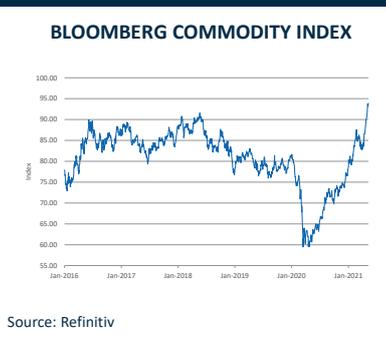


Commodities

## COMMODITIES VIEWPOINT

### *Potential vulnerability to a rise in bond yields*

Commodity prices have recovered powerfully over the past year from the initial phase of the coronavirus crisis. The Bloomberg Commodity Index has climbed 52% in the year to May 11, against 42% for the S&P 500. It is around a six-year high, although still almost 50% below the 2011 Q2 peak. Price gains have been widespread and driven by demand and supply influences which have conspired to rapidly tighten markets particularly for industrial metals. Key demand drivers have been the continuing robust performance of China's economy, a strong US economic recovery and generally buoyant demand for durable goods. Supply influences include disrupted operations in large part due to the coronavirus crisis, depleted inventories, OPEC's tight control of oil production and in the case of agricultural commodities adverse weather conditions. We believe the economic and financial backdrop for commodities remains auspicious for now given the positive world economic outlook and highly stimulative fiscal and monetary policy in the OECD world and China. A rise in US bond yields and an abrupt change in US monetary policy due to mounting inflationary pressures is a risk for commodity markets in the coming months.



- **Historical context:** Over the past 20 years, there have been five distinct phases in commodity markets. The first was the uptrend from the early 2000s to the onset of the Great Recession and financial crisis in Q3 2008. Driven by the rapid expansion of the Chinese economy, the Bloomberg Index rose by 170%. The subsequent 56% drop in the eight months to March 2009 largely erased the previous uptrend. Prices trended higher in the two years to Q2 2011 with China's hunger for commodities being the major factor. The peak, however, fell well short of the 2008 spike. Between Q2 2011 and early 2020 commodity prices trended down with the Bloomberg Index falling by 57% over the period. Falling energy prices were a key driver reflecting a substantial influx of new supply. Commodity prices came under heavy pressure late in Q1 2020 as the coronavirus struck but this proved short-lived. The Bloomberg Index fell about 21% between late February and late April 2020 to a more than 20-year low. Despite the subsequent rebound, the Index currently is barely higher nominally than in early 2002.
- **Steel industry commodities:** The approximate 50% increase in the Bloomberg Index over the past year understates the rebound in industrial commodities. One of the most impressive performances has been iron-ore. Benchmark prices for 62% Fe grade ore at \$221/tonne cif Qingdao are up 154% on a year ago and at record levels. Producing iron-ore currently is highly lucrative given cash production costs in the Pilbara of \$17-18/tonne fob, according to Rio Tinto. Prices have been driven by strong demand from China, recovering steel industry activity elsewhere and low inventories. Coking coal prices have also been trending strongly of late with a gain of 35% between Q4 2020 and Q1 2021 for ex-Australia material. A ban on imports of Australian coal by China has contributed to the price gains. Steel prices globally have surged over the past year driven by rising input costs, tight supplies and buoyant demand. US HRC (hot-rolled coil) prices are currently about \$1,500/ton up 3X on a year ago and at record levels.
- **Copper:** Copper, often considered an industrial bellwether, has risen strongly in price over the past year with a gain of 101% to a record \$4.78/lb (\$10,540/tonne). The previous all-time high was \$4.63/lb in February 2011. With cash costs of less than \$2/lb for producers in the middle of the cost curve current prices point to very comfortable margins. The strong showing by copper in 2021 is arguably slightly surprising given a market that is estimated by the International Copper Study Group to be close to balance. New mine capacity is coming on stream in the DR Congo, Chile, Peru and Russia while Chinese demand is likely to be less robust than in 2020. Long term, the supply/demand fundamentals look positive for copper. On the demand front, copper is a major beneficiary of electrification trends. Supply could be constrained by falling grades, a recent lack of large discoveries and long mine development lead times.

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Please refer to the last page of this communication for all required disclosures and risk warnings.

**Exhibit 1: Bloomberg commodity index (long term)**



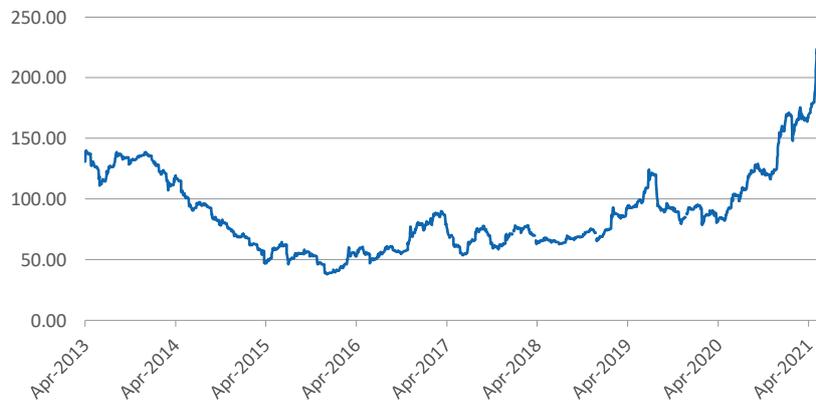
Source: Refinitiv

**Exhibit 2: Copper price trend (\$/lb)**



Source: Refinitiv. Note: Data refer to Comex

**Exhibit 3: Iron ore price trend (\$/tonne)**



Source: SGX (Singapore Exchange) and Refinitiv. Note: Prices are cfr China for 62% Fe fines

