless steel consumption in the aerospace industry will be hit significantly due to COVID. Reduced demand and constant supply may present headwinds to zinc prices on a fundamental basis; however optimistic speculators aid a rally. Weak demand and supply resumption favours the downside but speculator demand has been strong. Range: $2,093/t - $2,460/t.

Iron Ore & Steel
Iron ore prices firmed in recent months as stimulus measures, in China specifically favoured infrastructure and steel demand. Imports into China managed to maintain their strength but the higher quality fines from Brazil may have been in shorter supply as Vale had to halt production. The cases in Latin America remain high, specifically Brazil and this is a threat to exports. Port stocks have fallen and the spread between low and high-quality fines have softened slightly but remain elevated. Strong steel demand will keep prices elevated but the PBOC has paused liquidity. Special bond issuances will remain expansive in the near term despite using over half the year's allocation. We expect relative tightness to remain in Q3 with a range of $90/t - $120/t.

Gold (Au)
Increased speculative demand supported the precious metal in Q2, helping it recover from March sell-offs. Record low-interest rates, unprecedented government stimulus, and continued geopolitical tensions will be supportive of gold prices in Q3, as its opportunity cost of holding remains low. Gold is poised for another quarter of growth, yet, slower to the one seen in Q2. Jewellery demand is to remain subdued on the back of consumer uncertainty. The 2011 high was at $1,921/oz but this may be out of reach in Q3. We expect the trend to remain on the upside given the monetary policy climate. Range: $1,765/oz – $2,000/oz.

Silver (Ag)
Investment appetite bounced back for silver as investors urged to safe-havens to hedge from risks posed by the spread of coronavirus. Global ETF inflows saw another round of expansion, while CFTC managed money remained subdued. While holding on to its safe-haven properties, we expect silver's industrial demand to shine in Q3, thanks to a prompt recovery in Western economies. As risk appetite starts to improve, silver may correct to the downside, but with improving industrial and manufacturing outlook, we expect to silver to trend higher but the majority of trading to take place between $18.70 - $25.5/oz.

Palladium (Pd)
Demand for palladium is likely to pick up in Q3, as reopening auto manufacturers and stricter emission regulations are likely to add to overall precious metal rally. The supply is likely to remain constrained across the world, apart from Russia, where output is to remain on track for the rest of the year. Nevertheless, the outlook for palladium remains to the upside thanks to improving economic and industrial demand. Range: $1,900-$2,450/oz.

Platinum (Pt)
In Q2, platinum prices picked up from March lows due to bargain hunting interest from China. A risk-off market sentiment has kept economic activity subdued, weighing on manufacturing, capping the platinum rally. For the quarter ahead, we see recoveries in the automotive sector in Europe and the US, with China leading the way. Overall, autocatalyst demand is likely to bounce back from Q2 lows, reflecting plant openings along with a marginal rebound in consumer demand for new vehicles. Range: $800-$967/oz.

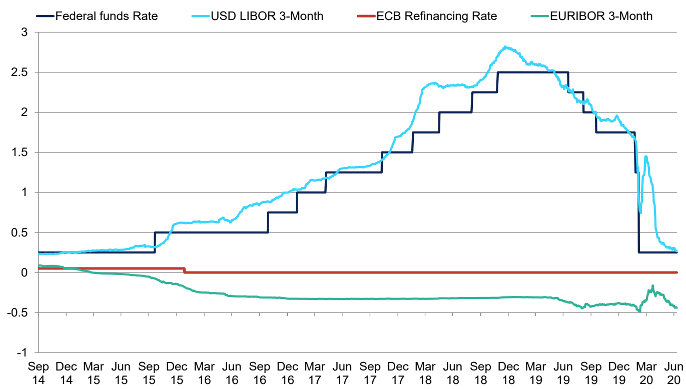
Market Overview

Global Outlook: The pandemic has been a hugely disruptive event, imposing a multilateral shock to the global economic system. In Q2 2020, the spread of the COVID-19 virus touched nearly every country in the world, causing huge global shutdowns, a surge in unemployment, the deepest recession we have seen since the Great Depression, and a lot of unprecedented policy actions. While we saw China's cases subside at the beginning of March, the spread across the rest of the world has picked up. Developed economies, including the US and most of Europe, imposed strict lockdown measures, urging people to stay inside. As a result, global transportation nearly diminished, and demand growth has turned negative. As we begin to see the light at the end of the tunnel, we start to gauge the extent to which the economies have been hit. According to IMF, global growth for 2020 has been forecast at -4.9%, down 1.9 percentage points from a previous forecast in April.

The global economy has taken a huge hit from the pandemic, and central banks have acted aggressively to prevent a tightening in financial conditions and cushion economies. Indeed, the G4 (England, Japan, the US, and Europe) central banks' balance sheet is most likely to reach $20tr by the end of 2020. While we see demand growth picking up in Q3, it is most likely to remain under the pre-crisis levels for the medium term. Muted inflation and, consequently, lower yields should translate in low-interest rates policy from the central banks; that is until we see positive inflation growth.

Western Economies Interest Rates

Central Banks lowered their interest rates to record lows to support economies.



Source: Bloomberg

That said, the recovery will continue to look mixed as some economic indicators rebound faster than others. We attribute this to the inability of fiscal and monetary support to cushion all of the economic sectors equally. Despite big bounces, the levels of the GDP are going to remain repressed by the end of the year. Unemployment rates are going to stay elevated, especially in the US. And while we see containment policies being lifted in most of the economies, the behavioural response is going to be slower. Elevated rates of savings and subdued demand are going to weigh on consumer spending. Consequently, corporate profits are likely to be down. At the same time, a surge in national debt is going to be a massive burden for the economies.

On April 20th, WTI crude oil futures fell into negative territory for the first time due to the combination of higher supply from a price war between members OPEC; the demand hit from COVID-19 and high inventories. While the oil market remains weak, the recent modest price recovery indicates that H1 2020 ended on a more optimistic note. Data shows that demand destruction has been less than expected; however, it is still unprecedented. Indeed, as American producers began idling rigs and laying off workers,

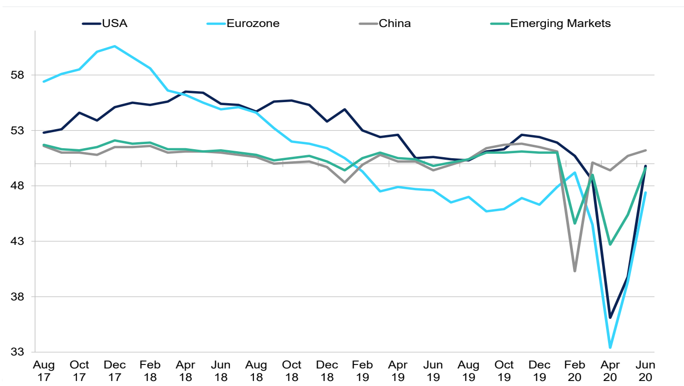
Ultimately, demand will depend on how the pandemic impedes mobility and trade since more than 60% of oil is used for transportation. On the other hand, power demand is likely to increase in Q3, thanks to reopening of manufacturing facilities as well as air conditioning use during the summer season. OPEC+ expects a 1mb/d increase to come from power generation demand in 2020. Overall, according to IEA, oil demand in 2020 is expected to fall by 8.1mb/d, the largest in history.

From the supply side, record output cuts from OPEC+ and non-OPEC producers saw global oil production fall by a massive 9.4mb/d in June. In addition to a 12mb/d plunge in May, investment in oil has also collapsed, possibly supporting prices through lower supply in the long-term. To further speed up market rebalancing, OPEC+ decided to extend their historic output cut of close to 10mb/d through July.

The latest IHS PMI for the US suggests that economic activity continued to decline in June but at a much slower pace from a month before. This was mostly attributed to a decline in activity in the broad service industry. The PMI for manufacturing picked up from 39.8 in May to 49.8 in June, a record increase, as job losses eased and selling prices picked up, after having fallen very sharply in the previous three months. Overall, contraction in output slowed as new orders have stabilised amid relative improvement in demand conditions. The PMI for services improved from 37.5 in May to 47.9 in June. Overall demand remains weak; however, deceleration of the decline in economic activity reflected the easing of economic restrictions.

Manufacturing PMIs

China close to pre-crisis levels- Europe and the US are yet to fully recover.



Source: Bloomberg

The PMIs for the EU, similar to the one of United States, indicate that economic activity continued to decline in June, however, at a more modest pace than before. Indeed, the manufacturing PMI increased from 39.4 in May to 47.4 in June. While this shows a steep rebound, operating conditions remain challenging, as new orders remain subdued. All countries showed a relative improvement, with France posting at 21-month high at 52.3. Overall, the sharp turnaround implies monthly gains are likely to persist in the coming months. The PMI services index increased from 30.5 in May to 48.3 in June. Many other companies, both in manufacturing and services weakened demand as business, and consumer customers remained cautious with respect to spending.

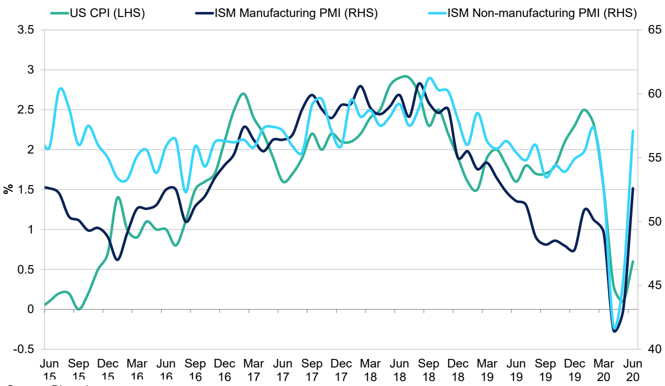
In China, service sector activity expanded at the quickest rate for over a decade in June, thanks to rising business activity and new orders. Business confidence strengthened to a 3-year high. Unfortunately, employment continues to decline. Manufacturing activity strengthened, however, at a slower rate to that seen in services. The sector continues to recover from the COVID-19 crisis, as rising production and a renewed increase in total new business persist. External demand remains subdued. Manufacturing PMI increased from 50.7 in May to 51.2 in June, to signal a second successive monthly improvement in the sector. Exports, however, continued to fall amid reports of weak external demand. Although the rate of output softened from that in May, it remains solid overall.

US: The COVID-19 disease has dealt a severe blow to the American economy. In Q2, unemployment has picked up to record highs to 14.7% in April, up drastically from 3.8% in February. As expected, retail, entertainment, and hospitality have been hit the hardest, and all service-sector industries saw massive job losses. The decline in consumer spending drove the decline in economic growth in the US. Indeed, we saw declines down to -6.6% m/m in March, which have contributed to GDP growth of -5.0% q/q, and with consumer spending figures at -12.6% for April, we expect GDP growth to be much lower for Q2.

Without a second round of stimulus checks, the impact of spending could be substantially negative. Indeed, the enhanced unemployment insurance is set to expire by the end of July, with the aim of boosting job numbers and encouraging people to return to work. Instead, the White House may consider a 'return to work' bonus pay to incentivise people to return to the offices. At the same time, nearly 43m people have filed for regular unemployment insurance, and more than 6m have filed for Pandemic Unemployment Assistance. Although unemployment rose very swiftly, we do not anticipate the recovery will be nearly as speedy. The unemployment rate could remain in the double-digits for the remainder of 2020.

US CPI vs non- and Manufacturing PMI

Activity bounced back to normal levels, while inflation remains dormant.



Source: Bloomberg

Overall, the economy should continue to recover in Q3 thanks to looser quarantine restrictions; however, GDP growth will likely remain subdued for 2020 until the disease is fully controlled or a vaccine is safely and effectively implemented. Trade, in particular, will face some strong restructuring challenges. COVID-19 erupted the way the supply chains operate, and the pandemic has created anxiety about food security and pressure for domestic production of medical equipment. We, therefore, see countries pushing forward with the protectionist measures and implementation of self-reliance techniques to ensure partial or complete self-sufficiency in the future. Additional strains of US-Sino trade war should make this transition more rapid for the US.

Indeed, a recovery in the stock market and the economy will provide Trump with his best chance for a win in November. At the time of writing, Trump is losing support in key states due to his handling of COVID-19, and lately, of the BLM movement. Falling unemployment levels, additional stimulus checks, as well as proper control of the virus spread, should provide support to Trump's poll popularity. On the plus side, if the high number of coronavirus cases persists, the US should be better prepared in terms of healthcare capacity and treatment. Also, news of the new vaccine looks promising; however, most likely to remain under development until next year.

In March, as the pandemic started to unfold, we saw many workers dismissed, resulting in disposable income falling 2.0% m/m in March, as consumers began to face economic restrictions, avoiding visiting non-essential shops and conducting leisure activities. In April, we saw unemployment peaking to record highs, and the government was urged to provide massive stimulus checks in the form of cash disbursements. As a result, real disposable income increased to a record 13.1% m/m, but much of it has been saved rather than spent. The US savings rate as a percentage of disposable income increased to 32.2% in April from 8.4% in February.

This trend, however, was short-lived. The pattern reversed in May as stimulus checks declined, leading to real disposable income falling 5.0% m/m. Nevertheless, spending on non-durable and durable goods increased by 7.0% and 28.5% respectively as people chose to cut down on savings. Spending on services, however, grew only 5.2% after falling 12.0% a month prior. As the US lifts its lockdown restrictions, we expect spending on services to increase, and the savings rate to subside further, however, remain at elevated levels.

The Fed cut rates to 0.00-0.25%, committed to unlimited asset purchases and implemented lending facilities. These measures provided market liquidity and access to credit. Although the Fed has offered unprecedented support already, there is still capacity within the existing toolkit. Rates will be kept low for the long term, as clearly stated by the FOMC. Additionally, the US government has provided a massive fiscal stimulus to mitigate the permanent damage that could be done by consumers and businesses going idle. The fiscal stimulus packages include forgivable loans to small businesses and unemployment benefits for employees who lost their job. While this legislation supported the individuals and companies, it will not be able to help in relation to falling output and high unemployment.

Europe: We have seen EU economies emerge from strict lockdown measures and, so far, there has been minimal evidence of the second wave of coronavirus-related infections taking hold. Even before the pandemic hit the bloc, the economies lacked policy ammunition. The European Central Bank policy rate was already negative, at -0.5%; there were strict rules around increasing fiscal spending, and high-debt countries like Italy were subject to posing a risk to Europe's financial stability. Indeed, the EU has suffered years of lacklustre growth, in which strong domestic demand offset faltering exports. As the pandemic hit Italy, demand collapsed, and lower export levels weighed on manufacturing. Unlike in the US, labour interventions have helped to keep workers connected to the workforce, preventing an unemployment spiral.

Economic estimates, such as GDP growth, confirmed lockdowns devastated the Italian economy in Q1 2020, as the virus hit. The economy shrank by 3.6% q/q in Q1. As a result, business and household activity have been suspended by the end of March. The economic blow was felt even more strongly in Q2, due to the expansion of lockdown measures, which are currently being lifted throughout the Eurozone. The unprecedented collapse of industrial production, retail sales, poor economic sentiment and PMI readings all point to the destruction in both service and manufacturing sectors. Indeed, industrial production in Europe sank to the record lows in April, down 28% y/y. Output for capital goods was 27.3%, and output for consumer goods fell 10.7%. In contrast, the energy was down only 4.8%.

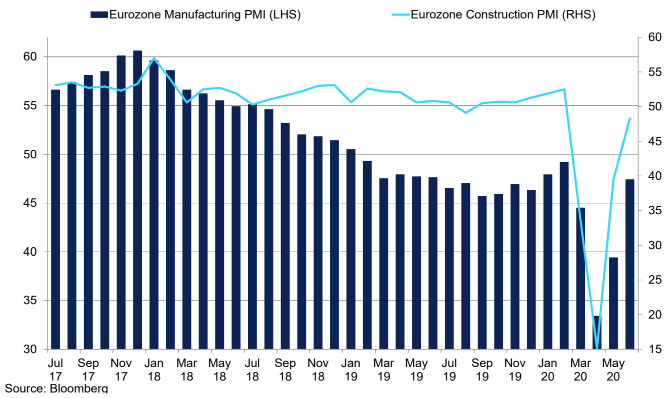
The policy response has surprised to the upside. The ECB has expanded its asset-purchase programme by $263bn in May. Every member state in the bloc will run huge budget deficits this year, thanks to relaxed fiscal deficit rules. The work subsidy schemes implemented in most countries have kept the Euro area's unemployment rate low. The ECB expanded its pandemic emergency purchase programme, committing to purchase €1.35 trillion of bonds to lower borrowing costs and increase lending in the area. Even a notoriously strict country like Germany has contributed to the most far-reaching response by proposing a €750bn recovery fund that will be funded by joint bond-issuance of all 27 members of the EU.

The UK has been hit hard by the COVID-19 crisis. It has suffered high infection and death rates, which have delayed the easing of lockdowns.

Additionally, Brexit negotiations add to existing economic uncertainty. There is a year-end deadline for a trade deal; however, negotiations seem to be on a standstill. Real GDP in the UK declined by 20.4% m/m in June, a record low..

Eurozone Manufacturing and Construction

EU manufacturing seen closer to the 2019 levels, while construction lagging.

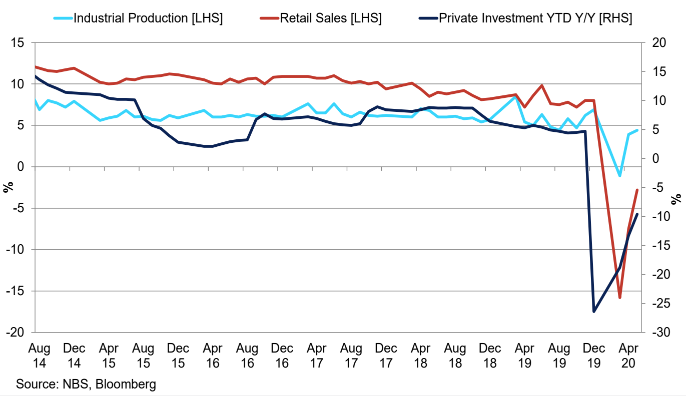


China: As the first country to emerge from the COVID-19 crisis, China set itself on a path of recovery in Q2 2020. So far, the picture has been mixed. On the one hand, industrial production and investment in property infrastructure are up thanks to heavy government spending and incentives. On the other hand, retail sales, as well as overall investment, continued to decline, as the public fears economic uncertainty prevailed. Construction activity has improved significantly in the last quarter, and many infrastructure projects are underway. Overall, the Chinese economy has been reviving at a moderate pace, but activity mostly remains below the pre-crisis levels.

China's economic recovery is on track; however, for the first time in years, no GDP growth target has been set for 2020. That said, in Q2, the economic bounce has been more vigorous than expected, thanks to a rebound in manufacturing. In the upcoming quarter, industries are more likely to take a breather to replenish their inventories, in hopes of improved overseas demand. Overall, the PPI inflation is at 2018 lows, and CPI has moderated significantly on retreated food prices.

China Retail and Industry Indicators

Quick bounce from April lows; however, a path to recovery still ahead.



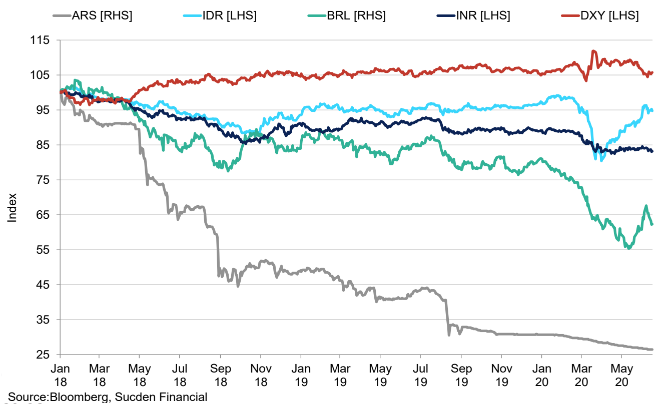
Industrial production was up 4.4% y/y in May, edging closer to pre-crisis levels as factories began to recover from coronavirus impact; however, the weaker-than-expected gain implied that the nation's recovery remained fragile. Manufacturing output increased up to 5.2%, including a 12.2% jump of the automotive production. There was also solid growth in the production of construction equipment, thanks to increased government spending on infrastructure. Indeed, investment in manufacturing fell sharply; however, recovered up to 2.5% y/y in June, thanks to massive issuance of bonds by local governments. Overall, in Q2, manufacturers have caught up on lost production; however, new orders remained weak as global demand has fallen off. Domestic consumption will be the main driver for 2020 growth, and an improvement in exports will be critical to Chinese industrial recovery.

The government has announced further stimulus measures, including coupons to households to encourage spending, and the PBOC has made monetary policy more accommodative. The stimulus size is nowhere near the size of 2015/16 or of the financial crisis of 2007-08 as the government is worried about excessive levels of debt. While geopolitical risks are on the rise, we believe the discussions between the US and China is unlikely to see the Phase One trade deal terminated in Q3 2020.

Emerging Markets: As the global COVID-19 crisis evolved in emerging markets, the rise in debt levels posed risks for already economically vulnerable economies. As global investors began to realise the magnitude of the pandemic, they pulled their funds from emerging markets and into safe-haven assets. Portfolio outflows from emerging markets outpaced those seen during the last financial crisis. The US Fed injected huge sums of liquidity into financial markets, helping emerging markets. Additionally, swap lines with the rental banks of overseas economies reduced the risks of drying up dollar liquidity in those countries. The IMF also contributed more than $9tr towards global fiscal support to fight COVID-19, with emerging and developing markets taking the biggest share.

Emerging Market Currencies

Weaker emerging market currencies will help support exports.



While emerging market equities enjoyed a V-shaped recovery, the economic outlook remains uncertain. The lockdown measures to contain the virus ease, but the near-term outlook for the emerging markets remains dire. Still, we expect growth to improve marginally as domestic demand picks up. The oil hit is gradually fading, commodity prices have somewhat stabilised, and inflation is tame. A rebounding US economy and steady growth in China also will be helpful. Historic low-interest rates and substantial fiscal easing in most emerging market economies will also support a gradual economic upturn this year. Additionally, a less-bleak external backdrop will support commodity prices and trade balances, but trade tensions and the virus spread are still threats. On the downside, monetary easing by central banks seems largely exhausted and mostly priced in, although unconventional policy measures could still provide further support in some economies.

The Americas, as a whole, represent 50% of global cases, with Brazil taking the biggest proportion of these cases. Bolsonaro has been criticising lockdown and social distancing measures, resulting in inadequate response to the virus. The country's fiscal and monetary response has been relatively positive; however, the nation's limited balance sheet, similar to the rest of the emerging markets, leave small room for other stimulus support. The Selic Target rate has been cut down to 2.0%, from 4.50% at the beginning of the year. The authorities estimate the direct fiscal impact at around 6% of GDP, just under 10% threshold. Overall, governments have addressed the pandemic differently, implying an uneven economic outlook for emerging market economies..

Aluminium

LME Aluminium 3MO ($)

Source: Bloomberg, 22.07.2020

Summary

Global aluminium output has remained strong in 2020 despite the coronavirus and some loss-making capacity being taken offline. According to SMM, Chinese output of aluminium was 18m tonnes for H1 2020. However, underlying demand has been weak due to the coronavirus as sequential economic data improves this has buoyed market sentiment but on a historical basis demand is weak and coming from a low base. We expect H2 2020 to try and offset losses incurred in H1 but the key will be where the demand recovery plateaus, and how far below 2019 levels that is.

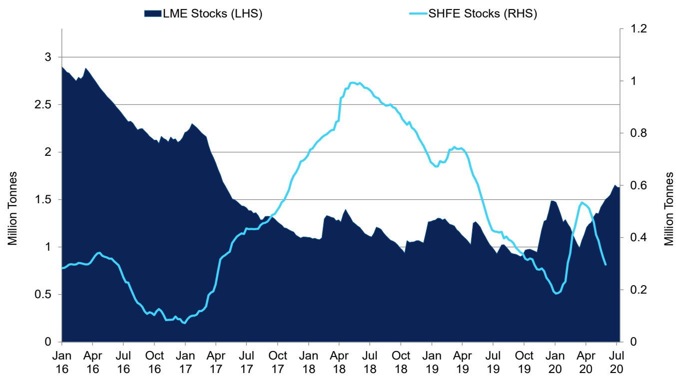
Q2 Recap: Activity in Q2 saw risk appetite return to the metals markets, despite the prospects of weak demand; and prices have gained 6% to close on the front foot at $1,527/t. YTD losses are 6.48%, and as positivity returns to the market, prices have surged in Q3 so far. Consumption for aluminium has started to improve as construction comes back online with economies reopening, on a month on month basis auto sales are recovering. This should be to the benefit of aluminium, especially in the US who favour aluminium sheet in autos. LME inventories have soared higher this year up 10.8% YTD; this does not tell the full story. In Q2 alone, stocks have gained 42% 1.63min tonnes and from the March low material inflows have improved 68.78% from 967kt to 1.633m tonnes as of July 9th. We did see the cash to 3-month spread tighten into $13/t contango, but the market has weakened back out to $31.5/t contango. Shanghai deliverable stocks have been falling in recent months, falling from 534kt to 224kt as of July 3rd, SHFE prices have rallied incessantly in recent months to RMB13,990/t up 21.18% in Q2.

Outlook: Chinese primary aluminium production increased in June by 2.42% to 3m tonnes according to SMM, primary capacity has increased on a month on month basis, by 180,000 tonnes bringing total capacity to 36.76m tonnes. Aluminium producers' operating rates have increased in recent months from the low in March of 87.85% to 89% in June. H1 2020 output of aluminium in China has remained strong despite large proportions of smelters losing money due to the sell-off. However, the recovery in prices has improved margins and could see the output in H2 2020 expand further, YTD production reached 18m tonnes up 2.93% y/y. We expect output to increase again in July, the most up to date NBS data indicates that output of aluminium products reached 5.1m, tonnes bringing total output to 20.95m tonnes up 14.5% y/y, we expect June's production of aluminium products to increase.

Electrolysed aluminium production has remained constant in recent months around 300,000 tonnes. May production was 297,700 tonnes bringing YTD production to 1.4m tonnes, down 0.1% on the year.

LME vs SHFE Stocks

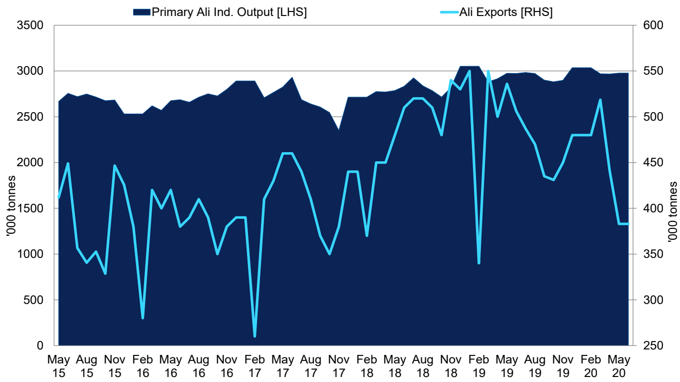
Exchange inventories have diverged in recent months. The carry-trade triggered flow into warehouses.



Source: Bloomberg

China Industrial Output - Primary Aluminium vs Exports and Imports of Unwrought & Aluminium Products

Output remained near highs in 2020, but exports fell, outlining weak ROW demand.

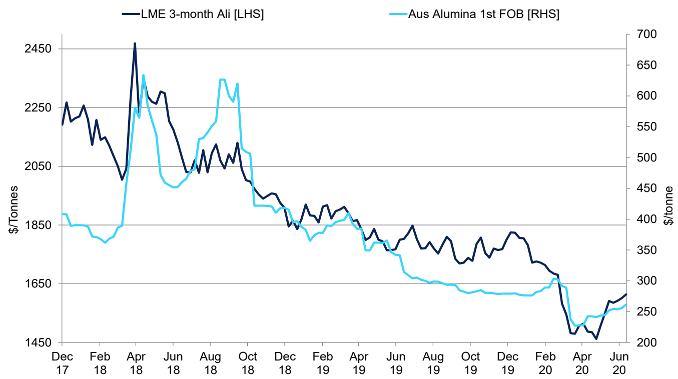


Source: NBS, Bloomberg

ROW production, according to the International Aluminium Institute (IAI) was 2,354,000 tonnes in May down 1% y/y. Production could fall further following the closure of Alcoa's smelter in July. Output losses due to the coronavirus are starting to come back online, and this may result in downward pressure on prices. With prices around $1,700/t, the majority of global production is in the money, and this could see further capacity come back online. The SHFE rally has also incentivised Chinese production with some idled smelters restarting production. The value-added output will also improve due to tax rebates. Alumina production has remained strong, and according to the NBS, output in May was 5.94m tonnes in China, down from 6.07m the month prior. Imports of alumina improved marginally in May to 268,573 tonnes from 219,000 in April. East China's 99% alumina index price was RMB2400/t as of July 9th with the 1st generic Australia Platts alumina contract at $263.78/t during the same period. The relative strength of alumina prices in recent weeks is due to the reduction in capacity at Alunorte.

3-month Price vs Alumina 1st Generic FOB

Prices rallied in tandem with 3-month aluminium prices, but for different reasons?



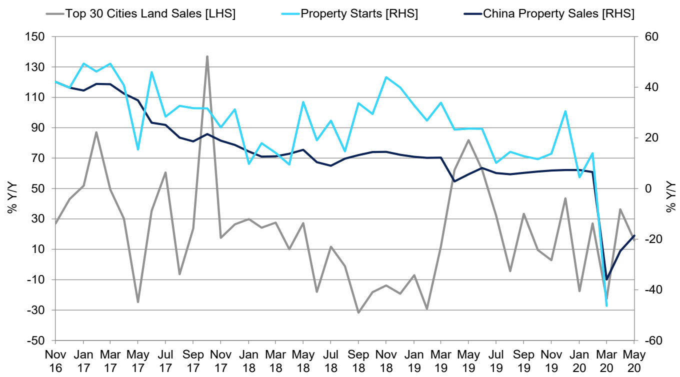
Source: Bloomberg, Platts

Operating rates have improved in recent months, according to SMM; however, some producers kept rates relatively high compared to other products and metals. Indeed, aluminium industrial extruder operating rates have increased in recent months to 63.77 in May, up from 56.10 in April. Construction extruder operating rates are 63.21% in May, down from April, which was 63.73%. China's construction PMI decreased to 49.9 from 54.07 the month prior; there are signs of improvement in the property sector; however, sales, starts, completions and land sales were all down in May. Land sales in the top 30 cities were positive and at 36.01% and this may indicate stronger demand for aluminium extruders in the longer term.

In Europe, the construction PMI is 48.3 and is still recovering from the lockdown low of 15.1 in April. The data is improving on a sequential basis, but demand outside of China remains weak, US housing starts did marginally recover in May to 974,000 up from 934,00 in April but remain far from pre-pandemic levels of 1.26m. Lacklustre demand for aluminium semis outside of China has led to a decline in imports and an increase in stocks on the mainland. Exports were down 28.6% in May at 383,000 tonnes, according to Chinese customs data imports into China of unwrought & aluminium alloys improved slightly in May to 87,871 tonnes up from 71,225 tonnes. The aluminium arbitrage has also declined and at the time of writing stands at $120 SHFE CIF physical premium over LME. The incessant rise in SHFE prices relative to LME has reduced propensity to export and narrowed the arb.

Chinese Property Market

Signs of improvement in recent months, but there is still ground to make up.



Source: Bloomberg

Auto production continues to recover on a month on month basis, growing 18.2% y/y in May, production YTD is down 24.1%. Passenger cars YTD are down 29.1%, but in May we saw output recover strongly to 11.2% y/y and 4.5% m/m, commercial vehicles output was also strong in May up 47.7% y/y but on a YTD basis production remains weak at -1.4%. In our opinion, we believe Chinese output of autos will continue to improve on a month on month basis, reducing the losses on year on year basis. In Germany the IFO auto production business climate index is still heavily negative at 35.9 for June but recovered marginally off the lows at -67.4 and -53.3 for May and April respectively, once again we expect this reading to recover in the near term although production and sales will remain weak due to the lack of appetite for autos in Europe. Order assessment for autos in Germany is still poor at -49.8 for June just off the lows at -52.8 in May, improvement in orders across the globe is more bullish aluminium but especially in the US where automotive sheet is more popular. We expect a strong recovery in automotive sheet production in H2 2020 and 2021 in tandem with auto output.

Copper

LME Copper 3MO ($)

Source: Bloomberg, 22.07.2020

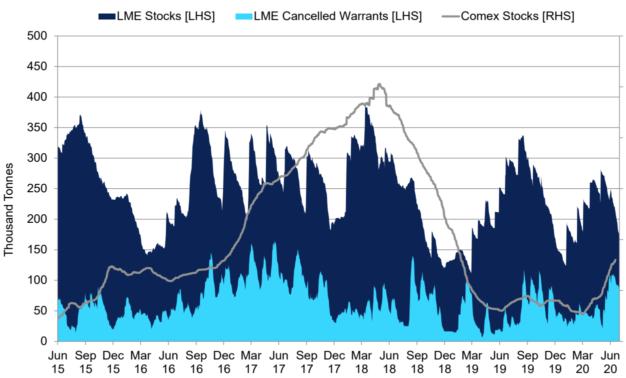
Summary

The recent rally in copper is overextended, and while there is tightness in the concentrate market, we expect this stress will be alleviated as mine supply comes back online, we look to TCs which remain low for an indication of improved availability. 5G and infrastructure investment in China is helping demand recover, but we are still down on the year. Consumer spending will start to improve on a sequential basis, but uncertainty surrounding unemployment will act as a headwind. While we expect a correction to the downside and gains to be less pronounced in Q3, the power of idle funds during the pandemic could increase the distortion in the market.

Q2 Recap: Copper prices surged higher in Q2, outperforming most market expectations, 3-month LME prices gained 22.8% in the quarter and closed at $6,015/t. Prices gained further ground and tested appetite above $6,500/t, which we think is an overextension on the upside despite the tightness in the concentrate market and recovering demand. Stimulus from China has helped demand, but it is still off the previous year's levels, however with significant funds on the side-lines due to uncertainty we believe CTA and system funds saw copper repeatedly break key resistance levels triggering further buy signals. In a similar vein to the stock markets, expansive liquidity measures by central banks and governments have aided the trend but do not reflect the underlying economic situation. The stimulus was necessary and still is, but when these measures are tapered, we could see reality set in, especially with redundancies after COVID unemployment benefit schemes stop. The rising cases across the globe and in particular the U.S. remains a concern, and we expect economies to run at a lower capacity for longer.

LME Copper vs COMEX Stocks

COMEX inventories climbing as LME warehouse stocks have fallen recently.

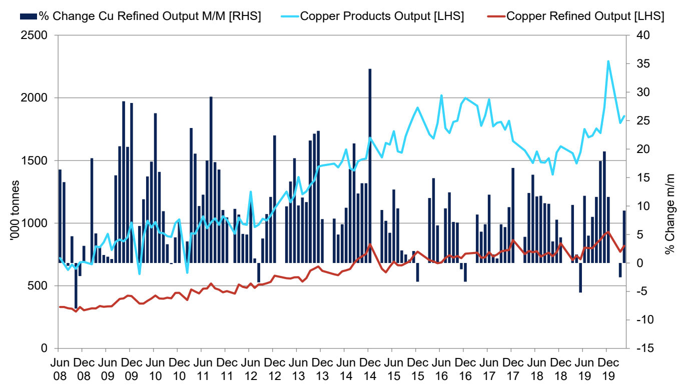


Source: Bloomberg,LME

Outlook: Refined copper production increased in May, according to NBS data to 853,000 tonnes, up from 819,000 the month prior, this brought total production to 3,967,000t tonnes. May production was up 13.3% y/y, and 2.7% m/m. Copper products production was also stronger in May, at 187,700 tonnes; YTD total reached 741,200 tonnes up 15.3% y/y and 4.3% m/m. Cathode production fell slightly in June by 1.42% m/m to 759,200 tonnes; the fall in production was attributed maintenance at some smelters. China copper cathode output stood at 4.43m tonnes through to the end of H1 2020. Smelter activity has remained strong, but we expect maintenance at the smaller smelters to be offset by strong production at larger smelters. This could cause production to be largely flat in July, and there is downside risk to copper production in July which would give rise to LME and SHFE prices.

China Refined Output vs Cu Products

Output in China has remained strong despite COVID and concentrate tightness.



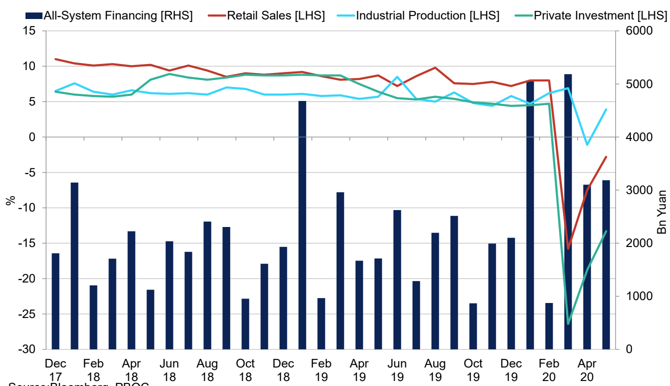
Source: Bloomberg, NBS

The lack of raw material could keep copper smelters from achieving their current output capacity. Imports of copper ore and concentrate have been declining since April as mine were forced to curtail production due to COVID-19. Imports for June were 1.594 tonnes according to Chinese customs data. Imports in June 2019 were 1.470m tonnes, so we have seen an improvement y/y; however, production of refined copper and copper products has been stronger this year, and inventories of concentrate in China are lower suggesting tightness in the market.