**ALUMINIUM:**

**Substitute for copper in electrical and HVAC applications:** Aluminium is the highest volume base metal with primary production of 65m tonnes in 2020. This compares with about 25m tonnes for refined copper production. Aluminium competes with copper in electrical and HVAC (heating, ventilation and air conditioning) applications. China accounts for almost 60% of world primary production. Reflecting a high recycling rate, secondary scrap-based aluminium production is substantial at about 31m tonnes/year. Primary aluminium production is highly energy intensive requiring around 15,000 kWh of electricity/tonne.

**China expansion depressed prices in recent years but strong rebound of late:** Reflecting in large part the rapid expansion of China's aluminium industry, prices have been under significant downward pressure in recent years. At the recent low in late March 2020 SFE (Shanghai Futures Exchange) aluminium was trading at 73 cts/lb (\$1,597/tonne), around a five-year low and we believe close to the cash costs of production for perhaps 75% of the international cost curve. Aluminium has rebounded strongly over the past year and at \$1.38/lb (\$3,043/tonne) on May 13 was up 68%. Compared with the August 2011 high of \$1.31/lb (\$2,884/tonne) there was a gain of 6%. Interestingly, SFE aluminium was trading at record levels of comfortably over \$3,000/tonne between May 7 and 13. The previous all-time high for aluminium on the SFE was \$1.34/lb (\$2,965/tonne) recorded in May 2006 during the China induced commodity boom of the early to late 2000s.

Aluminium has been buoyed by several factors of late. These include the following:

- Rapidly strengthening demand in OECD countries and China as economic activity has gathered momentum in the wake of an easing in the coronavirus crisis.
- Production constraints in China related to official measures to cut emissions in urban areas along with energy consumption. To what extent production cutbacks will be permanent is unknown at this stage. Production in China is however considerably less elastic relative to price than has been the case in the past.
- Deteriorating relations between Australia, a major supplier of bauxite and alumina and China over several issues. This has resulted in China suspending economic dialogue with Australia. The fear is that China will cease importing bauxite and alumina from Australia in much the same way as has already happened for coal.

We believe the above factors and particularly the newly introduced constraints on Chinese production could extend the upward trend in aluminium over the balance of 2021. A price of \$3,500/tonne on the SFE during the fourth quarter would not be surprising in our view, abstracting from a Chinese public policy reversal on smelter emissions or surge in US interest rates and bond yields. While primary aluminium price escalation should boost industry profitability this will be partly offset by rising costs of energy and raw materials given that alumina contracts are often linked to aluminium prices.

**Hefty discount to copper:** Historically, aluminium has sold at a considerable discount to copper despite offering not dissimilar properties in terms of thermal and electrical conductivity. Aluminium offers 61% of the conductivity of copper but at 30% of the weight. Therefore, per unit of weight aluminium has superior electrical capacity. In terms of volume the advantage is with copper. Currently, the aluminium discount is a hefty 75%, although this is not greatly different than in recent years. Against the backdrop of powerful medium to long-term electrification trends and the discount, we believe aluminium offers interesting potential as a substitute for copper in some electrical applications.

**Unlike copper abundant availability of feedstock:** Unlike copper, primary aluminium production is not constrained by feedstock availability given plentiful supplies of bauxite and a very high secondary recycling rate. In fact, we believe by the late 2020s there will

probably be no alternative to using proportionately more aluminium in electrical applications. Key drivers are a lack of large scale, economic grade porphyry copper projects and the phenomenon of declining grades at established mining operations. We believe the potential discovery of aluminium as a viable substitute for copper along with possible supply constraints in China, could result in a significant narrowing in the aluminium discount medium to long term.

**Exhibit 4: Aluminium price trend (\$/tonne)**



Source: Shanghai Futures Exchange and Refinitiv

**Aluminium and carbon emissions**

**Carbon is used as a reductant for aluminium oxide:** Aluminium has attracted considerable attention of late due to the carbon intensive nature of production. The emissions relate partly to the reduction (separation of the metal from the oxide) of alumina or aluminium oxide during smelting using carbon anodes and partly the use of thermally generated power, particularly in China and the Mideast. Broadly, a tonne of primary aluminium emits four tonnes of carbon dioxide during smelting. Where power is thermally generated another 20+ tonnes of carbon dioxide will be emitted. Further carbon emissions result from mining bauxite, refining alumina and logistics. Directly generated carbon dioxide emissions during smelting account for about 2% of the world total.