According to China customs data, imports of copper ore from Chile spiked in February to 1.284m tonnes, since then imports have normalised back towards the 2-year average of 595,000 tonnes, to 604,121 tonnes in May. Due to mine suspensions, we expect this figure to fall in June once again, outlining the tightness in the concentrate market. Chile copper production has a delayed release and total production declined in April to 470,000 tonnes, however despite the pandemic and reduced personnel output has remained strong, but this will cost Codelco down the line. Workers are tired, and cases in South America are rising, which may present some downside to copper production in Chile and raises the risk of a strike down the line. Indeed, the repeated extension of lockdowns in Peru has decimated production, prompting a fall in monthly output from 205,000 tonnes in December to 111,700 tonnes in April, bringing production back to levels not seen since Q2 2015. We expect production to have fallen further since April. However, while lockdowns are eased, we anticipate monthly output in Chile and Peru to start to recover, helping to alleviate some of the tightness in the concentrate market. It remains to be seen how quickly miners can get the material out the ground, onto a boat to China and to a smelter. Major copper miners in countries across the globe are seeing mines start to re-open some at reduced capacity, and as production improves the current high prices may prompt some producer selling. The reduced availability has prompted TCs to fall, with copper concentrate TC 25% CIF $54.50/t, according to Asian Metal Inc. which suggests reduced availability of material The treatment charge index by SMM has also been declining since March 2020, standing at $51.71/t as of June 30th 2020. The dispute with workers and Codelco presents a threat to the recovery of activity at their mines back to full capacity, but on the whole global copper mine supply will improve in Q3, giving rise to TCs.

China Macro Indicators

Strong 2020 PBOC liquidity measures & bond issuances, but some will be paused.

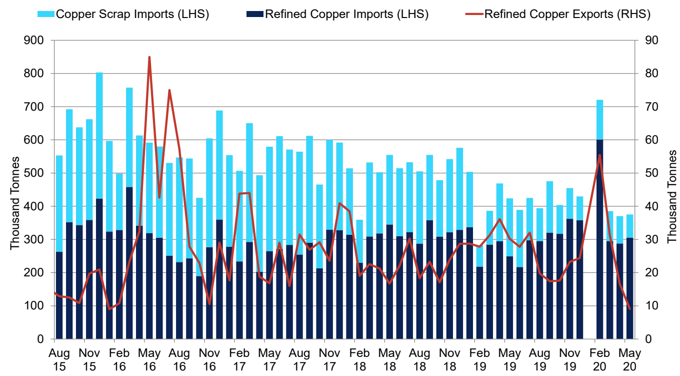


Source:Bloomberg, PBOC

The Chinese export market remains weak, in May exports were 9,103 tonnes, down from 55,455 tonnes in February. Export destination economies are starting to improve, and we expect futures exports to improve as countries come out of lockdown and governments provide stimulus. However, there is a strong disconnect between major economies and developing countries. Developed economies can increase stimulus and debt levels to help the recovery, whereas developing countries have less ammunition to deal with the economic crisis, so we could see the divergence grow between developed and developing countries. The PBOC has stalled on loans after fears of asset bubbles after the recent trends, aggregate financing in June and May reached RMB3.43trn and RMB3.19trn respectively, there was also an increase in household loans to RMB981bn in June, fixed asset investment was also stronger in China in June, and this suggests infrastructure projects are on the horizon. However, the recent rally in prices and recovering demand does not necessarily suggest that all is well. The longer-term impacts of the recent liquidity injection across the globe will, in time cause cutbacks in spending. Indeed, smaller companies who have borrowed money may not be able to pay back debt, and once unemployment support schemes finish, we expect redundancies to be made.

China Scrap and Refined Copper Imports/Exports

Scrap and ore imports decline, tightening China's availability as demand recovers.

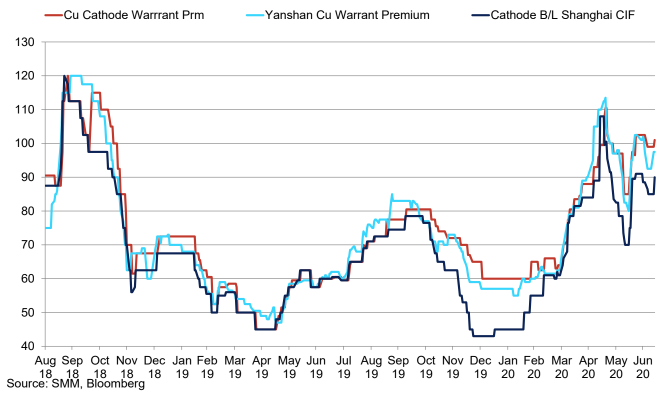


Source: Bloomberg,Customs General

Downstream activity expanded again in June as investment came to fruition, the SMM PMI for copper downstream activity was 52.52. Sectors such as construction, home appliances, transport, and power electronics are part of the PMI, and there was some hesitancy from the producer side to buy and stockpile material. Inventories fell as prices increased and export orders remained weak. Operating rates were strong for wire and tube producers have increased back to pre-pandemic levels with wire producer activity are particularly strong. Plate/sheet producers have struggled to get back to operation rates pre-COVID 19. Copper premiums are recovering, suggesting demand for material, and we expect this to remain the case. However, the export markets remain weak, and as the U.S. has to scale back the re-opening of the economy, this will be a headwind to the market. Warehouse stocks have decreased significantly in the last year, falling from 600,000 tonnes as of April 2019 to 208,000 tonnes as of June 30th. The most recent decline was aided by the opening of the arbitrage window between SHFE and LME, which is closed again now. Exchange inventories have also been falling in recent months. The scrap market continues to provide support for copper cathode demand, the lack of scrap availability has been an important trend so far this year, imports have been down nearly 50% y/y in the year through to May at 362,000 tonnes. The high exchange prices have prompted some stock to be released improving scrap availability. We expect imports to remain weak in the near term in the U.S. and Europe, especially as collection rates and scrap activity has been weak in those regions. China is scheduled to change regulations this month, but the quota scheme will remain in place

China Copper Premiums

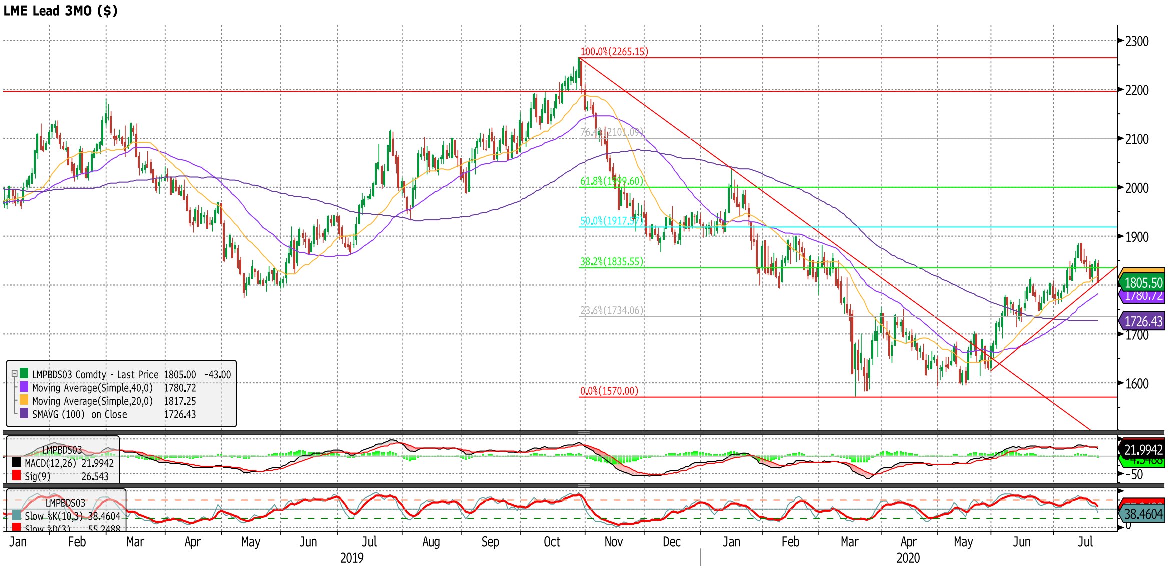
Premiums trend higher since February, but we expect gains to be less pronounced.



Source: SMM, Bloomberg

Lead

LME Lead 3MO ($)



Source: Bloomberg, 22.07.2020

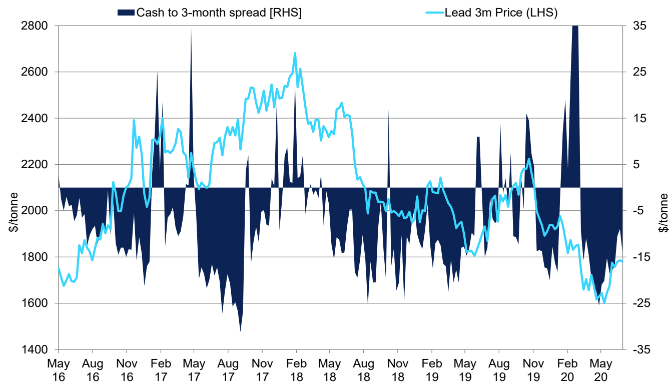
Summary

TCs have held up relatively well during the pandemic and stand at $145/t CIF, and availability should start to improve giving rise to TCs. The rally in LME prices has made importing concentrate and material in China expensive with the Arbitrage considerably offside. On and off-exchange inventories in China and historically weak demand would cap gains, as well as an improvement in secondary collection rates. If we see refined material flow into LME warehouses, this would also cap gains in the near term. We expect auto sales and production to start to improve on a month on month basis.

Q2 Recap: Consistent with our previous report, demand for batteries was dire in Q2 due to the global lockdown. The availability of recycled material has been low during lockdown due to a lack of collection possibilities. This has caused prices to improve; E-bike battery scrap price increased in recent months from RMB7,425/t in March to RMB7,825/t as of June 24th. Prices for lead scrap recycled start-type battery ex-vat in China improved from RMB6,825/t to 7,275/t CNY June 24th. Battery demand has been weak, but we expect consumption to start improving in the coming months as orders pick up and facilities reopen. We continue to hear positive noises from China and the US; this has been represented in the uptick in LME prices.

Cash to 3-month Spread vs LME 3-month Price

The spread tightened slightly but remains in contango despite the 3-month contract rally.

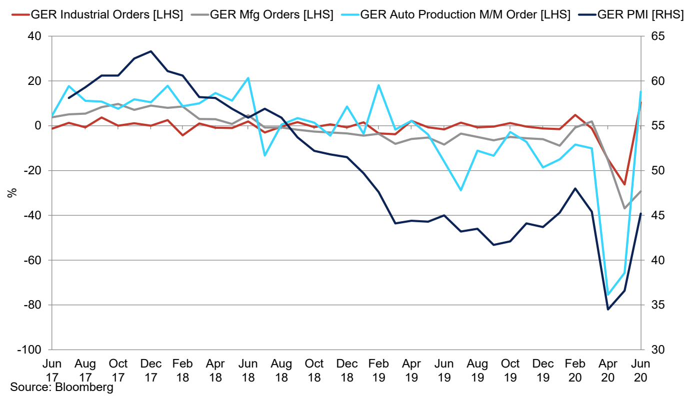


Source: Bloomberg

Outlook: Automobile production has been weak in recent months, understandably. Chinese production has started to recover, up from 195,000 units in February for passenger vehicles in China to 1.660m units in May. We would expect gains to be more gradual in the next couple of months, especially during the traditionally quieter period. The improvement in vehicle production in China suggests stronger demand for lead, and we have seen this play out in the physical market. With increased lead orders and growing demand from producers, we expect support for lead in the near term, especially given the shortage of scrap and refined lead in China. Commercial vehicle production has also recovered well, increasing from 89, 361 units in February to 527,219 units in May. The output of model type autos reached 2.187m units in May, up from 284,537 units. Sales have also rebounded relatively strongly; there may be a preference by citizens to use private cars over public transport due to the coronavirus. The accumulated output of cars in China was down a total of 29.7% y/y in May; however, May production was up 2% y/y in May.

German Manufacturing and Industrial Market

Auto orders improve, but industrial and manufacturing orders still negative, outlining economic weakness.



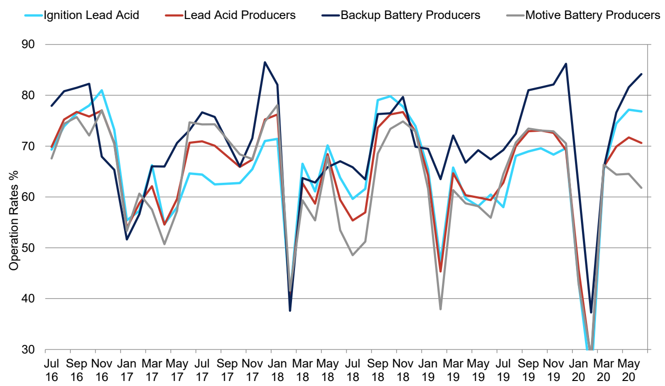
Source: Bloomberg

German auto production has also declined, and in April y/y production was down 75.2%. The German car market employs over 1 million people, and this is a focal point for the German and European economy. Exports have tanked in recent months due to the lockdown and global pandemic. Since 2015 German car exports have averaged 331,000 cars per month, this year exports have averaged 180,000 units a month, and April saw exports of only 17,600 cars; in May this figure improved to 101,000 cars. Stimulus packages in Germany have been criticised by German automakers recently. Even with stimulus packages, cars are a luxury good, and while Chinese sales are recovering, we believe sales will be muted due to the loss of income as a result of the lockdowns and uncertainty surrounding future employment due to the recession.

Mine suspensions due to COVID have starting to unwind, improving the availability of material. Most lead supply coming from secondary, e.g. in the US 80% of lead comes from secondary, compared with around 60% globally therefore even if mine supply improves we would need to see a recovery in secondary collections as well to confirm improving supply. According to the International Lead Association, the reduced processing at plants also tightened the lead market. Indeed, as orders improve this will increase tightness in the market. As smelters in China start to reopen, exemplified by the rising operation rates this will support primary and secondary supply, discounts for secondary lead are RMB150/t, and smelters discounts were deeper as flat prices rallied. Capacity for 2020 is higher on a year-on-year basis in China as both old and new capacity is available, however, due to the coronavirus and smelter shutdowns in Q1, production will be down on the year. The next couple of months remain uncertain due to the threat of another wave of the virus, but at the time of writing the virus is not reappearing in lead-producing provinces. Our base case is that output continues to recover for the remainder of the year; while the risk of capacity shutdowns is relatively high, we expect output to normalise with operation rates. Operation rates for ignition lead- acid batteries increased again in May to 77.16%, backup battery producers have recovered the strongest to 81.59% in May. Lead-acid battery producing operation rates are slightly behind the curve at 71.7%, but the improvement is still notable. We could see rates tail off slightly during the summer months as they are traditionally quiet.

China Battery Operation Rates

Lead-acid and backup battery producer operating rates return to normal levels.

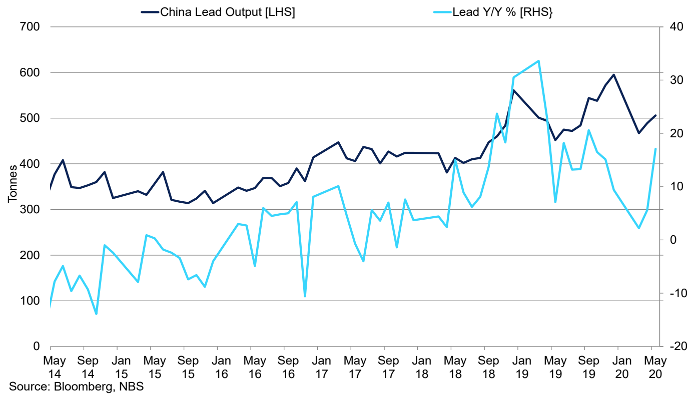


Source: Bloomberg, SMM

Secondary smelter operation rates are low due to weak availability of battery scrap; rates averaged 50.4% up to June 24th. Some provinces' operation rates were lower than 50%, for example, Anhui Dahua. Maintenance at Guizhou and Jinglong has finished, and this could see production start to improve. Primary smelter operation rates were unchanged for the week to June 24th at 52.7%, according to SMM, Henan, Hunan and Yunnan provinces were at 62.9%, 38%, and 45% respectively. Imports of Chinese ore/concentrate have been weak in recent months, peak imports for 2020 were in February when the total was 9,617 tons compared to 4,692 tons in May. The cumulative total of imports so far in 2020 is 19,341.6 tons, incidentally the total number of imports for lead ore and concentrate for May 2019 on a tonnage basis was 20,132.3 tons. Last year did not have the supply chain problems we have had in 2020.

Chinese Lead Output vs Chinese Output Y/Y

Chinese production trending higher, Y/Y output in lower level growth.



Source: Bloomberg, NBS

Chinese lead production has started to recover, NBS data outlines that output for May was 506,000 tons; this was up 17.1% y/y. Chinese output has been improving in recent years; in Q4 2019 production averaged 568,000 tons compared to 500,000 tons in Q3 2019. We expect this to remain the case for the remainder of the year with output looking to return to the December 2019 highs at 595,000 tons. On a year-on-year basis, we have seen an output increase despite the coronavirus. Mine output for China has fallen from 2019 levels due to the coronavirus, South America seems to be the epicentre of the virus at the time of writing, and as miners attempt to contain the pandemic, we see mine supply falling in South America by 20%. We would anticipate this to reverse in 2021. The freezing of the secondary market and lack of new material as Chinese demand improved caused off-exchange inventories to fall significantly in China to 8,000 tons as of May 8th from 42,000 tons on February 21st. Since April we have seen stocks increase to 29,700 tons as of Wednesday June 24th, as smelter production increases but demand outside of China remains benign.

Nickel

LME Nickel 3MO ($)

Source: Bloomberg, 22.07.2020

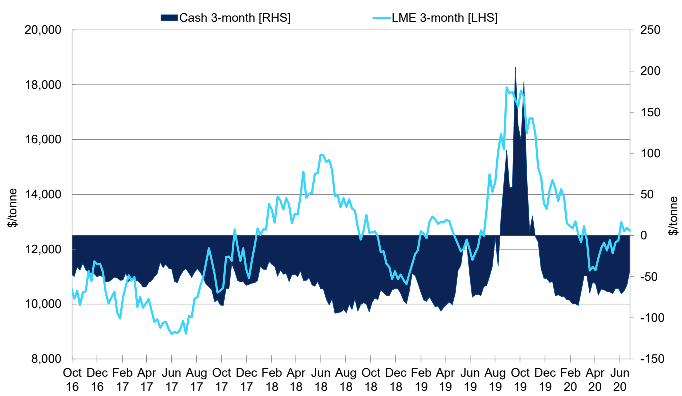
Summary

Stainless steel demand and therefore nickel demand from the aerospace is likely to remain week in the near term. With production remaining elevated and demand weak, we may see inventories build, in turn suppressing prices. We anticipate exports of ni ore from the Philippines will rise again in May, after the 25% increase m/m to 1.68m tonnes, helping to alleviate some moderate tightness. Nickel ore inventories have started to rise at ports in China to 8.08m wmt as of Friday July 3rd, import losses caused bonded stocks to increase recently.

Q2 Recap: Nickel prices recovered in Q2 along with other risk assets as investors looked through poor economic data, towards a recovery in China and extensive stimulus from central banks and governments. Indeed, prices gained 11.89% in Q2 bring YTD losses to 5.94%. The rally in risk assets, led by US equity markets and copper indicate false optimism in the underlying economies. Cheap credit, retail flows and significant stimulus have supported assets. LME and SHFE inventories have diverged in 2020; SHFE deliverable stocks fell by 21.95% to 28,639 tonnes from February to July. Conversely, during the same period, LME inventories have increased 7.7% although this came in the month of February with stocks consolidating since. Prices in China have continued to edge higher in recent weeks with the #1 contract reaching RMB106,550/t as of July 7th.

LME 3-Month Prices vs Cash to 3-Month Spread

Nickel prices rallied in Q2 but failed to kick-on despite the moderate tightening in the cash to 3-month spread.

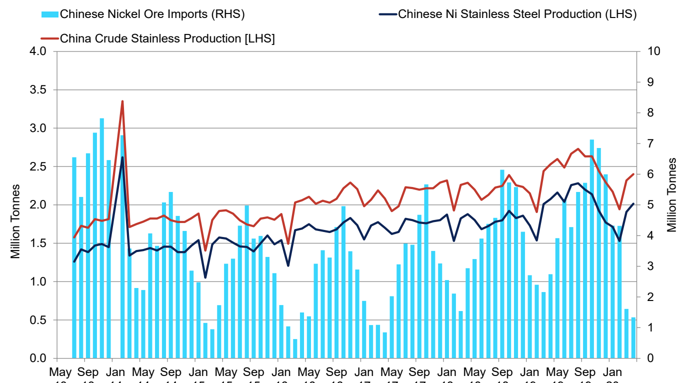


Source: Bloomberg

Outlook: Stainless steel output has started to recover following the decline in production Q1, while it is worth noting that there is a seasonal fall due to Chinese New Year, it goes without saying that this year was more pronounced. We expect stainless production to continue to trend higher in Q3, despite recent maintenance cuts which were announced by small and medium mills. The maintenance is expected to take place during July due to weak profit margins. The omnipresent threat of weak stainless demand, especially during the summer period, will add to headwinds for the stainless market. Even though the maintenance will take place, we expect Chinese Ni stainless production push back to 2.2/2.3m tonnes in the coming months, if losses continue to worsen, we may see more maintenance from mills. Stainless production is coming off the back of a year where production increased 10% to 29.4m tonnes, according to Stainless Steel Forum. With maintenance taking place in small and medium mills, it is a chance for large producers to turn the screw by keeping output constant, giving rise to stainless inventories and capping gains.

Chinese Nickel Ore Imports vs Stainless Steel Production

Stainless steel production rebounded strongly, and is expected to continue.

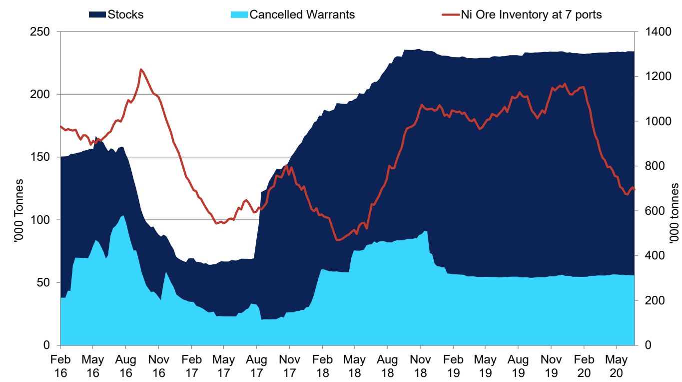


Source: Bloomberg

Stainless production is expected to trend higher, but we expect demand to remain weak, another area of weak demand for nickel is aerospace. The aerospace sector has been one of the worst hit by COVID-19, exerting downward pressure on demand for stainless. Aerospace powerhouses such as Boeing, Airbus, and Rolls Royce are losing orders and jobs after travel ground to a halt. Even though tourists can travel, it is at significantly reduced capacity and prices which will not improve profits. Airbus is expecting to cut 15,000 jobs, to cut costs after revenues ground to a halt; the company have suggested they will cut 11% of their workforce, the company have not received an order for an aircraft for three months, with total net orders at 298 for 2020. They are also reviewing one of its production factories in North Wales; the company has three plants at its Boughton facility which predominately produce plane wings. Avalon has cancelled orders for 27 Boeing 737 Max aircraft, just after they settled most of the Lion Air 737 crash claims. We do not expect orders for new aircraft to increase anytime soon, and with some airlines going bust we could see companies purchase these older planes with some even going to scrap.

LME Nickel Inventory s vs Ni Ore Inventory at 7 Major Ports in China

Nickel inventories at 7 of the top Chinese ports fell sharply as supply chain faltered.



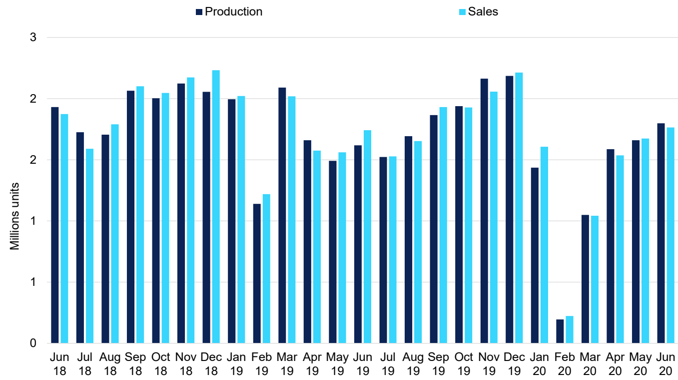
Source: Bloomberg

Chinese nickel pig iron mills are increasing their operating rates, according to SMM. July's operating rate is forecast to be 68.2%, an improvement in the last month. This could see nickel pig iron production increase once again on a month on month basis in China, NPI output increased 0.81% in June to 44,600 tonnes and was 9.85% lower y/y.

High-grade NPI production was higher on the month at 37,500 tonnes; we anticipate production to edge higher in July. However, it is Indonesia that is increasing nickel at a rapid pace. The decision to ban nickel exports has led to an increase in exports for ferronickel. This is expected to increase further in the coming years as potentially more than 10 RKEF lines that are under construction now will be operational by year-end, with 12 more planned. This will not impact Q3, but it is the outlook for things to come and gives context to the speed at which Indonesia is ramping up production. We expect this rate to continue. Having said that, the nickel output for 2020 is expected to decline due to the ore export ban from Indonesia by 2.9% to 2.28m tons according to Wood Mackenzie. Refined nickel output is expected to increase to 2.46m tons in 2020 due to the expansions in Indonesia. According to SMM, two new production lines of Ferronickel in Weda Bay Industrial Park started in June, and the lines are able to produce 800 tonnes per month. The lines are phase 1 of a project by Zhenshi Group and Tsinghan; the four lines will have an annual output of 35,000 tonnes.

China EV Sales vs Production

Rebounded strongly with the help of new government policy.



Source: China Association of Automobile Manufacturers

EV sales have suffered due to the coronavirus, the loss of earnings due to redundancies or the increase in savings ratios across major economies suggests an unwillingness to purchase big-ticket items such as autos and therefore EVs. As uncertainty subsides, we expect to see EV sales improve on a month on month basis once again. This is exemplified by May EV sales in China, sales recorded the best month this year with PEV sales representing 4.4% of market share, total auto sales were positive for the month for the first time in 2020, this continued in June when sales reached 1.68m units up 6.5% y/y. However, NEVs were down 38.7% YTD in May and 23.5% y/y again, on a month on month basis were stronger at 12.2%. PHEV sales were significantly stronger on a y/y basis according to China's association of automobile manufacturers, with sales up 664% y/y in May but remained down YTD by -19.4%. In June, NEVs fell 35% y/y to 85,600 units, but battery EVs sales were 67,000 down 40% y/y. Tesla is gaining momentum in China; they made up 23% of EV sales in China in June, selling 14,954 Model 3 cars. Even though Tesla recently signed a deal with Glencore to supply cobalt for their 8:1:1 batteries, they also recently got approval to build the Model 3 with lithium-ion phosphate (LFP) batteries. This, in conjunction with CATL moving towards LFP, could indicate some softness to the nickel content in batteries. It is worth noting that there are lots of different battery technologies in development; most have nickel in order to improve energy density.

Tin

LME Tin 3MO ($)

Source: Bloomberg, 22.07.2020

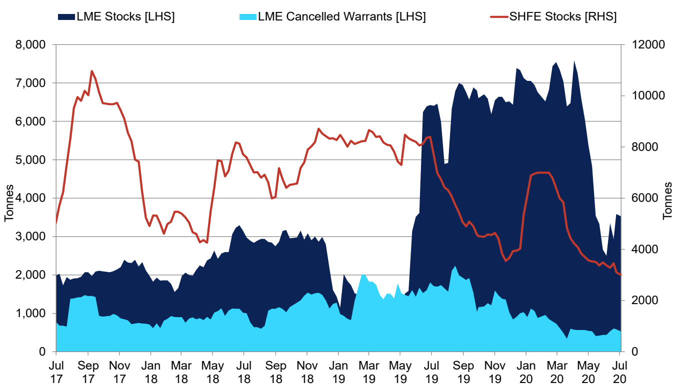
Summary

Mine supply has struggled since Myanmar was disrupted. Imports of refined material and ore & concentrate have been strong, and this is expected to continue given the strong SHFE prices. Semiconductor sales have been strong so far in 2020, and we believe sales will continue to be strong for the remainder of 2020, with potential support in the U.S. from government bills. Smartphone sales are showing signs of recovery as well, but the uncertainty surrounding employment in the long run, and the ending to COVID unemployment support schemes may act as a headwind.

Q2 Recap: Tin prices recovered well in Q2, gaining 16% and closing H1 2020 down 2.6% YTD at $16,690/t. The recovery from the low was 31.4%, and this exemplifies the improvement of risk appetite as economies boosted prices as funds flowed into the metals complex. SHFE prices gained 15.2% in China in Q2 and closed H1 2020 at 138,080 tonnes. Solder demand suffered as a result of the pandemic in H1 2020, impacting tin consumption. However, China's recovery is ahead of the ROW, and this could support solder demand in the near term through demand for electronics, and semiconductors. Like other consumer goods, the lack of earnings due to high unemployment levels could provide headwinds to demand. Indeed, until there is more certainty surrounding employment and earnings, mobile and PC sales, for example, may struggle.

LME & SHFE Stocks

LME stocks started to increase in recent weeks, but SHFE inventories have been falling since March.



Source: Bloomberg

Tin was supported by mine suspensions as countries tried to contain the virus. The tightness of supply was already an issue, and the reduced availability of concentrate compounded the issue. LME inventories declined 41.9% to 3,605 tonnes, the low was 2,425 tonnes at the beginning of June, but we saw some inflows last month. These have continued in recent weeks, but most inventory remains on warrant at the time of writing.

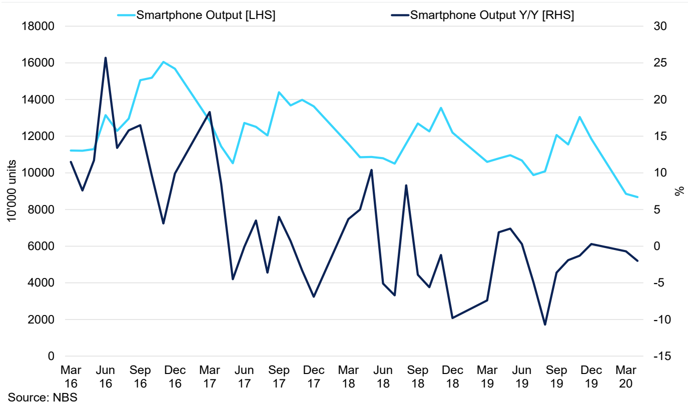
Outlook: The PHLX Semiconductor Index surged higher since our last report, gaining nearly 40% in Q2, and 71% from the YTD low as of July 13th. The index is making record highs once again, as retail flows and extremely accommodative monetary policy from central banks helping indices. This sets to continue in the near term as risk appetite has returned; however, there remain strong questions over the demand for semiconductors due to COVID-19.

Technology firms have been well supported in recent months with many money managers suggesting a speculative bubble when you look at the underlying economics of the global economy. The current P.E ratio increased from 23 at that time of our last report to 29.19 as of July 13th, just off the 2016 level of 29.57. Gross margins per share is 52.54%, as the estimate for the return on assets for 2020 is 14.78% and return on common equity is forecast to be 24.45%, both below 2018 levels.

Despite the suggested weakness in the semiconductor and chip space, we saw some strong demand for Samsung chips in Q2. Samsung electronics beat Q2 forecasts despite the pandemic as consumption for server chips from data centres remained elevated as companies shifted to working from home and needed more server and storage space. Samsung sales were 51.6trn won for Q2 with an operating income of 6.8trn won. We expect a more granular breakdown of performance data in the near term, but there are early indications that demand for smartphones was recovering in June. A recovery in smartphone demand in Q3 would help demand for solder and therefore tin; however, Samsung's chip business may not see same strength in Q3 as companies who purchased additional server capacity, or memory will not need to do so again.

Chinese Smartphone Output

Chinese smartphone output has started to increase; 5G networks may buoy sales.



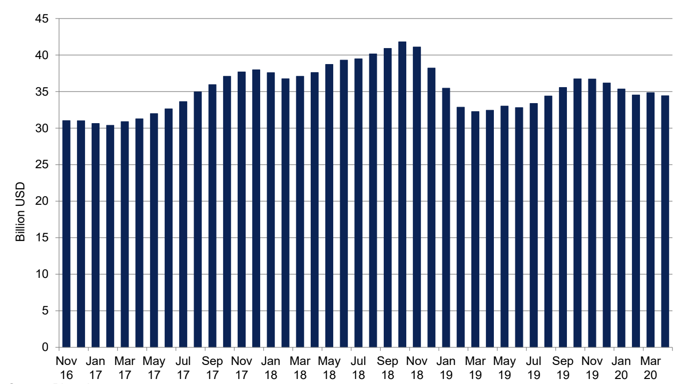
Source: NBS

Semiconductor sales across the world recovered in 2020 and have shown resilience to the pandemic. According to The Semiconductor Industry Association (SIA), sales in May were $35bn up 5.8% y/y and 1.5% m/m which totalled

$34.4bn. Uncertainty remains but sales figures from across major regions of China, Japan, and the Americas increased by 5.8%, 2.8%, and 1.9% respectively on a month-on-month basis. European sales were lacklustre, declining 6.5% m/m; however, the y/y figures are generally stronger with the Americas increasing 25.5%., China up 4.9% but once again Europe was a weak spot with sales declining 12.9% y/y. The World Semiconductor Trade Statistics estimate that the semiconductor sales are expected to increase 3.3%y/y in 2020 to $426bn, with the market expected to improve a further 6.2%. Integrated circuits are forecast to grow 5.3% in 2020, and as mentioned above, memory chips are forecast to rise 15% in 2020. Chinese output of optoelectronics is down 25.2% y/y in May according to NBS, outlining the weakness in the market this year.

Global Semiconductor Sales

Sales are improving; China, Japan, and the Americas lead the way with Europe lagging behind.

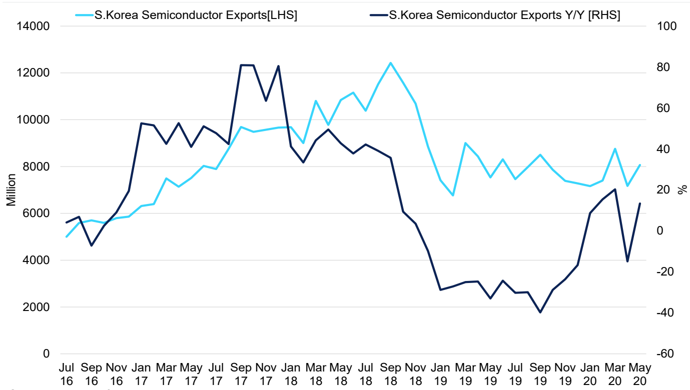


Source: Bloomberg

The U.S. Congress is looking to pass two bills which will support semiconductors, the first of which is Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Act. This bill would create 40% investment credit to 2024, reducing to 30% in 2025, and 20% in 2026 before being completely phased out in 2027. A $10bn programme would also be introduced to incentivise companies to increase lab building and R&D. Secondly, the American Founders Act 2020 will aid semiconductor manufacturing with grants for companies. There is a maximum grant of $3bn per state, and there is another aspect of the act which will mean grants are put towards funding production facilities.

S.Korea Semiconductor Exports

Exports stuttered in recent months due to COVID but are starting to improve.



Source: Ministry of Trade, Industry and Energy

Chinese customs data shows a huge surge in refined tin imports in May 2020 of 1,762% from May 2019, importing 3,674 tonnes. Most of the imports came from Indonesia and then Bolivia Exports totalled 503 tonnes suggesting that Chinese disappearance was 3,171 tonnes. YTD imports of refined tin through to the end of May reached 7,697 tonnes y/y with exports at 1,935 tonnes; China has become a net importer since September. From a raw material perspective, imports of ore and concentrate in May were 14,875 tonnes (gross weight). According to the International Tin Association, the estimated tin content these imports was 3,100 tonnes up 19% m/m and 24% y/y. Border controls continue, and mine supply may be restricted in the immediate term due to lack of workers, Myanmar's lockdown was extended for mass gatherings once again to July 31st. Refined tin output reached 12,490 tonnes in June according to SMM, an increase in 6.5% in May.

Mine supply has been impacted to COVID, and this will start to improve as lockdown restrictions ease. However, despite the recent strong Myanmar exports of ore and concentrate in May, there has been a longer-term trend of less availability. Key producers are reducing their targets for 2020 with PT Timah reducing their target to 55,000 tonnes. PT Timah invested in $80m worth of construction equipment in West Bangka, but as of the beginning of July, the contractors were not able to enter Bangka. Alphamin and their Bisie mine have indicated that Q2 production reached record levels, concentrate production reaching 2,739 tonnes up 29% q/q, and grades were high. Full-year targets for Alphamin were 9-10,000 tonnes of tin concentrate. The tin grade extracted so far this year has been 3.9%, with an average recovery rate of 69.9%.