**Industry researching inert anodes:** The aluminium industry is researching the use of inert anodes that emit oxygen. Rio Tinto in conjunction with Alcoa through the Elysis project and Russia-based Rusal are perhaps the leading proponents of new technology. Rio Tinto has suggested that it is planning to commercialise its emerging new anode technology from 2024 both as a retrofit for existing smelters and for installation in new facilities.

**NICKEL**

**Nickel market in modest surplus in 2021:** World nickel mine output in 2020 was around 2.5m tonnes, down 4% on 2019 based on USGS (US Geological Survey) data. The drop was mainly attributable to Indonesia implementing an ore export ban. Indonesia, however, remained the world’s largest mine producer with output of 0.76m tonnes. Primary nickel metal production in 2020 of 2.49m tonnes was 5% higher than in 2019 while consumption slipped 1% between the two years, based on International Nickel Study Group (INSG) data. The same source is forecasting strong increases in both metal production and consumption in 2021 with gains of 9% to 2.72m tonnes and 12% to 2.67m tonnes, respectively. The INSG estimates that there was a nickel market deficit of 0.04m tonnes in 2019. This was followed by a surplus of 0.11m tonnes in 2020. A modest surplus of 0.05m tonnes is forecast by the INSG in 2021.

**Stainless steel accounts for 70% of nickel consumption:** According to the Nickel Institute, 70% of nickel is used in the production of austenitic stainless steel (300 series grades). The feedstock for this application is ferro-nickel which typically contain about 35% Ni. Stainless is a high-performance versatile metal reflecting some excellent properties as follows:

- Corrosion resistance
- High tensile strength
- Good machinability (milling, turning, drilling, grinding, cutting)
- Good weldability
- Good ductility and formability
- Easily cleanable hygienic surface finish
- Temperature resistance.

These properties confer ease of formability and high standards of durability and low maintenance characteristics for fabrications and components made from stainless. In 2020 stainless production came in at 50.9m tonnes, down 2.9% on 2019, a rare year of decline for the metal. Taking the ten years to 2020, stainless steel production grew by 5% pa and in the process clearly outpaced global GDP growth. Normally, we would expect stainless steel demand to grow at least in line with world GDP given its wide application and high-performance properties.

**Rechargeable battery cathodes are a growing market:** Outside stainless the key applications for nickel are nickel-base metal alloys 8%, steel alloys and castings 8%, plating 8%, batteries 5% and miscellaneous 1%. Batteries for electric vehicle and power utility electric storage have caught the imagination of the investment community given the potential for high growth. Note, nickel is currently used in the two main major rechargeable battery cathode specifications used for electric vehicles. These are the NCA (nickel 80%-cobalt 15% -aluminium 5%) and the NMC (nickel 33%-manganese 33%-cobalt 33%) chemistries.

**High-purity sulphate nickel typically required for batteries:** Battery grade nickel provides a cost-effective way of enhancing energy density and hence power output and range. The problem is that battery grade nickel needs to be very high purity which can only be sourced from sulphide material. Over the past decade or more high-grade sulphide's share of the mix has declined significantly and is now down to about 32% with laterites accounting for the balance. Laterite grades also tend to be lower than for sulphide material and historically have not been used for battery applications given that the contained Fe would 'poison' the battery. Significantly, BHP is planning to bring on-stream in the second half of 2021 a nickel sulphate plant at its Kwinana refinery in Western Australia. This will increase world sulphate capacity suitable for battery applications by 0.1m tpy or 25% to around 0.45m tonnes. We believe battery grade material is presently running at about 0.15m tpy with 0.20m tpy plus a very real near-term prospect.

**Nickel continues to trail the 2011 high of \$13.1/lb:** Since peaking at \$13.1/lb (\$28,830/tonne) in February 2011, nickel has until recently followed a decidedly subdued path. Over the next five years the metal trended down bottoming out in early 2016 at \$3.7/lb (\$8,158/tonne), not far off the cash costs of production for many producers. It was also under the late 2008 low of \$4.4/lb. Arguably, the trend was surprisingly weak, given that the market in some years such as 2016 was in deficit and underlying buoyant demand growth. Since 2016, nickel has trended higher, including in 2021 but has lagged high-flyer copper and remains well below the recent 2011 peak. Over the past 20 or more years the high for nickel was \$23.7/lb in May 2007 in the late stage of the China driven commodity boom.

**Tsingshan's innovative plan to produce high-grade matte from laterite feedstock----:** In early March 2021 nickel came under heavy pressure with the price dropping from a six-year high of \$8.9/lb to \$7.3/lb. The proximate cause was an announcement by the Chinese

nickel and stainless steel major, Tsingshan Holdings, of its intention to produce 100,000 tonnes of high-grade nickel matte using laterite feedstock. The matte would then be converted into battery grade nickel sulphate. Supplies of matte would begin over the next year or so to two advanced material specialists, Huayou Cobalt and CNGR Advanced Material.