Zinc

LME Zinc
3MO ($)

Source: Bloomberg, 22.07.2020

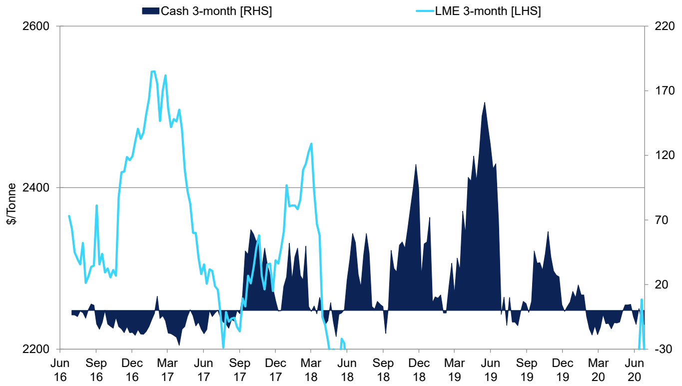
Summary

Zinc off-exchange stocks 201,000 tonnes down from 294,000 tonnes, but according to NBS data, Chinese Zinc production has picked up again. With the demand outlook softer for zinc than other metals, we could see inventories increase in Q3. TCs have stabilised, and as mine suspensions come back online and availability improves, we expect TCs to recover. The cash to 3month spread remains rangebound, exemplifying the softer demand outlook. With refined production in China good as well as a softer ROW consumption outlook, and the potential of rising inventories, we expect the spread to remain on contango unless we see another wave of mine suspensions.

Q2 Recap: LME prices recovered somewhat in Q2 as optimism surrounding the relaxing of lockdown restrictions started in China, then spread to the US and Europe as we went through Q2. While economic data is still weak on a historical and y/y basis, m/m data is starting to improve. We expect economic data to remain weak in the near term, and recent data in the US has added confusion to the situation. Consumer demand remains weak, and the threat of a second wave in the US will add to the recent headwinds. LME prices gained 7.76% in Q2, but YTD prices are still down 10.06%. LME inventories have climbed as demand remains weak across the globe, YTD gains are up 139.2%, and QTD is 67.56% as material flows into warehouses, but SHFE stocks have declined 38.94%. The import arbitrage for spot and down the curve is offside; Zinc spot import arbitrage is RMB453.18/t with the SHFE/LME ratio at 8.23 as of July 2nd.

Zinc 3-month Price vs Cash-3-month Spread

Cash to 3-month spread remains rangebound despite the 3-month contract gaining ground.

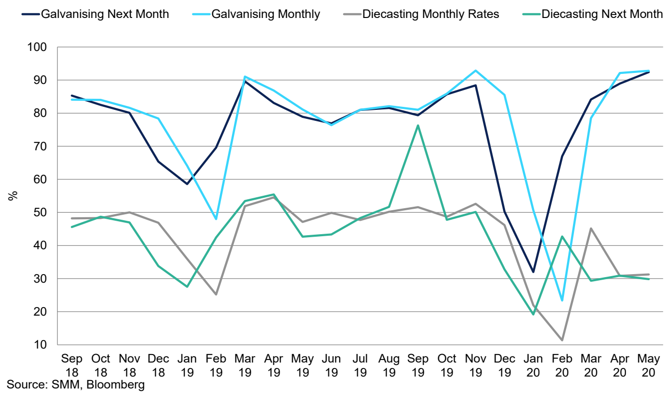


Source: Bloomberg

Outlook: The weakness in zinc consumption has been palpable in H1 2020, and while we have seen some positivity return to the base metals complex in the Q2, zinc gains have been slightly more muted. Chinese manufacturing PMIs suggest that recovery has been strong, and the sequential reading shows Caixin PMI expansion in the sector in recent months, with readings of 50.7 and 51.2 in May and June, respectively. Export orders remain weak and are contractionary at 42.6 in June, the weakest of all indices, stocks of finished goods were at 46.8. The output PMI was 25%, we expect the growth to continue exemplified by the improvement and return to y/y growth for industrial production, which was 4.4% in May, up from 3.9% in April. Outside of China remains weak, and in Europe, lockdowns have been managed with a firmer hand than the US., and while data from America is improving, and investors are looking through the weakness and rising cases in recent weeks. A second wave will threaten the recovery and will likely cause the economy to run at a lower capacity for longer. We envisage the themes for H2 2020 to be how much demand can offset the losses in H1 2020; how will economies prevent the threat of a second wave?

Zinc Operation Rates

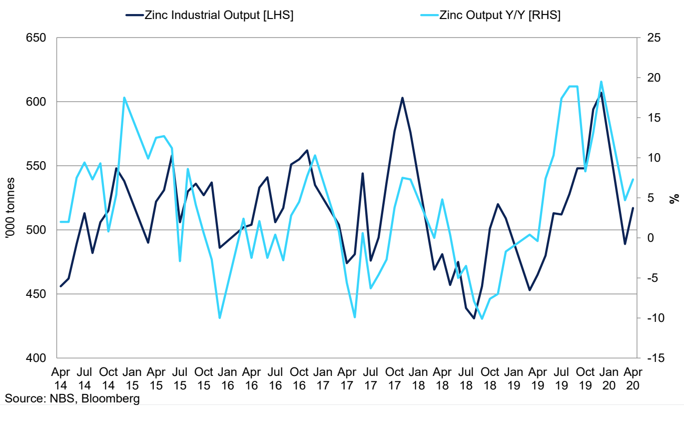
Galvanisers operation rates recovered well in recent months, contra to diecasting.



Galvanised steel is the primary use for zinc, so infrastructure stimulus will improve demand, and this should offset the losses incurred in H1 2020. Chinese exports of hot-dipped galvanised plate strip fell significantly in May to 582,257 tonnes, down from 987,709 tonnes in April. The recent high was 1,049,449 tonnes in April 2019, May's figure of 582,257 tonnes was fractionally above the 2018 low of 563,512 tonnes. As demand outside China starts to recover, we could see exports improve; the manufacturing PMIs are also starting to recover across the globe, which will raise raw material consumption. Zinc galvaniser operation rates have recovered well in May to 92.82%, according to SMM. Next month's operation rates are likely to remain elevated supporting zinc demand galvanising comprises about 50% of zinc demand, and the declining inventory days of galvanisers' raw materials to 9.9 in May from 14 days in February outlines the increase in operating rates. Diecast zinc alloy producers continue to operate at a lower rate, but this is something that has been the case for months. Operating rates for May and June stand at 31.25 and 29.83 respectively; the inventory day of diecast raw materials have been falling since January from 10.6 to 5 as of May 2020

Zinc Output vs Zinc Output Y/Y

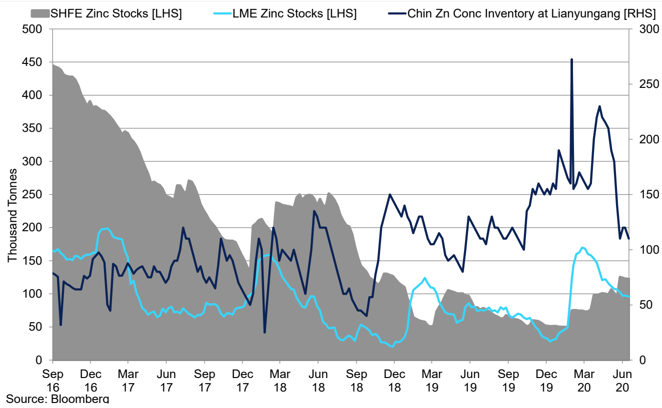
Output has fallen from the heights of Q4 2019 but Y/Y growth remains.



Chinese industrial output of zinc has remained resilient on a y/y basis, May's production was 514,000 tonnes down from 517,000 tonnes in April. On a year-on-year basis, zinc output growth was 7.3% and 4.5%, in April and May, respectively. Zinc production has been strong due to the availability of concentrate despite the mine suspensions due to COVID-19. The National Party Conference has shown that the infrastructure budget and more specifically railway expenditure will increase by 100bn to 900bn yuan. The new urbanisation plan in China will renovate 39,000 residential communities in 2020, which will support demand for galvanised steel and zinc. In addition to the increase in stimulus, local government special bonds will be spent on infrastructure projects, helping to offset the losses of consumption in H1 2020 it is too early to fully quantify the loss of consumption, but the picture will become clearer in the coming months. The property market has shown signs of improvement, land sales in China's top 30 cities improved significantly in April to 36.25%, up from -22.36% in March, May's figure was still positive but was slightly softer at 12.78%. This suggests that we could see stronger demand for galvanised steel in the coming months.

LME Stocks Vs SHFE Vs Zinc Concentrates at Lianyungang

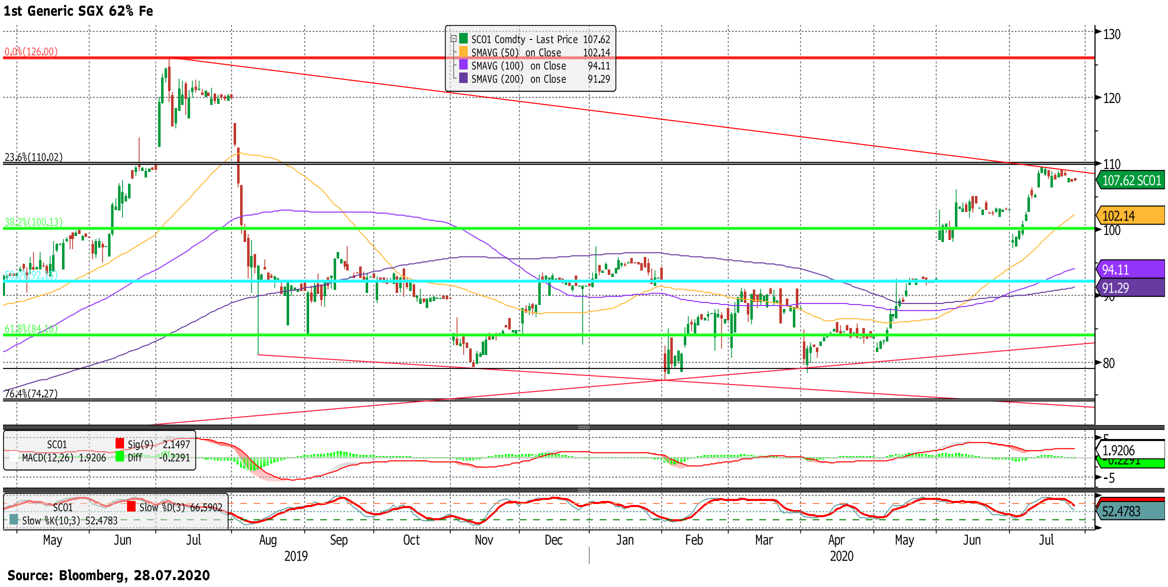
Mine suspensions reduced concentrate supply causing a drawdown in inventory, but LME stocks increased.



Mine suspensions as a result of the coronavirus were predominately in Latin America, especially Peru and Bolivia. Peru has just come out of lockdown, and this will improve supply, this recovery may provide downside to the zinc prices. According to Wood Mackenzie mine capacity losses could total 878,000 tonnes in 2020, the majority was in Latin America, but in South Africa closed pit mines were able to run at 50% capacity with open pits at 100% from April 17th. Chinese mine production has remained relatively resilient, and according to Wood Mackenzie suggest output to reach 5m tonnes in 2020, the global mine capability is forecast to decline this year vs 2019, but the total extent is unclear with some mines still suspended. Concentrate supply has been strong due to the improvement in availability in the last year this has seen inventories decline exemplified by the decline in Lianyungang, which fell from 230,000 tonnes on April 24th to 120,000 tonnes on June 24th, helping to keep the output of zinc well supported. Chinese zinc concentrate output increased in recent months to 320,190 in June, with imports of zinc ore falling slightly in May to 356,694 tonnes from 460,647 tonnes in April. Despite the mine suspensions imports have been relatively well supported, TCs for imported zinc concentrate have stabilised in May and June and stand at $160/t as of July 3rd (50% CIT) the domestic TC has also bottomed out to RMB5,150/t. We expect TCs to start to improve as availability increases.

Iron Ore & Steel

1st Generic SGX 62% Fe



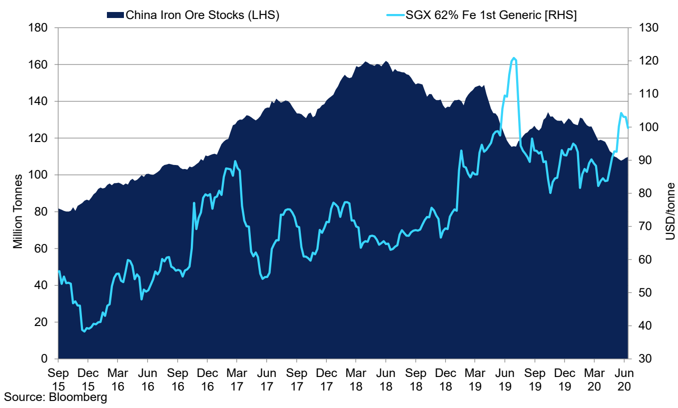
Summary

Strong steel demand in China supported iron ore in recent months; however, the threat of weaker high-quality fines from Brazil saw prices break above $100/t. Experts suggest the virus is yet to peak in Brazil, but mines are looking to run at reduced capacity, an improvement to the current suspension. In Q3, we expect mine supply to trend higher, alleviating some tightness in the market which has seen Chinese port stocks fall. Fiscal stimulus packages targeting infrastructure will support steel demand, and therefore iron ore. We expect seaborne supply into China to remain elevated; we look to Chinese exports and European production as an indication of a stronger ROW steel market.

Q2 Recap: Iron ore prices were well supported in Q2 as the Chinese stimulus increased demand for steel and there were concerns surrounding seaborne iron ore due to supply chain issues. The first generic SGX TSI Iron ore CFR China (62% fe) futures gained 24% in Q2 and broker above $100/t. Buying pressure has continued into Q3, and we are testing $108/t at the time of writing. Demand for high-quality fines remained strong and spreads remained elevated; we expect this to continue in Q3. Fixed asset investment in China increased by 1.2% y/y for the first half of 2020, up 38bn yuan with the investment for in railway infrastructure at 245.1bn yuan up 3.7% y/y. The active contract for SHFE rebar has continued to increase this year, up 7.4% to July 13th and 20.5% from the year's low.

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

Port stocks have fallen due supply chain issues and strong steel demand, helping to support prices.

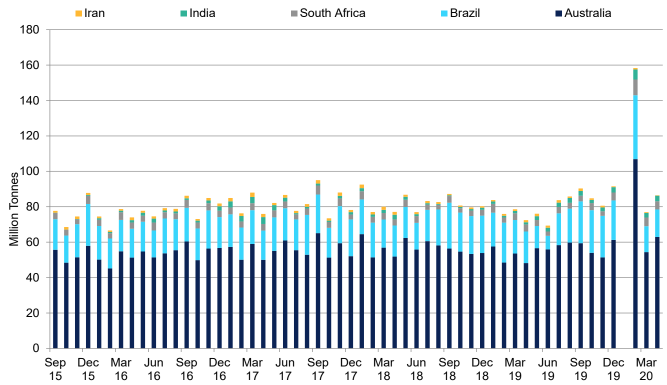


Outlook: Consistent with our previous report, iron ore prices have trended higher as Brazil's shipments of iron ore were impacted by the virus. Global ports data suggests that Brazil's exports to China in the first 6 months of 2020 have averaged 2.180m tons per week vs 3.174m tons per week for the last 6 months of 2019; on a global scale, Brazil's iron ore exports were 4.866m tons per week for the first 6 months of 2020 vs 6.096mn tons per week for the last 6 months of 2019. The curtailment of exports has provided support for iron ore prices on the SGX exchange and local spot prices in China. The decline in Brazil's exports is attributed to the suspension of mine production, specifically Vale. A Sub-Secretariat for Labour Inspection issued a term of Suspension of Interdiction for the Conceicao, Caue, and Periquito mines. According to the Vale website, the suspension from June 5th, 2020 will impact production by less than 1m tons, their guidance for the Itabira complex remains at 310-330m tons for 2020. In the same week, Vale released that they would look to restart production at Voisey's Bay mine in Canada. Latin America and Brazil are the epicentres of the virus, at the time of writing and, while some mines are looking to restart operations, this will be at reduced capacity due to social distancing rules and logistics. Global Ports data shows that total exports from Brazil to China improved in May to 11.8m tons from 11.7m tons in April. We expect exports to remain around 11m tons in the near term.

Following the weak trade figures for the first 2 months of 2020, Australian exports to China have steadily improved and totalled 66.6m tons in May, up from 62.9m tons in April. So far in June Australian exports have reached 35.2m tons, the improving availability of medium fines has triggered the spread for FOT Qingdao 58% to 62% fines has softened slightly to -$8.9/t as of June 22nd from -$11.2/t in March, the CFR Qingdao spread for 58% to 62% fines has tightened into -$9.9/t from $11.4/t in March. However, when we look at the high-quality fines the spreads remain elevated but have tightened, e.g. the Fe fines CFR Qingdao 58% to 65% stands at -$27.9/t as of June 22nd compared to -$29.4/t in March. As mentioned in our previous report, spreads have remained elevated due to the curtailment of mine production, and stronger demand in China.

Top 5 China Iron Ore Imports

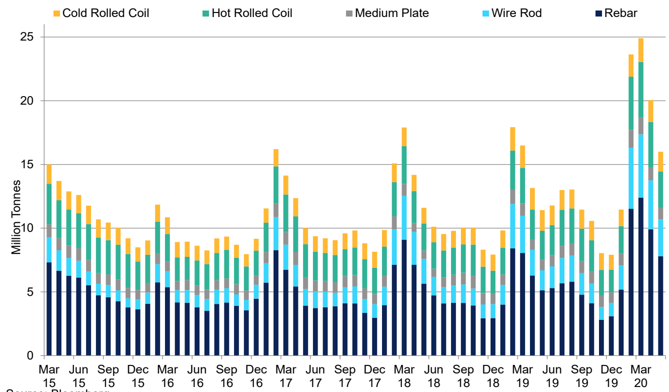
Data indicates imports were marginally softer, but it is the quality of the fines, which is important.



Source: Bloomberg

Chinese Finished Steel Inventories

Finished steel inventories are historically high for this time of year, but we expect them to draw down in Q3.



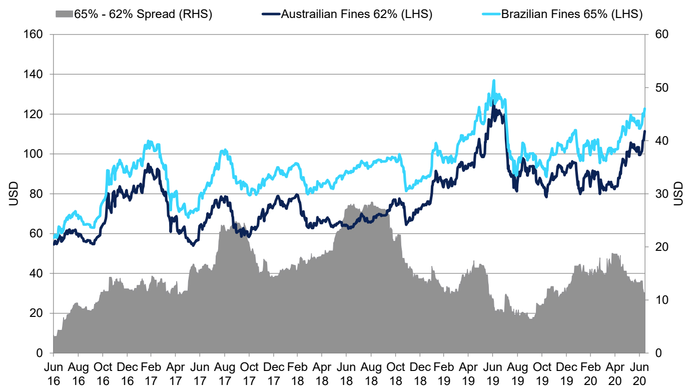
Source: Bloomberg

We have seen tensions between China and major iron ore exporter Australia increase in recent weeks, following comments from China about a rise in incidents on Chinese citizens in Australia. The fractious dialogue continued after the Australian Prime minister acknowledged the very different political systems. China introduced 80% tariffs on Australian Barley, threatening $500m of exports. If tensions escalate further, we could see Brazil increase their percentage share of the market; which is particularly damaging to Fortescue metals. Steel mills prefer the higher-grade ore from Brazil, as it needs less coking coal. There is a propensity for India or South Africa to increase exports to China. Imports of South African iron ore into China have been trending lower since December 2018 when they reached 6m tons since then the highest monthly total was 5.107m tons in January this year, but on average monthly figures have been below 4.4m tons a month.

Operating rates at blast furnaces in Tangshan were at 78.9% for June, and the SMM China steel PMI composite sector fell slightly in May to 53.3 from 57.67 the month prior. The high operation rates of blast furnaces suggest we could see the PMI improve for June. Crude steel output continued to surge higher in May reaching 92.267m tons, up from 85.03m tons in April; data suggests steel production will remain firm. Finished steel production reached 20.369m tons; these figures have been trending higher since the sharp increase in production in March to 18.996m tons from 14.702m tons. Total Long and Flat output reached 58.78m tons in May, data for April was not released. March data shows long and flat output at 52.71m tons. Hot and Cold rolled products saw production at 14.21m tons for both. Indeed, the Chinese steel product output was 114.52mn tons, up 6.2% y/y.

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

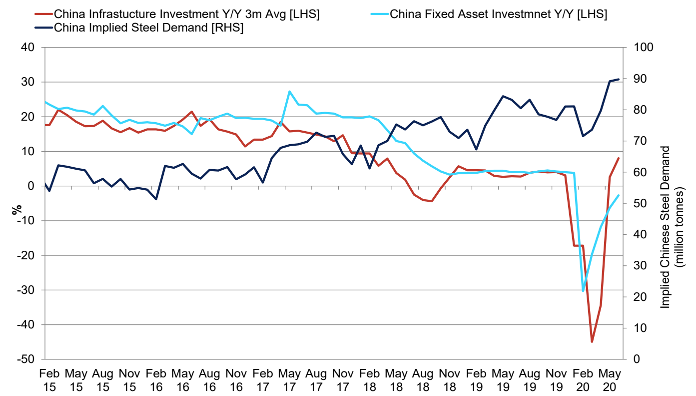
Spread narrowed marginally in the last couple of months but remains on trend.



Source: Bloomberg

China Investment vs Implied Steel Demand

Chinese investment has recovered strongly, and infrastructure investment has buoyed implied steel demand.



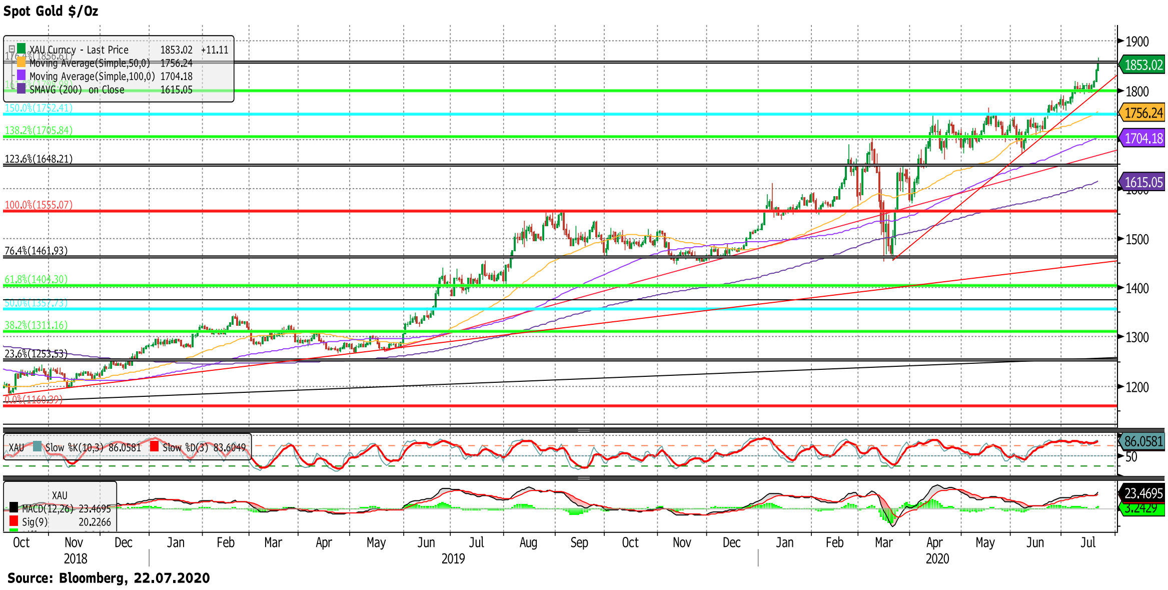
Source: NBS, CEIC,Bloomberg

According to NBS data, Chinese production was 74.64m tons in May 2020 we are hearing reports that Chinese iron ore production is starting to improve due to the lower arrivals of Brazilian seaborne ore. This may cause inventories to fall as the material is withdrawn from ports to help supply the improving steel demand. Steel home inventories have declined 17.57% so far this year, and stand at 108m tons, a large proportion of the inventory is low quality and would need to be mixed with higher-grade low aluminium content to create steel. We expect inventories to continue to fall in the near term as arrivals of seaborne iron ore are impacted by COVID-19. Steel home indicates that 71.9m tons of inventories are being held in north ports, with just under 30m tons being held at the Yangtze River ports. Iron ore days of inventory are averages 4.2 days according to SMM, unsurprisingly Inner Mongolia, Shanxi, and Liaoning are the highest at 7.1, 8.2, and 7.4 days respectively.

Implied steel demand has been increasing in unison with production, May's demand was 89.146mn. Exports for May were 4.4m tons, down from 6.32m tons in April; the lower exports are due to woeful foreign steel demand due to the pandemic may. Outside of China, stimulus packages have been directed to the consumer not necessarily infrastructure and construction; however, as economies are starting to open and construction restarts demand may improve. European steel production has been trending lower for several years, but May production was 10.46m tons. Headline indicators are still negative on a year-on-year basis, but the % declines are starting to decline, showing improving consumption. China's fixed-asset investment for May improved to -6.3% y/y, and Chinese infrastructure investment was positive in May for the first time since December 2019 at 2.56% y/y. China's industrial production was positive in May at 4.4% y/y. Demand in China is strengthening due to the infrastructure expenditure from the government. If other major economies start to increase infrastructure stimulus, this will support demand outside of what is expected on the recovering steel-intensive industries heavily impacted by COVID-19.

Gold

Spot Gold $/Oz



Summary As the virus continued to spread across the world in Q2, investors stormed to gold and other safe-haven to hedge themselves from economic and geopolitical risks. Extension of stimulus packages, along with record-low interest rates are likely to remain for the remainder of 2020, making gold a more attractive investment, as its opportunity cost of holding will remain low. A strong dollar and smoother-than-expected economic recovery, especially in the US, pose risks to gold's rally. Overall, gold is poised for another quarter of growth, yet, slower to the one seen in Q2, as conflicting forces continue to weigh on investor sentiment.

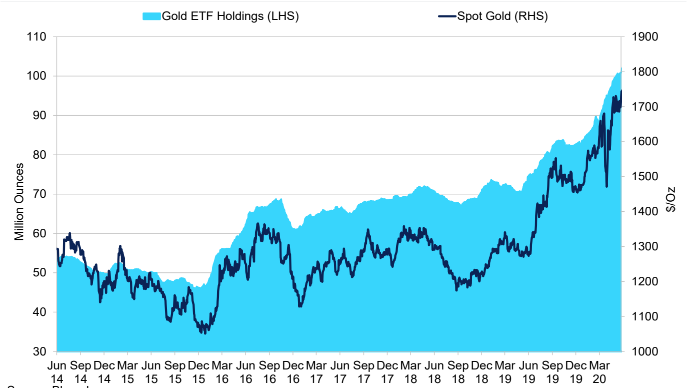
Q2 Recap: Gold extended its YTD gains in Q2, as it rose 13.43% to finish at $1,786.16, a near 8-year high. Gold volatility remains below the record-high levels seen in March 2020, as it continues to outperform other major asset classes. April and May saw the yellow metal trend higher as global concerns regarding the spread of coronavirus and investors sought refuge in the safe-haven. By the end of the quarter, optimism grew as economies around the world began to re-emerge from their respective lockdowns. In Europe and the US, the easing of containment measures gave investors the confidence for a recovery in the global economic outlook. However, as June progressed, this positive sentiment reversed over concerns over increasing cases of COVID-19 in various locations, posing for a second wave. At the same time, while monetary policy has been accommodative for most of the world, the cautious tone reinforced a more general risk-off sentiment.

Gold ETFs closed H1 with a record $40bn in net inflows, taking global holdings to new all-time highs of 3,621t in June. Most of the inflows came from the US, which accounted for 80% of global net inflows, adding 83t, with Europe and Asia following behind. The net length in CFTC futures has been on the back foot, declining from 200,000 contracts in April to 127,000 in mid-June. We are of the belief that the markets were uncertain about gold's trajectory, as conflicting economic forces weighed on investor sentiment.

The unprecedented economic crisis following the COVID-19 pandemic has led to extensive travel restrictions, the partial or complete shutdown of numerous countries, and higher volatility in financial markets than was experienced during the latest global financial crisis. Gold reached new all-time highs in almost all currencies. With regard to the US dollar, the question is not whether an all-time high will be reached, but rather when.

Gold ETF Holdings vs Gold Spot Price

Record ETF holdings have been driving the price of gold as a safe-haven.



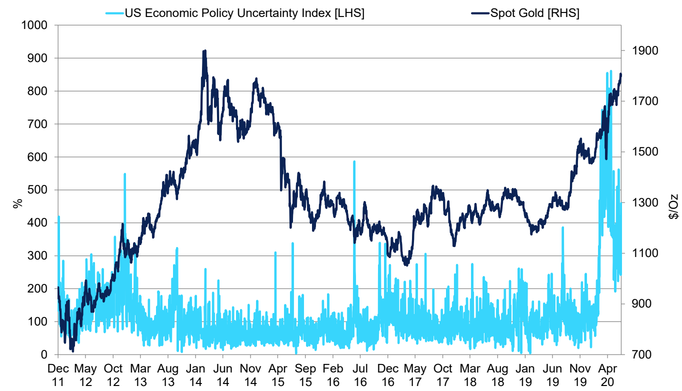
Source: Bloomberg

Outlook: After 11 years of economic expansion, the global economy is experiencing the sharpest recession in over 80 years. The IMF forecasts a contraction in global GDP of 3.0% for 2020, with US and European economies down 8.0% and 10.2% respectively. Unprecedented government stimulus and recovering inflation expectations are likely to support high debt levels for the long term. Indeed, the interventions resulting from the pandemic risk are overstretching debt level sustainability for many countries. As a result, government bonds will be increasingly called into question as a safe-haven, and gold could step in to take on their role.

The current economic and geopolitical environment remains supportive of gold prices. The opportunity cost of holding gold remains low, as continued central bank fiscal injections keep interest rates low or negative, and other countries continue to experience high levels of uncertainty. Indeed, the introduction of yield curve controls in the US will force real yields lower, turning real yields even more negative, as inflationary expectations start to rise. To balance the risk of potential volatility, investors are more likely to stick to gold as a risk hedge.

US Economic Policy Uncertainty Index vs Gold Spot Price

Global economic and geopolitical uncertainty were the main drivers behind the rally.



Source: Bloomberg

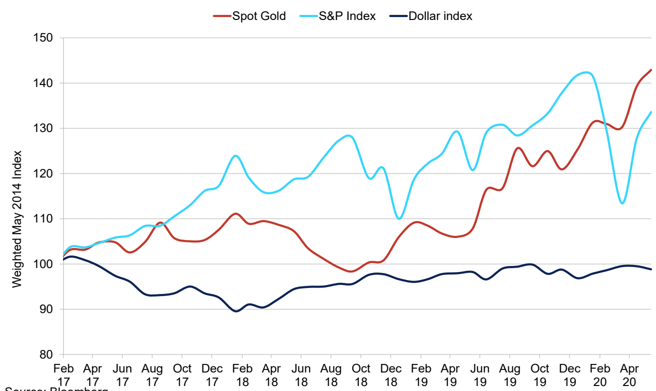
Over the next quarter, gold is likely to face a period of consolidation; however, at a much moderate pace to that seen in Q2 2020, as more economic indicators will start to paint a picture of a global recovery. Noting the absence of major economic indicators at the moment, we believe that any below-forecast or negative economic indicators are likely to be tailwinds to gold. Raised geopolitical tensions on the COVID-19 blame game, the US November elections, and nationwide unrests will only add to gold rally.

Overall, a combination of uncertainties along with central bank monetary easing should support gold as an investment choice for Q3 2020. Firstly, the uncertainty about the second wave of coronavirus-related cases and the scope and scale of the possible vaccine will keep the demand for a safe-haven elevated. Indeed, there are concerns over the trajectory of the COVID-19 pandemic and how it can threaten the economic recovery. Growing infection rates across the world, particularly in the US, suggests a cautious approach before countries can reopen with confidence.

Secondly, economic recovery in the US and Europe is especially critical to precious metal demand. In theory, the deceleration in economic growth and muted demand would be expected to impact on gold consumer demand. Historically, however, investment flows in periods of uncertainty tend to offset weakness in consumer markets. In the long term, gold remains a preferred diversifier given that the dollar is weaker. Additionally, global currency debasements by central banks remain the drivers for gold's bullish outlook.

S&P vs Spot Gold vs Dollar Index

Gold outperforms the S&P since February 2020 as investors urged to safe-havens.



Source: Bloomberg

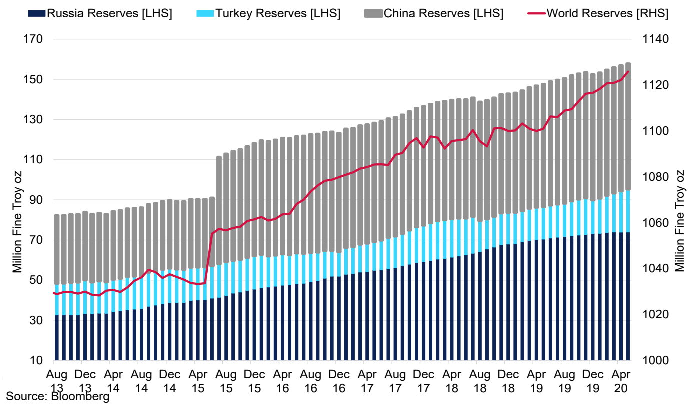
Tailwinds prevail similarly to those we have seen in March. Gold is a highly liquid asset and can be liquidated quickly and at a low cost. If we see persistent increases in volatility (given confirmed the second wave), selling pressure could set in, and gold could be used once again to cover margin calls. The current disinflationary environment is adding a bit of pressure on the price, even though the overall gold market outlook remains positive. Indeed, record ETF holdings could burst, prompting the markets for another round of investor selling. This, however, remains an unlikely scenario, given subdued CFTC net positioning at the time of writing.

In the last decade, there has been a structural change in central bank demand for gold, where developed markets have slowed down their net sales, and emerging markets increased their net purchases to diversify and reduce dollar holdings as a bet against geopolitical risks. And while we see some CBs continue decelerating their level of purchases in 2020, others may use gold, a liquid and high-quality asset, to minimise some of the volatility in their foreign reserves during this time of uncertainty.

In 2020 so far, central banks have bought 181t of gold, down 31% y/y. Nevertheless, according to the World Gold Council, the number of central banks buying gold is expected to increase substantially this year. While spending is likely to continue until the end of this year, it is likely to remain subdued. Central bank net purchases picked up to 39.8t in May, in line with those in March and April, however, above the monthly average of 35t over the first four months of this year. So far, net purchases have been indeed lower, but we have seen several central banks in 2020 allocating more to gold

Central Banks Gold Reserves

Central banks continue to raise their gold content, yet, at a slower rate than before.

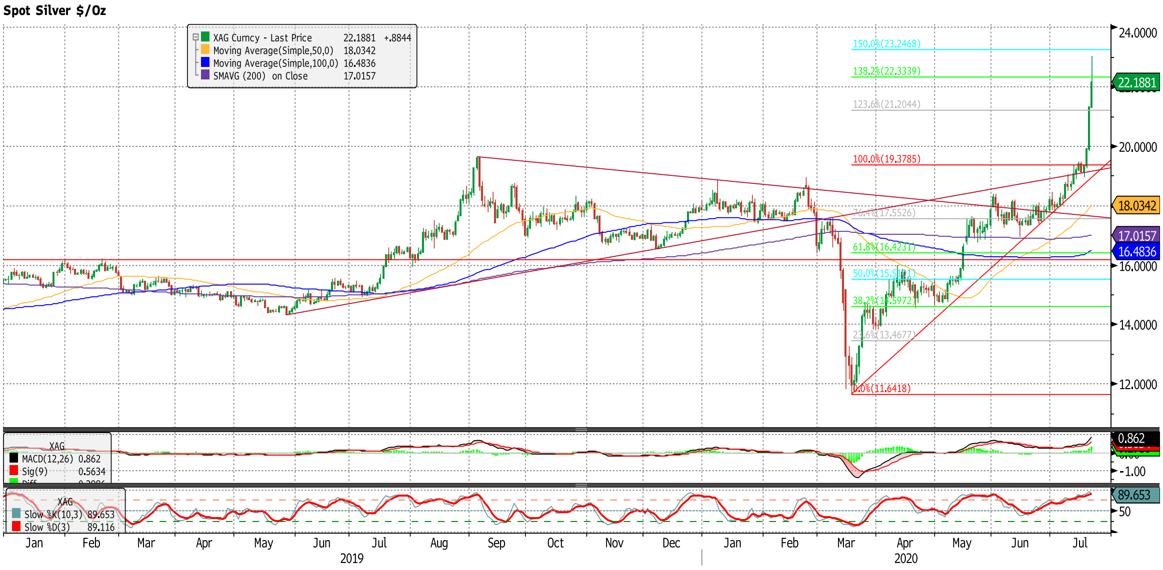


Source: Bloomberg

Meanwhile, demand for other gold products, such as coins, also plunged, especially as gold mines around the world were shut in a bid to slow the spread of coronavirus. The temporary suspension of some mining and refining activities along with stringent travel restrictions created unique challenges to the transportation of physical gold within the market. Demand for gold jewellery, bar and coin remained subdued as Chinese and Indian buyers abstained from spending and we expect this trend to continue into Q3. Additionally, ample physical gold supply could cap gains on gold in this quarter. Overall, while investment constitutes around 50% of gold demand, declines in jewellery, technology, and central bank purchases could pose significant threats to gold rally in Q3 2020. Indeed, gold imports in India, a key gold consumer, plunged to 13.2m tonnes in June, down 76% y/y, as shipments fell to a decade-low. While the transportation sector remains under threat, delivery of physical gold will remain below pre- crisis levels.