**----could loosen tight battery sulphate market:** While not changing the overall nickel supply-demand balance, Tsingshan's move could potentially loosen prospective tightness in the high-grade sulphate market. There are, however, several technical and environmental issues in going down the laterite-nickel matte route to produce nickel sulphate which may also have adverse economic implications. Apparently, high-grade saprolite ore will be required along with a more energy intensive refining process. Nevertheless, we believe that Tsingshan's innovative approach to producing nickel sulphate is interesting and could indeed be the proverbial game changer in boosting supply. If successful, it could reduce or eliminate premiums on high-grade nickel sulphate.

**Nickel price has firmed over the past two months to \$8.1/lb:** Between mid-March and early May 2021 LME nickel firmed in tandem with other industrial metals. By May 11 nickel was trading at \$8.1/lb (\$17,943/tonne), up 49% on a year earlier but 9% below the March 2021 high. For producers this offers significant headroom vis-à-vis cash costs which we believe are typically in the \$3-4/lb range (net of credits).

**Potential for a tight market reflecting both supply and demand influences:** We believe nickel is one of the most interesting industrial metals at this juncture. Underlying demand for the metal in traditional applications, notably stainless, is strong and there is a major new market emerging for battery-grade material. On the supply side there have been few major discoveries of high-grade nickel sulphide ore of late and in historical nickel mining provinces ore grades are falling much as for copper. Assuming a buoyant world economy through mid-decade there is, in our view, every chance that the nickel market could tighten noticeably over the period. Significantly, perhaps, commodity market participants still have subdued expectations for nickel. This contrasts sharply with copper.

## GRAINS

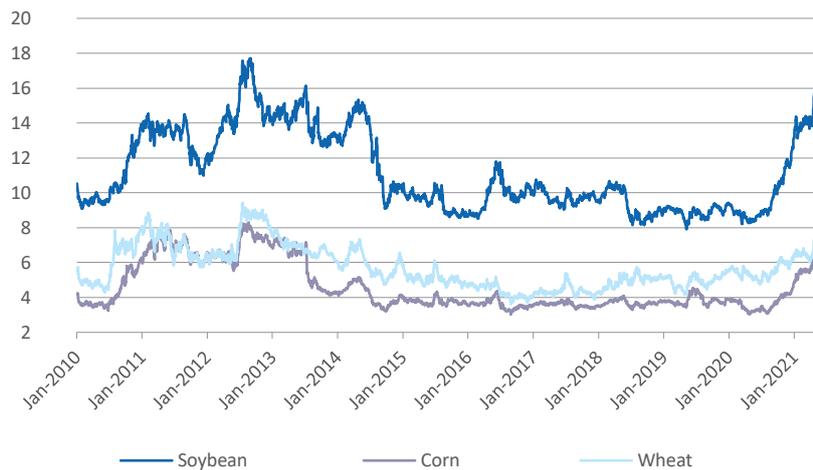
**Prices approaching ten-year highs driven by dry weather in Brazil and Argentina:** In early May grain and oilseed prices were trading at or approaching ten-year highs. Looking at the three major grain commodities, soybeans, corn and wheat (soft red winter) prices in early May, based on CBOT data, were approximately \$16.2/bushel, \$7.7/bushel and \$7.5/bushel respectively. Compared with the 2020 second quarter lows, corn has increased in price by 124%, soybeans have climbed by 96% and wheat has risen by 61%. Over the past forty years prices in nominal terms have only been higher in 2011/12. Significantly, the price surge in grain over the past year or so follows two or three years of continuously depressed prices.

The price surge reflects three key factors as follows:

- Relatively tight inventories historically.
- Uncertainty regarding crop conditions in 2021, particularly bearing in mind severe drought in southern Brazil and parts of Argentina. The Brazilian corn crop looks like dropping about 7% between 2020 and 2021. Dry conditions are also a concern in the US. An additional concern for the market is that low water levels on the River Parana in Argentina are limiting supplies by reducing loadings on ships. About 80% of Argentine grain exports are made via the Parana.
- Buoyant demand in China for animal feed. It should be noted that feed needs in the country having grown over the 20 years 2001 to 2021 from 100m tonnes to 275m tonnes based on USDA (US Department of Agriculture) data.

**Northern hemisphere weather and planting are key now the key near-term issues:** The key issue now concerning grain and oil seed prices is weather conditions and planting in the principal northern hemisphere growing areas. Particularly important in this regard are developments in the US and Russia. The latter has emerged as a new agricultural powerhouse in recent years and is now the largest exporter of wheat. Given that prices have hit what are probably comfortably profitable levels, planting could increase significantly in the 2021/22 campaign. Abstracting from adverse weather conditions in the form of droughts or excessive precipitation this could exert downward pressure on grain prices following the northern hemisphere harvest season in the third and early fourth quarters. We believe however that the huge Chinese import needs for feed will continue to provide the market with solid underpinnings and keep prices comfortably above the lows of recent years.

**Exhibit 5: Grain price trends (\$/bushel)**



Source: CBOT (Chicago Board of Trade) and Refinitiv

**PETROLEUM**

**Spectacular rebound in prices over the past year----**: Petroleum over the past year or so has experienced one of the most spectacular price rebounds in the annals of commodity markets. At the April 2020 lows Brent, the international light crude benchmark and WTI the US Mid-Continent benchmark, were trading at \$9/barrel and -\$37/barrel, respectively. By early May 2021 Brent had rebounded to \$68.2/barrel while WTI had recovered to \$64.8/barrel. This has broadly taken prices back to the levels of early January 2020 before the coronavirus crisis struck with a vengeance later in the first quarter of 2020.

**-----reflecting a swing to sizeable market deficit:** The strength of the recovery in oil prices has caught many observers by surprise. Underlying the powerful recovery over the past year has been driven by a swing from a hefty supply surplus in the first half of 2020 to a supply deficit over the subsequent three quarters. The swing to deficit reflected an unprecedented production cutback and a recovery in demand during the second half of 2020 and early 2021. The cutbacks announced in the second quarter of 2020 were around 13mm b/d and included both the OPEC+alliance (the + mainly refers to Russia) and independent producers principally in the US and Canada. Demand firmed from the third quarter of 2020 driven initially by China and then by a more buoyant OECD economy led by the US. Prices received a further boost post the announcement in early November 2020 of the pending availability of highly efficacious covid-19 vaccines. Their rapid roll-out in early 2021 reinforced the upward trend.

**Demand approaching pre-crisis levels in Q1 2021:** Significantly, by Q1 2021 oil demand globally was roughly back to year earlier levels. According to petroleum industry sources, diesel demand has returned to 2019 levels while petrochemical and marine fuel demand

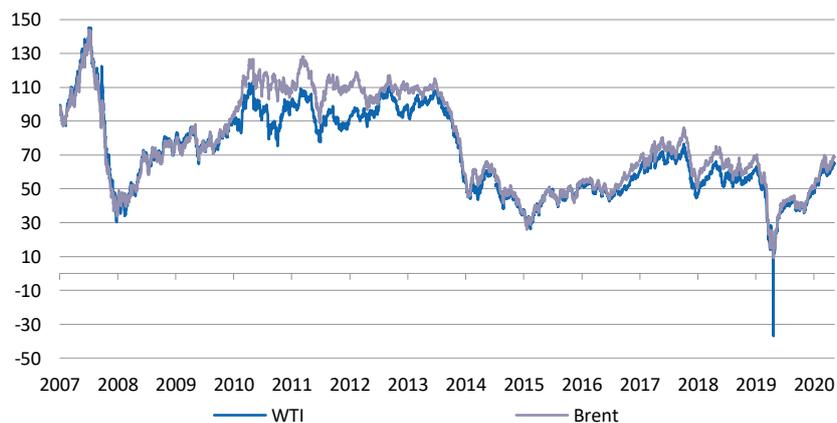
are both buoyant. Gasoline demand is now close to pre-crisis levels but aviation fuel demand still lags year-ago significantly due to restrictions on international travel. According to the EIA, demand globally should be around 97.7mm b/d which is up 6.0% on 2020 and down a modest 3.5% on 2019. Indicative of the tight marketplace is the significant backwardation at the front end of the forward curves for Brent and WTI. The spot to five-year forward spread is around \$9/barrel currently.

**Supply deficit will probably narrow over balance of 2021 reflecting rising output:** We believe the market backdrop over the balance of 2021 will be conducive to a continuing upward trend in oil prices. The market will probably remain in deficit, albeit to a lesser extent than in the first quarter. Potentially strong global economic growth of 6% should propel petroleum demand at a similar pace. Supply, however, is expected to increase strongly in the coming months led by OPEC and development activity in the non-OPEC world with the US and Brazil to the fore. We believe rising production and occasional covid-19 flare-ups will constrain the scope for price gains over the balance of 2021. We nevertheless expect to see Brent in Q4 2021 averaging \$70/barrel.

**We look for a price peak in Q1 2022:** In this cycle we look for oil prices peaking in Q1 2022 with Brent and WTI averaging \$73.0/barrel and \$69.5/barrel respectively. We think during this period spot prices might top \$75/barrel in the case of Brent and \$70/barrel for WTI. Post Q1 2022 we see prices slipping reflecting an influx of supply driven by rising OPEC production and non-OPEC development activity. Assuming prices follow the course anticipated, we think OPEC producers will find it impossible to resist the temptation to boost utilization rates given pressing financing needs. Iran may also be able to fully re-enter the market, assuming a rapprochement with the US and Libyan output and exports could be on a strong uptrend.

**\$70/barrel likely to induce a supply response and a return to market balance in 2023:** Short lead time US shale producers, we suspect, will also find \$70/barrel prices irresistible and step-up development activity accordingly. This combined with new field development in Brazil, Guyana and possibly Russia should keep non-OPEC production moving ahead at a solid rate. We believe the demand backdrop should remain buoyant in 2022 and 2023 supported by positive macro-economic influences but expect this to be more than offset by increasing supply. A broadly balanced market is consequently forecast for 2023. Our average Brent price forecasts per barrel for 2021, 2022 and 2023 are: \$66.1, \$69.3 respectively. On the same basis for WTI we forecast \$62.7, \$65.9 and \$62.8. These prices imply comfortable levels of profitability across the bulk of the international cost curve.