Silver

Spot Silver
$/Oz



Source: Bloomberg, 22.07.2020

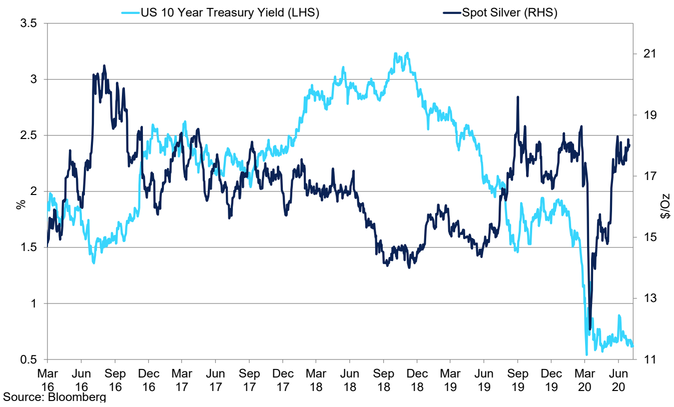
Summary

As COVID-19 continued to spread across the world in Q2, taking a toll on the global economic outlook, silver prices edged higher from March lows to 17.95/oz, gaining 28% during the quarter. Silver was one of the best-performing precious metals, outpacing growth seen in stocks and bonds. While holding onto its safe-haven properties, we expect industrial demand to catch up in the upcoming quarter, as stronger manufacturing and construction performance is seen in China and other developed economies. Similarly, jewellery is on the rise as investors will tend to hold onto precious metals for their safe-haven properties for the rest of 2020 until the global outlook becomes clearer.

Q2 Recap: As the pandemic hit the world economy and debt levels were rising globally, central banks began injecting liquidity into the markets through interest rate cuts and bond purchase programmes, followed by extensive stimulus measures. After taking a hit and dropping to 11-year low in March, the rapid spread of the virus globally threatened the global economy, urging silver prices higher as a safe-haven. Additionally, silver's record cheapness to gold helped drive a recovery in late Q2 2020.

US 10Y Treasury Yield vs Silver Spot

Both 10Y yield and silver fell in March on depressed economic sentiment; however, silver recovered in Q2.



Source: Bloomberg

In particular, demand for silver exchange-traded funds has been strong. Global ETF holdings had risen by 22% in Q2, up to 0.793m, already surpassing the highest-ever annual inflow in 2009. Silver's low cost and easy access raised its investment appeal, and low Q1 prices urged investors to the precious metal. Similar to gold, retail sales of physical silver were affected by supply-chain disruptions, and demand for physical metal was low.

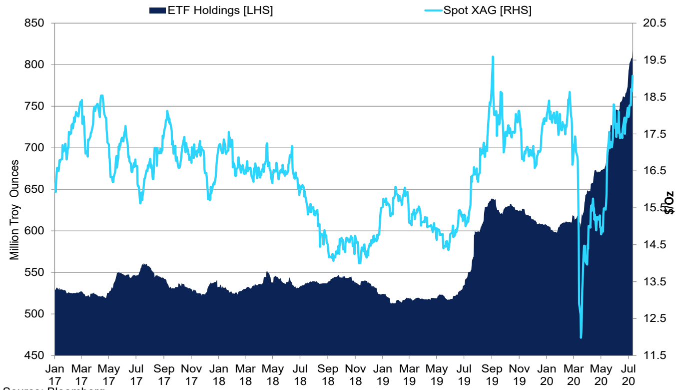
Although the price of silver has increased since the outbreak of the novel coronavirus, its value has held considerably well compared to the US stock market, despite strong historical correlation to the S&P 500. Indeed, silver was on the best performing precious metals in Q2, outpacing the growth of stocks and bonds.

However, poor global consumer demand and a sharp rise in unemployment have weighed on demand in many end- user applications, such as electronics and automobiles, where silver demand comes from industrial use. In the photovoltaic sector, the pandemic spread to emerging countries leading to worsening economic conditions, and therefore, putting pressure on the industry, which had faced project delays and significantly lower installation volumes. Jewellery and silverware have also suffered losses, as a result of lower visitors to retail stores as the appetite for spending took a hit.

Outlook: We see higher silver prices as pressures of the COVID-19 global pandemic subside. While we saw upside momentum in Q2 due to silver being a safe-haven asset, once industrial demand picks up, silver should gain respectively. At the same time, investor demand is on the rise, as shown by record-high silver ETF flows and increasing coin and bar sales. Similar to gold, we expect investment demand to increase because of the unprecedented amounts of liquidity and monetary easing being released into the markets in response to the current pandemic-hit crisis. Once we see a consistent economic recovery, investment demand should tick higher; however, with mine operations back on track, we expect the prices to remain capped in Q3.

Silver ETF Holdings vs Silver Spot Price

Record high ETF holdings supporting a price recovery since March 2020.



Source: Bloomberg

As the pandemic constrained economic activity worldwide in Q2, industrial demand has weakened substantially. In Q3, we see this trend reverse. While world manufacturing PMI remains in the contractionary category, the index showed a sharp recovery from that seen in April. Indeed, in June, JP Morgan world manufacturing PMI picked up to 47.8 from 39.8 in April. In comparison, manufacturing recovered much faster than services due to increased government spending on infrastructure and construction. Additionally, new data out of China, which reopened large parts of its economy, is relatively encouraging, boding well for silver's recovery as an industrial metal.

Silver has underperformed gold for some time, and the outbreak of coronavirus deepened the spread, leaving room for additional appreciation. The bullish outlook for gold should take silver higher. But given its often-volatile behaviour, along with increased uncertainty about the global outlook, we think silver may struggle to recover at the same rate as gold. The gold to silver ratio has softened to 100 by the end of June, down from 120 in highs seen in mid-March, however, and believe that it could remain at elevated levels in the medium-term.

Gold to Silver Ratio

The ratio widened to record highs as silver sold-of in March.

Source: Bloomberg

For the quarter ahead, we expect to see more inflows into silver exchange-traded products (ETPs), as well as net buying by institutional investors, such as central banks, however, at a much more subdued level than in the previous quarter. Driving this behaviour will be amplified interest in gold, and consequently, silver, on the back of macroeconomic drivers such as expansionary monetary stance, other fiscal stimulus measures and concerns about the outlook for the global economy.

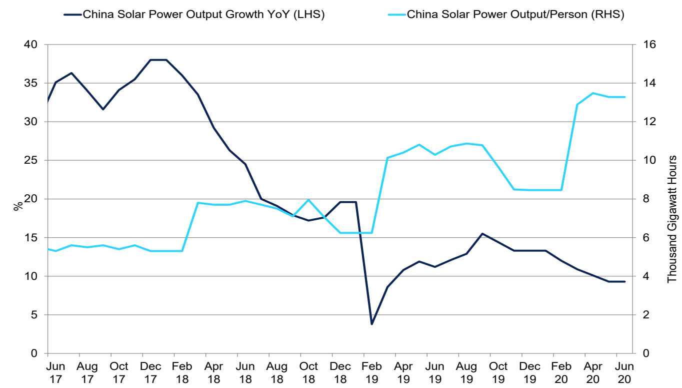
The silver managed money net length increased in Q2 by 101% to 35,731 contracts as of June 30th, driving silver prices. Indeed, the decreasing number of traders trading silver from the short side hit a 2-year low in March at 12,432, when prices were at this year's lowest. With net positioning still below 2019 averages, there is capacity for silver prices to continue to trend higher in the near term as haven demand strengthens.

Moving forward, geopolitical tensions, the global impact of the coronavirus pandemic and changes to the Fed monetary policy stance will be key factors to watch. As the US and China continue to be entangled in extensive trade tensions, and gold climbing persists, silver may be set for a positive 2020 performance. On the other hand, fluctuations in the dollar could affect silver's performance. Although the US dollar is currently strong, the Fed has recently cut interest rates to effectively zero, which could weaken the dollar, and in turn, hamper demand for silver as an industrial use metal while encouraging demand for silver as a safe-haven.

So far in 2020, demand for silver bars and coins has picked up notably, following the price bargain hunting in March, although coronavirus containment measures and supply disruptions have capped sales in some regions. According to the World Silver Survey, demand for silver bar and coins is supposed to rise 16% in 2020, as investors rotate out of equities in search of a safe-haven. In 2020, mine production is expected to fall 5% to 797moz, while overall global silver supply is expected to sink by 4% to 978moz, the lowest level since 2009.

China Solar Power Outlook

The solar industry has picked up thanks to increased construction activity in China.

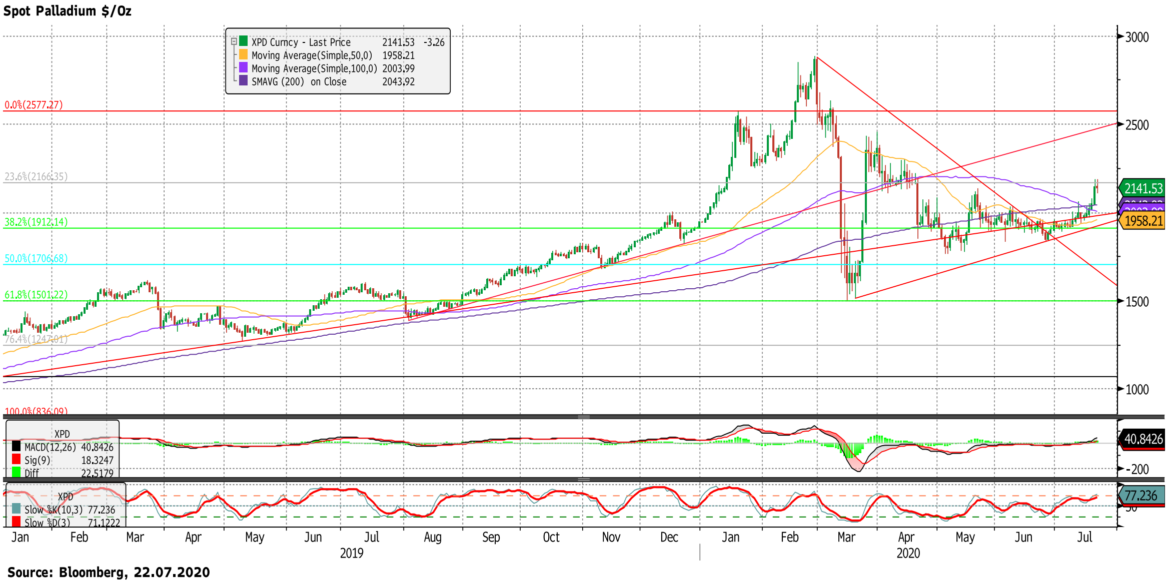


Source: Bloomberg

As the US grappled with reduced business activity, the solar industry struggled in Q2 2020. Construction was delayed, customer demand dropped, and access to financing has been challenging. While residential and non- residential installation volumes are forecast to decline 25% and 38% y/y respectively in 2020, overall, Wood Mackenzie forecasts a 33% increase, owning entirely to strong utility-scale industry performance.

Palladium

Spot Palladium $/Oz



Summary

Palladium, unlike its counterparts in the precious metals group, suffered another round of losses despite recoveries seen in March-April. The precious metal lost 13% in Q2, and prices found support at $1,900/oz by the end of the quarter. The COVID-19 pandemic has hammered automotive and industrial demand in the US and Europe. However, this trend is seen to be subsiding in Q3, thanks to improved auto manufacturing in affected economies. In the upcoming quarter, we expect economic activity to improve along with more stringent emission legislation in China and the rest of the world to support palladium prices.

Q2 Recap: In Q2, palladium tumbled after promptly recovering from March lows in April, as deteriorating economic activity in the rest of the world supported the depressed manufacturing outlook. Prices had fallen 13.0% in the quarter, and 1.3% YTD, closing at $1,900/oz in June. In July, palladium prices have started to recover marginally, spurred by tightening emission legislation requiring higher metal content.

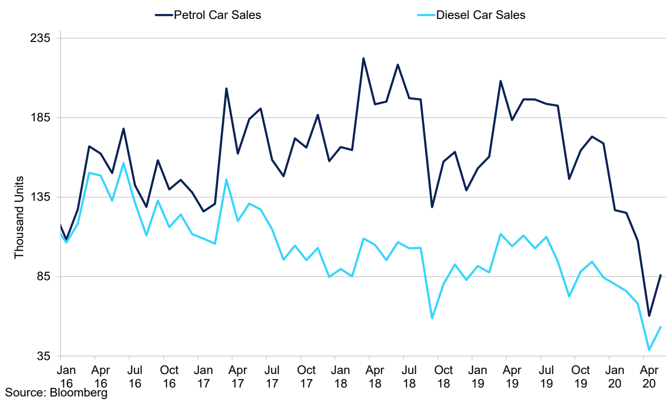
Most of the selling pressure came from speculators side, indicated by a continued decline in the ETF palladium holdings, as it reached record lows of 415,000 by the end of March. We view this contraction in investment demand as a reflection of a slowdown in overall global activity, especially the automotive sector. Mining operations have been opening up, although at a slow pace, capping price performance.

Outlook: In Q2 2020, passenger car sales in Europe and the US were on the path to recovery, despite record lows seen in April 2020. Indeed, sales contracted significantly following extended shutdowns at all major automakers and the closure of dealerships. At the same time, China's passenger vehicle sales were seen around the pre-crisis level. Still, the production ramp-up was hampered by labour and component shortages. China's quick recovery could be foreshadowing a sharp rebound in car sales and production for the US and European economies for Q3.

From the supply side, uncertainty around production in South African mines prevails, as some of the nation's mines continue to reopen despite rising cases of coronavirus-related infections. At the same time, Russia, a country which relaxed lockdown restrictions at the peak of its infections, quietly tightened the grip on the palladium market. While Norilsk Nickel expects global palladium output to drop by 1.3moz this year to about 6.3moz, its production targets for 2020 will remain at the pre-crisis level of 2.648 – 2.777moz. Indeed, in its April statement, Nornickel indicated that 'so far, practically no impact on the operations, sales or procurement' has been felt by the company. Additionally, continued political uncertainty around the Russian economy could further weaken the Ruble, helping to support its palladium exports.

Europe Petrol and Diesel Car Sales

While petrol vehicles remain more popular than those powered by diesel, both types declined drastically during the pandemic.



As we enter Q3, other measures taken by Chinese national and regional governments are expected to include incentives intended to boost car sales. For example, Beijing has already announced a new vehicle replacement subsidy scheme introduced to urge consumers to scrap older and more polluting China 3 vehicles and to replace them with China 6b models. Additionally, the new simplified vehicle conformity certification process that was introduced in March should enable companies to make changes to catalysts more quickly. Overall, new in-car quality rules will likely pose as a tailwind to platinum-group prices.

At the time of writing, auto industry forecasts allowed for a contraction of around 20% in annual light-vehicle production this year, with output of diesel vehicles in Europe particularly badly hit, and production of petrol vehicles in some Asian countries less severely affected. A prolonged deficit in the palladium market will also help support the prices.

Platinum

Spot Platinum
$/Oz

Source: Bloomberg, 22.07.2020

Summary

Platinum prices picked up from March lows due to bargain hunting interest from China. However, a risk-off market due to the virus spread has kept economic activity subdued, weighing on manufacturing, capping the platinum rally. In Q2, platinum gained 11.7% despite low levels of ETFs seen in May. For the quarter ahead, while China's manufacturing and automotive sector recovery is underway, other economies such as Europe and the US will start catching up, given the lifting of containment measures in Q2. Industrial demand is on the rise; however, will remain below pre-crisis levels as the second wave of coronavirus infections threatens economic recoveries. The case for a rally seems stronger in Q3.

Q2 Recap: Platinum, along with other precious metals, has recovered from losses seen in March 2020, as temporary mine shutdowns in South Africa resulted in tightening supplies, supporting prices in Q2. Later on in the quarter, however, a sharp slowdown in automotive, and manufacturing industries hit the platinum-group metals demand. Overall, platinum gained 11.7% in Q2, yielding a return of -15.0% YTD. Overall, the net effect on platinum prices was less than expected, thanks to a rebound in Q2. Low platinum prices sparked buying interest from China, which sought to purchase material to boost inventories.

All known ETF holdings have continued to decline from March sell-off into mid-May, as industrial outlook remained subdued. By the end of the quarter, the levels have picked up from May lows to 3.275m, still below pre-crisis levels. Overall, holdings gained 3.5% in the quarter; YTD is down 2.48%. The platinum-palladium cross widened in Q2.According to WPIC, 2020 demand for platinum is forecast to fall 18%, with supply down 13%, indicating that COVID-19 has had a major negative impact on both sides of the market.

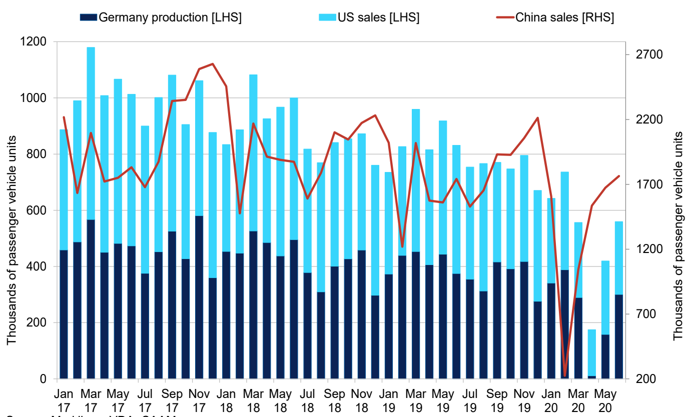
Demand for platinum bars soared, as a fall in prices to 17-year lows unleashed a wave of buying by Japanese investors. Indeed, according to WPIC, bar and coin demand surged 300% in Q1 2020 compared to 2019's quarterly average.

Outlook: The spread of the COVID-19 pandemic will severely impact both supply and demand. Mining output fell sharply in March and April by 18% and 47.3% y/y respectively on the back of strict lockdown measures. During May, however, businesses indicate returns to full functionality, as 26% of businesses were at full capacity, up from 9% in April. In June, foreign mineworkers began returning to South African mines, though at a slower rate than hoped, with 75% of its workforce now back. Nevertheless, South African production is expected to decline by 20% in 2020, according to Johnson Matthey.

Vehicle sales in the US plunged in Q2, with May figures as low as 8.58m. We saw a quick trend reversal in May, as sales bounced back to 13.05m in May, however, still below pre-crisis levels. Europe's car sales followed a similar trend, with a dip seen in April, and a moderate recovery in subsequent months. China's passenger car sales bounced back to pre-crisis levels relatively quickly, up from 0.233m units in February, to 1.673m in May. This upward trend is likely to continue in Q3, with sales in Western economies catching up to those in Asia.

China, Europe and US Passenger Vehicle Sales

While China's sales are seen fluctuating close to the pre-crisis levels, sales in Europe and the US lag behind.



Source: Marklines, VDA, CAAM

Overall, autocatalyst demand is likely to bounce back from Q2 lows, reflecting plant openings along with a marginal rebound in consumer demand for new vehicles; however, it remains below pre-crisis levels. Overall, some industrial applications may see only a limited impact in 2020; however, if risks of a severe and prolonged recession persist, demand could contract even further.