**Exhibit 6: Long term Brent vs WTI price trends (\$/bbl)**



Source: EIA

**Secular decline in petroleum exploration**

**European majors have announced cutbacks in exploration:** We are probably in the early phase of a secular decline in exploration for petroleum. Several European majors have indicated that they are aiming to cut oil production significantly by 2030 to achieve compliance with the United Nations net zero GHG emission objective. BP and Shell have talked in terms of a cut of 40% by this date. Cuts are to be achieved to a large extent by scaled back upstream investment and depletion of existing fields rather than divestments.

**North American producers, Petrobras and OPEC will probably pick up the slack:**

Conceptually, scaled back exploration and depletion by non-OPEC majors could tighten the market in due course. In practice, however, we think that supply is unlikely to be greatly impacted at least over the near to medium term, which we would define as the next five years. Helping buoy production we think will be the following:

- The continuing volume growth focus of the North American majors (including the Alberta oil sands operators), Petrobras in Brazil and the leading E&P concerns in Russia. Significantly, ExxonMobil has suggested that oil production is likely to top 0.75mm b/d by 2025 (0.10mm b/d currently) in the new oil province of offshore Guyana. Petrobras continues to pursue a policy of rapid development in the Santos Basin and Russia retains considerable development potential with Rosneft's giant Vostock Oil project being a key example. In principle, utilization rates can probably be raised, if necessary, in the Alberta oil sands where there is also no shortage of reserves to be developed. The constraints on development here are logistics and politics.
- The continuing potential for shale development in the US and possibly elsewhere. Note, in the case of proven shale or tight reservoir basins lead times to production are short at a matter of months. Both ExxonMobil and Chevron now have considerable shale exposure as well as a still sizeable corps of mid-tier concerns. We expect the spectre of stranded assets to increasingly exercise the minds of owners of shale or indeed conventional reserves over the next few years. This is likely to encourage development.
- The likelihood that any downward trend in production by the European majors will be offset by production gains elsewhere, notably OPEC. Near to medium term OPEC probably has more than sufficient developed capacity to fill the void. This applies particularly if sanctions are removed on Iran and Libya manages to sustain output at or possibly above pre-revolution (overthrow of Colonel Gaddafi) levels. In the event of the fall of the Maduro regime in Venezuela or at least the return to the semblance of normality in relations with the US, the impact on supply could prove transformational. President Maduro has been the great survivor against the odds in recent years. The status of his regime remains one of the key wild cards concerning the petroleum industry outlook.

**Exploration cutbacks could start having a more perceptible impact by late 2020s:**

Towards the late 2020s we think cutbacks in exploration expenditure and the phenomenon of oilfield depletion will start to have a more perceptible impact on production. The implications for the supply/demand balance will depend on how demand tracks over the balance of the decade which will be determined by a combination of commodity price, technological, macro-economic and public policy developments. It is conceivable that by end decade demand could be plateauing or slipping in tandem with production.

## **GOLD**

**Record high of \$2,052/oz in August 2020:** Gold performed strongly in the early phase of the coronavirus crisis reaching an all-time closing nominal high on Comex of \$2,052/oz on August 6, 2020. This was 9% up on the prior August 2011 record of \$1,889/oz and 35% from end 2019. In the early phase of the crisis, gold was supported by the collapse in interest rates and bond yields and a rush to perceived safe havens of which gold is the ultimate example. Bearish investor sentiment was engendered at the time by a virtually unprecedented simultaneous occurrence in the OECD world of plunging GDP, surging government expenditure and the emergence of budget deficits not seen outside war time.

**----but subsequently a lacklustre showing:** Since the August 2020 peak, the trend in gold has been decidedly lacklustre, although there were signs of a firmer trend in early May. It has also been one of the few asset classes not to have participated in the commodity boom of recent months. At end March 2021 gold plumbed around a 10-month low of \$1,684/oz, 18% down on the August 2020 record. Subsequently, gold has trended higher and by May 7 was trading at \$1,831/oz, around a three-month high. Gold's lacklustre trend since August 2020 reflects four major factors as follows:

- Rising US bond yields.
- A solid performance by the US dollar with the currency not straying too far from 1.21 to the euro for any length of time. Currency market forecasts of a few months ago emphasising the potential for a major weakening in the dollar have proved wide of the mark.
- The ongoing strong performance of equity markets. Early in the crisis investor sentiment turned decidedly bullish vis-à-vis equity assets. Key drivers have been the roll out of efficacious covid vaccines at a rapid pace and expectations of a strong recovery in the OECD economy led by the US.

In addition to the above, the surging value of Bitcoin earlier this year may have diverted investor interest away from gold.

**Current price of around \$1,830/oz reflects an attractive buy-in level given expansionary monetary policy:** The key question now concerning gold is does a price of around \$1,830/oz offer an attractive buy-in valuation. We believe the answer is yes. This reflects gold's long-standing role as an immutable store of value and quasi currency in a world where, arguably, there is the potential for a significant medium-term weakening in the US dollar. Gold offers a hedge against this eventuality. The new conventional wisdom based on modern monetary theory is that inflation is independent of the growth in the money supply and that budget deficits can be expanded indefinitely in support of political objectives. History however tells us otherwise.