Appendix

Global

Global Manufacturing PMI

Source: Bloomberg

Date	USA (Markit)	China (Caixin)	Eurozone (Markit)	Japan (Nikkei)	Emerging Markets
Feb-2017	54.20	51.70	55.40	53.30	51.30
Mar-2017	53.30	51.20	56.20	52.40	51.60
Apr-2017	52.80	50.30	56.70	52.70	50.90
May-2017	52.70	49.60	57.00	53.10	50.60
Jun-2017	52.00	50.40	57.40	52.40	50.80
Jul-2017	53.30	51.10	56.60	52.10	50.90
Aug-2017	52.80	51.60	57.40	52.20	51.70
Sep-2017	53.10	51.00	58.10	52.90	51.30
Oct-2017	54.60	51.00	58.50	52.80	51.20
Nov-2017	53.90	50.80	60.10	53.60	51.60
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

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
2017	Q1	9035	7159	1876	113	1971
	Q2	9187	8788	399	97	2023
	Q3	8842	8890	-48	96	2316
	Q4	9116	9556	-441	85	2306
	Total/Average	36180	34393	1787	92	1867
2018	Q1	9076	7560	1516	121	2247
	Q2	9196	9306	-110	99	2271
	Q3	9362	9444	-82	97	2112
	Q4	9197	10171	-974	82	2003
	Total/Average	36831	36481	350	88	2154
2019	Q1	8899	7669	1230	118	2002
	Q2	9034	9455	-421	92	2055
	Q3	8905	9586	-680	86	2005
	Q4	8923	10308	-1385	67	1992
	Total/Average	35761	37018	-1257	72	2014
2020	Q1	8973	7214	1759	113	1909
	Q2	8856	9029	-173	90	1814
	Q3	9153	9275	-122	87	
	Q4	9477	9844	-367	79	
	Total/Average	36459	35362	1097	84	
2021	Q1	9127	7457	1671	119	
	Q2	9422	9235	187	99	
	Q3	9688	9407	281	101	
	Q4	9838	10076	-239	92	
	Total/Average	38075	36175	1900	99	
2022	Q1	9420	7743	1677	134	
	Q2	9597	9589	8	109	
	Q3	9755	9768	-13	108	
	Q4	9755	10463	-708	95	
	Total/Average	38526	37563	963	95	

Aluminium Forecasts

Source: Wood Mackenzie

Global (Mt)	2017	%	2018	%	2019	%	2020	%	2021	%	2022	%
Alumina Production (SGA)	121.8	7.6%	121.6	-0.2%	122.9	1.1%	125.1	1.8%	129.1	3.2%	131.0	1.5%
Aluminium Production	63.4	7.5%	64.5	1.6%	63.7	-0.3%	64.5	4.3%	66.6	3.9%	67.6	2.4%
Consumption	63.1	5.9%	65.2	3.3%	65.5	0.5%	61.4	-6.2%	63.3	3.0%	65.7	3.9%
Metal Market Balance	0.3		-0.7		-1.8		3.1		3.3		1.9	
Stock Days of Consumption	92.8		85.7		75.5		98.7		114.9		121.0	
Alumina Market Balance	-0.7		-2.8		-0.1		0.7		0.8		1.0	
Stock Days of Requirement	43.4		34.4		34.6		36.4		37.4		39.6	
Prices												
Cash Aluminium ($/t)	1968		2110		1791		1540		1510		1560	
(c/lb)	89		96		81		70		68		71	
Spot Alumina ($/t)	354		474		332		257		265		265	

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

Source: Wood Mackenzie

Year	Quarter	Production	Consumption	Balance	Stocks Days Cons	LME Cash Price $/tonne
2017	Q1	15718	14268	1451	93	1849
	Q2	15967	16201	-233	81	1911
	Q3	15709	16113	-404	80	2011
	Q4	16035	16594	-558	75	2100
	Total/Average	63430	63175	255	78	1968
2018	Q1	15910	14763	1147	90	2158
	Q2	16076	16845	-769	75	2259
	Q3	16317	16727	-409	74	2055
	Q4	16145	17191	-1045	67	1967
	Total/Average	64449	65526	-1077	69	2110
2019	Q1	15760	14740	1020	100	1859
	Q2	15982	16844	-862	83	1792
	Q3	15961	16722	-761	79	1761
	Q4	16005	17173	-1167	71	1754
	Total/Average	63707	65478	-1771	75	1791
2020	Q1	15987	13729	2258	104	1689
	Q2	15724	15284	440	96	1493
	Q3	16175	16051	124	92	1497
	Q4	16611	16359	251	91	1483
	Total/Average	64496	61423	3073	99	1540
2021	Q1	16035	14203	1832	117	1495
	Q2	16459	16095	364	105	1505
	Q3	16924	16288	636	107	1515
	Q4	17158	16698	460	107	1525
	Total/Average	66577	63284	3293	115	1510
2022	Q1	16555	14750	1804	133	1530
	Q2	16825	16716	109	118	1550
	Q3	17077	16916	162	117	1570
	Q4	17105	17342	-237	113	1590
	Total/Average	67562	65723	1839	121	1560

Copper

Copper Forecasts

Source: Wood Mackenzie

Global (kt)	2019	%	2020	%	2021	%	2022	%
Total Mine Production	20978	0.8	20589	-1.9	21565	4.7	22544	4.5
Total Smelter Production	19659	0.6	19412	-1.3	20609	6.2	21460	4.1
Refined Production	23492	0.1	23205	-1.2	23811	2.6	24644	3.5
Consumption	23633	0.0	22668	-4.1	23481	3.6	24538	4.5
Concentrate Stock Change	201		-50		50		200	00
Metal Market Balance	-141		537		330		106	00
Metal Stocks - Days of Cons	64		76		78		76	00
Prices								
Cash LME Price ($/t)	5999		5355		5150		5400	
(c/lb)	272		243		234		245	
Contract TC/RCs (c/lb excl pp) for 30% Cu Conc	21		16		20		22	
Contract Blister Europe ($/t)	160		128		184		219	

Copper Concentrate Market TC/RCs

Source: Wood Mackenzie

	Asia Term Contracts (Benchmark)			Far East Spot Market (CIF Asia) Miner Selling Terms to Merchants						
	2018	2019	2020	2017	2018	2019	2019	2019		2020
	Ave	Ave	Ave	Ave	Ave	Q4	Q4	Nov	Dec	Jan
T/C ($/tonne Conc.)	82.25	80.80	62.00	73	76	52	57	45	44	39
R/C (c/lb Cu)	8.23	8.08	6.20	7.3	7.6	5.2	5.7	4.5	4.4	3.9
PP (c/lb Cu)										
Combined (c/lb) +	23.77	23.35	17.92	21.1	22.0	15.1	16.5	13.0	12.7	11.3
Combined (c/lb) #	21.09	20.72	15.90	18.7	19.5	13.4	14.6	11.5	11.3	10.0
				Chinese smelter buying terms (CIF basis)						
				2017	2018	2019	2020	2020		
				Ave	Ave	Ave	Q1	Apr	May	Jun
T/C ($/tonne Conc.)				84	85	65	67	60	52	51
R/C (c/lb Cu)				8.4	8.5	6.5	6.7	6.0	5.2	5.1
PP (c/lb Cu)										
Combined (c/lb) +				24.3	24.6	18.7	19.4	17.3	15.0	14.7
Combined (c/lb) #				21.5	21.8	16.6	17.2	15.4	13.3	13.1
+ 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
2019	Q1	5805	5297	508	74	6214	282
	Q2	5836	6068	-232	71	6112	277
	Q3	5901	6193	-292	66	5802	263
	Q4	5950	6075	-126	64	5881	267
	Total/Average	23492	23633	-141	64	5999	272
2020	Q1	5648	4820	828	80	5636	256
	Q2	5742	5690	52	81	5335	242
	Q3	5919	6077	-158	79	5250	238
	Q4	5897	6081	-184	76	5200	236
	Total/Average	23205	22668	537	76	5355	243
2021	Q1	5950	5173	777	85	5050	229
	Q2	5952	5859	93	87	5100	231
	Q3	5953	6159	-206	83	5250	238
	Q4	5955	6289	-334	78	5200	236
	Total/Average	23811	23481	330	78	5150	234
2022	Q1	6158	5430	728	86	5300	240
	Q2	6160	6117	44	86	5350	243
	Q3	6162	6412	-250	83	5450	247
	Q4	6164	6579	-415	76	5500	249
	Total/Average	24644	24538	106	76	5400	245

Lead

Global Quarterly Supply/Demand Balance And Price Forecasts

Source: Wood Mackenzie

		Refined Prod'n	Cons'n	Balance	Stock Days	$/tonne	c/lb
2017	Q1	2942	2873	69	40	2278	103
	Q2	3130	3222	-92	33	2164	98
	Q3	3198	3178	20	35	2333	106
	Q4	3275	3302	-27	32	2493	113
	Total/Avg	12545	12575	-31	35	2317	105
2018	Q1	2955	2912	44	38	2522	114
	Q2	3158	3268	-110	31	2387	108
	Q3	3234	3231	3	31	2102	95
	Q4	3309	3355	-46	29	1963	89
	Total/Avg	12657	12767	-110	31	2243	102
2019	Q1	3038	2932	106	36	2036	92
	Q2	3234	3293	-59	31	1885	86
	Q3	3304	3256	48	33	2029	92
	Q4	3395	3386	9	32	2038	92
	Total/Avg	12971	12866	104	34	1997	91
2020	Q1	3114	2745	368	51	1847	84
	Q2	3314	3082	232	52	1667	76
	Q3	3391	3044	348	63	1725	78
	Q4	3483	3165	318	70	1700	77
	Total/Avg	13302	12036	1266	74	1735	79

Lead Forecasts

Source: Wood Mackenzie

Global (kt)	2018	%	2019	%	2020	%	2021	%
Mine production	4714	2.5	4382	-7.0	4600	5.0	4431	-3.7
Refined production	12971	2.5	12509	-3.6	12963	3.6	12838	-1.0
Consumption	12866	0.8	12036	-6.5	12681	5.4	12743	0.5
Concentrate balance	216		-76		34		-9	
In days of requirement	42		37		39		39	
Refined market balance	104		473		282		95	
In days of requirement	34		50		56		58	
Prices								
Cash LME Price ($/t)	1997		1735		1663		1738	
(c/lb)	90.6		78.7		75.4		78.8	
Realised TCs ($/t conc)	100		180		179		183	

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
2019	Q1	591	596	-5	12385	562	1260	190
	Q2	593	608	-15	12259	556	1246	187
	Q3	616	620	-3	15602	708	1242	184
	Q4	629	602	27	15367	697	1269	194
	Total/Avg	2429	2425	4	13903	631		
2020	Q1	607	547	60	12720	577	1330	219
	Q2	608	558	50	12196	553	1380	225
	Q3	606	576	30	12236	555	1409	225
	Q4	606	605	1	11831	537	1410	214
	Total/Avg	2427	2287	141	12246	555		
2021	Q1	627	559	68	11684	530	1478	238
	Q2	641	604	36	13007	590	1515	228
	Q3	637	622	15	13301	603	1530	226
	Q4	649	640	9	13522	613	1539	221
	Total/Avg	2554	2426	129	12879	584		
2022	Q1	680	610	71	13742	623	1610	238
	Q2	682	656	27	13889	630	1637	227
	Q3	684	655	29	13338	605	1665	234
	Q4	688	676	12	12824	582	1677	228
	Total/Avg	2735	2596	138	13448	610		

Nickel Forecasts

Source: Wood Mackenzie

Global (kt)		2018		2019		2020		2021
Mine Production	2520	10.4%	2420	-4.0%	2634	8.8%	2849	8.2%
Smelter Production	2360	7.9%	2374	0.6%	2461	3.6%	2640	7.3%
Refined Production	2429	9.8%	2427	-0.1%	2554	5.2%	2735	7.1%
Consumption	2425	5.6%	2287	-5.7%	2426	6.1%	2596	7.0%
Market Balance	4		141		129		138	

Cash LME price				
($/t - Current)	13903	12246	12879	13448
(c/lb - Current)	631	555	584	610

Tin

ICDX & LME Tin Price

Source: LME, ICDX

	ICDX	LME Cash	LME premium to ICDX
01-Mar-17	19300	19500	200
03-Apr-17	20100	20084	-16
02-May-17	20100	20015	-85
02-Jun-17	20425	20420	-5
04-Jul-17	20000	20240	240
01-Aug-17	20700	20650	-50
04-Sep-17	20880	20985	105
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

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
2019	Q1	3164	3446	-282	37	2702	122.5
	Q2	3363	3523	-160	32	2762	125.3
	Q3	3382	3467	-85	30	2345	106.4
	Q4	3448	3488	-39	29	2384	108.1
	Total/Avg	13356	13923	-567	29	2546	115.5
2020	Q1	3351	3181	170	37	2127	96.5
	Q2	3410	3251	159	40	1959	88.8
	Q3	3521	3200	321	50	1900	86.2
	Q4	3703	3219	484	63	1767	80.1
	Total/Avg	13985	12851	1134	63	1938	87.9
2021	Q1	3420	3305	115	65	1750	79.4
	Q2	3494	3379	115	67	1950	88.5
	Q3	3468	3325	142	72	2200	99.8
	Q4	3517	3345	172	76	2400	108.9
	Total/Avg	13899	13355	544	76	2075	94.1
2022	Q1	3388	3391	-3	75	2450	111.1
	Q2	3469	3467	2	73	2500	113.4
	Q3	3447	3412	35	75	2500	113.4
	Q4	3525	3432	93	77	2500	113.4
	Total/Avg	13829	13702	126	77	2488	112.8

Price Forecasts and World Quarterly Supply/Demand Balance

Source: Wood Mackenzie

Global (kt)	2019	%	2020	%	2021	%	2022	%
Mine Production	13367	3.7	12726	-4.8	13885	9.1	13081	-5.8
Refined Production	13356	0.9	13985	4.7	13899	-0.6	13829	-0.5
Consumption	13923	-1.8	12851	-7.7	13355	3.9	13702	2.6
Concentrate Market Balance	662		-500		869		160	
Metal Market Balance	-567		1134		544		126	
Prices								
Cash LME Price ($/t)	2546		1938		2075		2488	
(c/lb)	115		88		94		113	
Realised TCs ($/t concentrate)	242		300		285		350	

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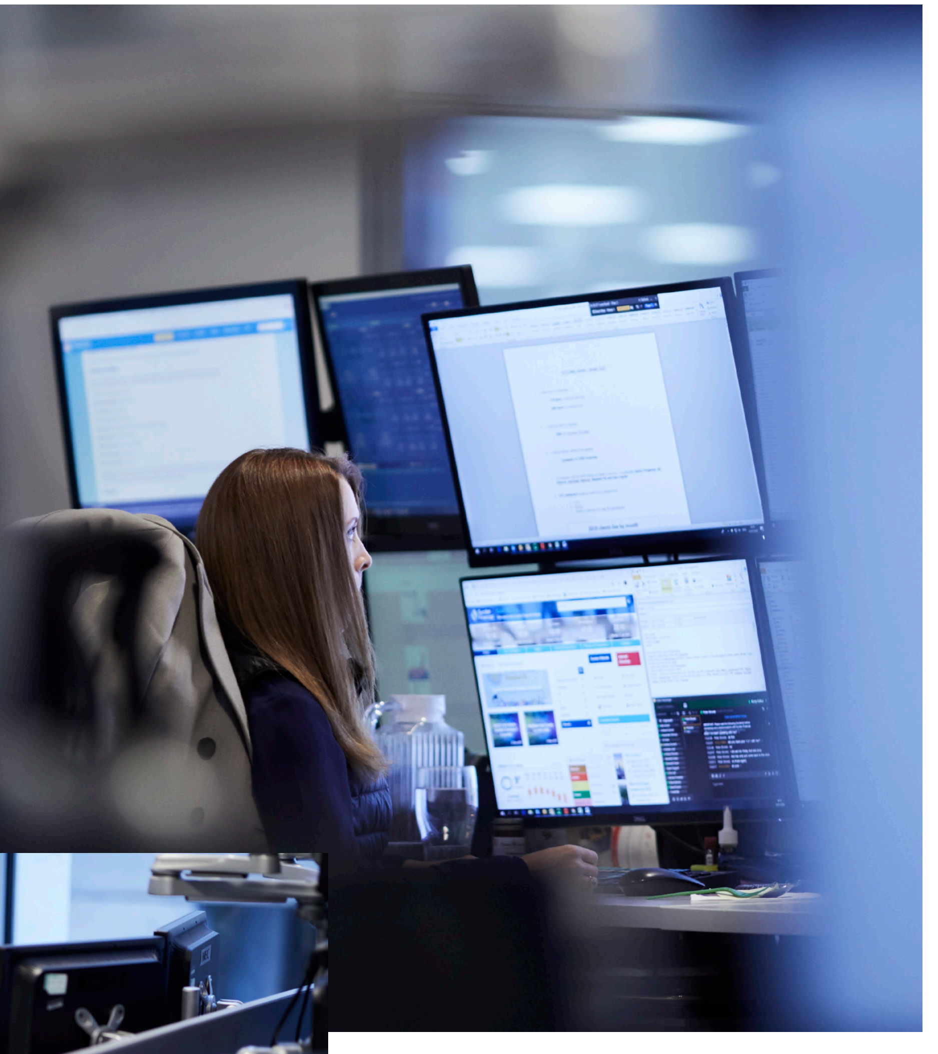

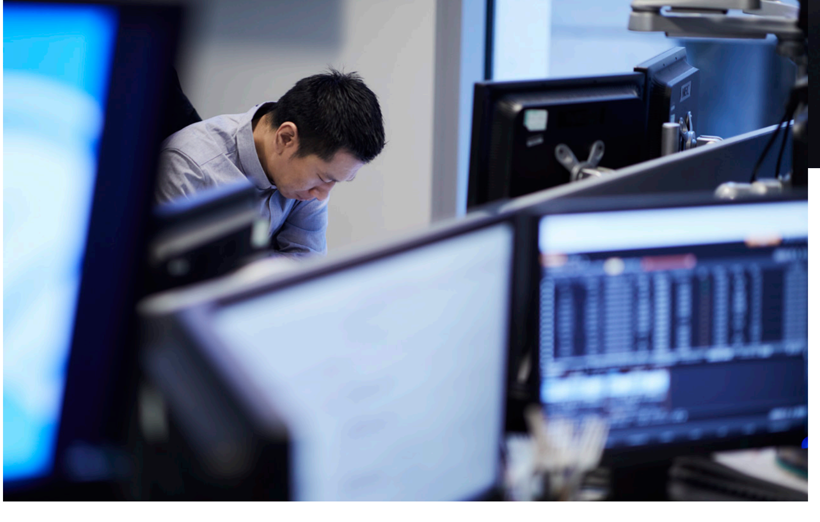

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