**US M2 money supply up 24% over past year:** It should be noted that in the 12 months to March 2021 the US broad-based money supply M2 grew by 24%, a very high rate historically and much higher than the underlying rate of nominal GDP growth. Conventional monetary theory suggests that monetary expansion on this scale will, with a lag, be reflected in accelerating inflation in the absence of an offsetting decline in velocity of circulation. Furthermore, the combination of expansionary monetary and fiscal policy is also likely to lead to a widening in the already sizeable US balance of payments deficit. Indeed, the latter phenomenon is already very apparent. Quite simply, demand in the economy is being boosted at a much faster pace than supply. Higher prices act as the control mechanism along with a depreciation in the currency.

We believe that in the coming months evidence will mount on the inflation and trade deficit fronts and as it does interest in gold is likely to grow. In our view, it would not be surprising to see gold exceeding the August 2020 high of \$2,052/oz by end Q1 2021.

**Exhibit 7: Gold price history (\$/oz)**

Source: Refinitiv

**Exposure to gold through physical gold ETFs and senior gold shares:** Owning gold can be easily and cost-effectively undertaken via a physical gold ETF such as iShares IAU. An alternative approach is the time honoured one of owning senior gold shares or indeed gold share ETFs. Compared with the metal, gold shares have the advantage of offering yield. It should be noted here that at a gold price of around \$1,830/oz margins on gold production can be sizeable bearing in mind all-in sustaining costs typically of \$1,000/oz or less.

**Newmont offers a historic yield of 3.3% and a dividend payout geared to the gold price:** The largest gold miner, Newmont Mining (NEM:NYSE), currently sells on a historic yield of 3.3% (10-year Treasuries 1.6%) based on a share price of \$67.33. Significantly, the dividend payout is partly geared to the gold price. According to Newmont's payout formula, the dividend yield would be around 5% at the current share price and assuming a gold price of \$2,100/oz. For those also seeking copper exposure Newmont has some large projects scheduled to come on-stream in the second half of this decade.

#### **DOES THE COMMODITY BULL MARKET HAVE FURTHER TO RUN?**

**Yes, in the near-term:** The key question now concerning the commodity bull market is does it persist into 2022 and possibly beyond or does it abate in the coming months. We err to the former view, at least for the next few months, reflecting the following:

- A very bullish macro-economic backdrop globally fuelled by hugely stimulative fiscal and monetary policies and pent-up business and consumer demand as the coronavirus crisis dissipates. Consensus global GDP growth forecasts are over 6% in 2021 and 4.5% in 2022. We believe a plausible scenario for 2023 and 2024 would be for 4.0% in the former and 3.5% in the latter.
- The supply of industrial metals and probably energy should remain tight over the balance of 2021. It appears that supply lines have been severely disrupted by the events of the past year and there are no easy remedies. Supply constraints are also being introduced in the Chinese metallurgical sector by more stringent emission standards and a clamp down on energy usage.
- Tight inventories for grain and oilseed plus drought hit harvests in Argentina and Brazil. Chinese animal feed needs continue to grow and remain substantial at 275mm tonnes in 2021.
- Little or no underlying spare capacity for key industrial commodities and particularly metals linked to electrification.

- The phenomenon of ‘free money’ propagated by the Federal Reserve is likely to continue into 2022 in support of full employment objectives. This translates into keeping money market rates at the front end of the curve close to zero. As a result, we expect commodity prices to continue to drawing support from the financial sector, including through ETFs.

#### **WHAT ARE THE RISKS?**

**Another coronavirus wave remains a possibility albeit with declining odds:** We believe the chief risk to the commodity bull market is another wave of coronavirus infections, particularly in the OECD world. If this occurred with the attendant shutdowns and restrictions on movement, it would deal a devastating blow to business and financial sector confidence. Economic activity would, of course, also be hit along with the demand for commodities. With vaccinations approaching or likely to approach critical-mass across a wide swathe of the OECD world in the near future, the risk of another wave of infections should have been greatly reduced compared with a few months ago. It nevertheless remains a possibility.

**An abrupt change in US monetary policy is a risk as inflationary pressure increases:** The other major risk relates to an abrupt change of course by the US Federal Reserve in the conduct of monetary policy. The current strategy is to keep short term money rates as close as possible to zero for as long as it takes to achieve full employment. The problem is intensifying inflationary pressures. For the moment these are mainly being reflected in input prices via the surge in commodities but could become more pervasive. Surprisingly perhaps, inflationary expectations as reflected by bond yields have remained subdued with 10-year Treasuries at around 1.60%.

**The Federal Reserve may have to hike money market rates sharply to correct for previous excesses:** A sustained rise in bond yields to well over 2% could at some stage force the Federal Reserve to change course given the need to finance the ever-widening budget deficit. Bearing in mind that the Federal Reserve tends to act with a significant lag, money market rates might need to rise sharply to levels of perhaps 4% to correct imbalances as recently suggested on Wall Street. Such an event would, at minimum, lead to a marked correction in commodity as well as equity markets.

#### **WHAT ABOUT A COMMODITY SUPER CYCLE?**

**Sustained period of historically high demand and rising commodity prices:** Goldman Sachs, among others, has advocated in recent months for a new super cycle in commodities. A super cycle may be defined as a sustained period of historically high demand caused by a structural change in the world economy, a major technological innovation, or a socio/political development. Typically, a super cycle would be characterised by tight supply/demand balances and rising prices in real terms. Key examples of super cycles have been in the 1960s through the early 1970s and from the early 2000s for about ten years. The former was associated with the rise of Japan as a major economic power and strong economic growth throughout the western world. The development of the auto industry along with the associated highway infrastructure was a key driver of the 1960s boom. The cycle beginning in the early 2000s was mainly driven by surging industrial growth in China the likes of which had never been seen before.

**Public policy emphasis on infrastructural spending implies stepped demand for industrial materials:** Goldman’s thesis for a new super cycle is based on the current widespread public policy emphasis on conventional infrastructural and new energy spending programmes. The argument is that both conventional infrastructural spending and the changeover from carbon-based energy sources to renewables and electrification will lead to a step-change in the use of industrial commodities and indeed conventional energy. The thesis is plausible providing there are no financing constraints and sufficient raw materials are available. To the extent that there are inadequate resources severe

inflationary pressures will occur leading to rising interest rates and bond yields and ultimately choked off economic activity.

**Infrastructural spending orientated to steel and heavy construction materials:** Infrastructural spending is particularly orientated to steel as well as heavy construction materials such as cement, aggregates and asphalt. Interestingly, these commodities are all carbon intensive during production and application.

The planned changeover from carbon-based sources of energy to renewables and electrification point to a massive increase in the use of a range of metals and other materials such as aluminium, cobalt, copper, graphite lithium, manganese, nickel, rare earths and silicon. Indicative of the magnitude of the task is the amount of copper required for a light, battery electric vehicle (BEV). According to industry estimates, this is 183 lbs against 35 lbs for an average conventional light vehicle. Based on global vehicle output of 100m/year, the incremental copper requirement is 6.7m tonnes/year or 27% of current primary production. An upgraded power transmission and distribution system would in practice boost the copper requirement still further.

**Incremental copper for 100 m light BEVs would be circa 7m tpy:** To put the hypothetical BEV copper requirement into perspective, it is worth noting that it would require roughly seven mines the size of Escondida in Chile. This is the world's largest copper mine typically producing around 1m tpy of contained copper. Note, an increase in copper production of circa 7m tpy would also require substantial investment in smelter, refining and fabrication capacity. Production of 100m BEVs/year would also require huge amounts of lithium, cobalt, nickel, manganese, graphite and rare earths.

#### **SO WHERE ARE THE RESOURCES COMING FROM?**

##### **A reality check is required**

**One of the world's great mysteries:** One of the world's great mysteries has always been where the proponents of vehicle electrification intend obtaining the necessary raw materials to convert the auto industry from ICEs (internal combustion engines) to BEVs within 10 to 15 years. There are also the massive costs involved in changing over technologies all of which have been underestimated by the politicians and others. A reality check is required.

**All vehicle electrification strategies require an array of expensive metals/materials:** As alluded to earlier, a partial solution to the copper intensity of BEVs is to substitute aluminium wherever possible. An alternative route to vehicle electrification is to use hydrogen fuel cell EVs (FCEVs) as the propulsion unit. While significantly more copper intensive than ICEs, we believe they are less so than BEVs. FCEVs also have the virtue of using proportionately less lithium, cobalt and nickel than BEVs due to the use of smaller batteries. They do however use platinum catalysts in the fuel stack cathodes to trigger the electrochemical reaction between hydrogen and oxygen to produce electricity.

##### **A potential lithium battery recycling game changer**

##### **Recycling and secondary processing of scrap may provide an answer for material needs:**

A partial solution to the heavy specialised material requirements of electrified vehicles is recycling activity and secondary or scrap-based processing. Interestingly, GM (General Motors) recently announced that its Ultium Cells LLC joint-venture with LG Energy Solution has formed a partnership with Toronto-based, Li-Cycle Corp, to recycle battery cell manufacturing scrap at Ultium's new Lordstown, Ohio facility. In due course the partnership could be extended to end-of-life batteries. The aim is to extract the contained lithium, cobalt, nickel and other high value materials for reuse in the battery manufacturing process. Ultium Cells, note, is GM's inhouse battery manufacturing arm. Li-Cycle Corp is planning to go public later this year on the NYSE through a SPAC (Special Purpose Acquisition Company). It will trade under the ticker symbol, LICY.

**GM-Li-Cycle battery materials recycling partnership:** Li-Cycle will deploy its proprietary hydrometallurgical resource recovery technology specially designed for lithium battery recycling. Historically, lithium recycling has proven particularly difficult and costly and is not usually considered economically viable. Assuming that Li-Cycle can recycle 100% of the scrap from battery manufacturing as claimed and ultimately from end-of-life batteries, their technology could be a game changer. This applies both in terms of battery economics and the supply of critical materials. Batteries are by far the largest element of cost in an EV at 35%-40% of the total. Materials constitute the largest weighting in battery costs. Just possibly the mystery has been solved.

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