

6 April 2022

Commodity Monitor

When the Darkness Comes

Commodity	ST view	LT view
Oil	positive	positive
Base Metals		
Nickel	neutral	positive
Copper	neutral	neutral
Aluminium	positive	positive
Precious Metals		
Gold	positive	positive
Silver	neutral	positive
Platinum	neutral	mildly negative
Palladium	neutral	positive
Steel and Bulks		
Steel	positive	neutral
Iron Ore	positive	mildly negative
Coking Coal	negative	neutral
Other		
Diamonds	positive	positive
Fertilisers	positive	positive

Source: Bloomberg, ATON Research

- This second edition of *Commodity Monitor* could be particularly useful in light of the limited access to financial terminals
- It includes short-term and fundamental views, 2022-24E price forecasts, as well as a global S&D balance outlook
- We are bullish on oil, nickel, aluminium and gold. We see headwinds for coking coal and platinum.

Positive Views

Oil: The 1mn bbl/day of inventory released by the US should only partially offset the loss of Russian exports. Long-term supply outlook requires \$200bn pa additional upstream capex to meet demand.

Nickel: Russia supplies about 20% of class 1 nickel with 99.8% purity, explaining concerns over potential supply disruptions. In the long run, nickel is a major beneficiary of electric vehicle (EV) proliferation.

Aluminium: Demand for aluminium should remain strong, expanding 3-4% YoY in 2022. Production is being impacted by the expensive energy (natural gas and coal prices are rallying) and raw materials.

Gold: The gold price already factors in several Fed rate hikes this year. The freezing of Russian international assets in dollars and euros may stimulate central banks to increase the gold share in reserves.

Negative Views

Coking coal: We see the current \$600/t benchmark Australia price as unsustainable and expect normalisation to \$300-400 on the back of the expected slowdown in Chinese consumption.

Platinum: The market should remain in a modest structural surplus, which may be absorbed by investor demand. Platinum has lost its premium jewellery status and diesel engines are losing market share.

Figure 1: Historical and forecasted prices by commodity

		2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON estimates										
Oil										
Brent	\$/bbl	64	43	71	101	109	107	100	105	110
Base Metals										
Nickel	\$/t	13,999	13,858	18,474	26,071	32,093	30,743	25,000	22,000	23,000
Copper	\$/t	6,005	6,186	9,320	9,981	10,368	10,303	9,700	9,500	9,500
Aluminium	\$/t	1,793	1,706	2,477	3,247	3,481	3,435	3,400	3,300	3,500
Precious Metals										
Gold	\$/oz	1,394	1,772	1,799	1,877	1,927	1,921	1,900	2,000	2,100
Silver	\$/oz	16.0	21.0	25.1	24.0	24.6	24.6	24.0	23.0	24.0
Platinum	\$/oz	866	887	1,092	1,030	990	1,003	1,100	1,050	1,100
Palladium	\$/oz	1,535	2,177	2,398	2,324	2,302	2,316	2,200	2,300	2,500
Steel and Bulks										
HRC Black Sea	\$/t	461	476	765	870	1,080	983	1,050	850	750
Iron Ore	\$/t	90	105	158	128	142	140	150	140	130
Coking Coal	\$/t	176	126	223	459	521	512	450	350	300
Other										
Diamonds	\$/t	190	170	193	187	262	263	250	270	290
DAP Black Sea	\$/t	390	372	588	900	900	902	900	800	750
Urea Black Sea	\$/t	248	230	484	806	908	896	700	600	650

Source: Bloomberg, ATON Research

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Oil

Short-term view (positive): The oil price continues to remain above \$100/bbl Brent, driven by high demand and concerns over supply disruptions from Russia. The latest US decision to release 180mn barrels of oil (around 1mn bbl per day) should help to offset the loss of Russian supply, but only partially. We expect oil prices to stay firm through 2022.

The global oil market is facing strong demand as COVID restrictions have largely faded worldwide, but the momentum is slowing in the US and Japan. The Russian oil supply should begin to normalise with Transneft expecting port shipments to increase by 15% MoM in April.

Figure 2: Oil historical and forecasted prices, \$/bbl Brent

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	64	43	71	101	109	107	100	105	110
Consensus							93	79	85
Forward							101	92	86

Source: Bloomberg, ATON Research

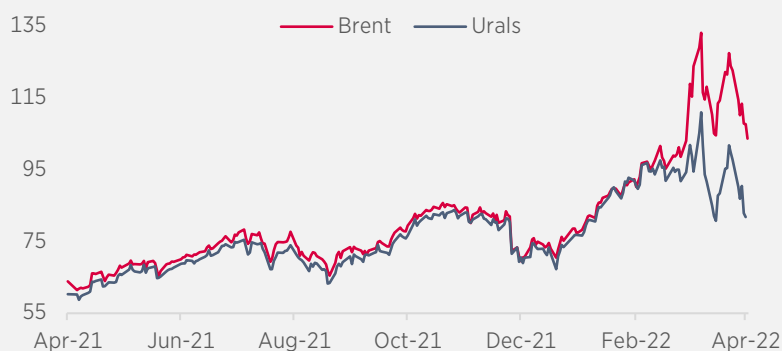
Long-term view (positive): A sustainably low oil price resulted in reduced capital spending for exploration and production companies in 2020 and 2021 (20-30% below pre-pandemic levels). According to the largest O&G companies, investments must accelerate from \$350bn to \$550-600bn every year in order for production to keep up with global demand. We therefore believe the industry and the oil price will remain sensitive to global macro and geopolitics.

Figure 3: Oil supply/demand balance, kt

	2019	2020	2021	2022E	2023E	2024E
Global supply	36,500	34,164	34,566	36,391	37,084	37,522
Global demand	36,500	33,069	35,259	36,464	37,084	37,486
Balance	0	1,095	-694	-73	0	37
Supply growth	0%	-6%	1%	5%	2%	1%
Demand growth	3%	-9%	7%	3%	2%	1%

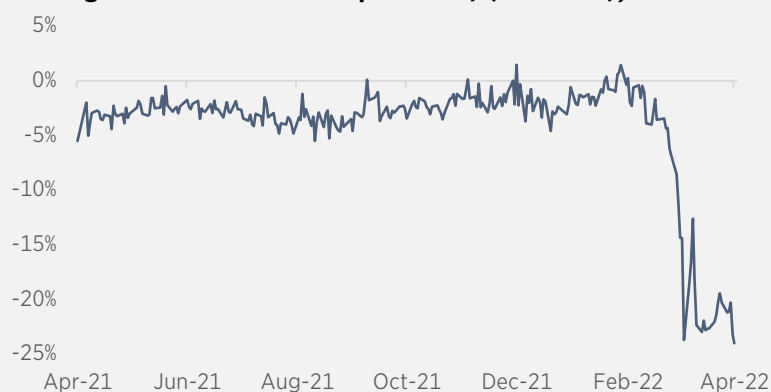
Source: Bloomberg, ATON Research

Figure 4: Brent and Urals price dynamics, \$/bbl



Source: Bloomberg, ATON Research

Figure 5: Brent to Urals premium/(discount), %



Source: Bloomberg, ATON Research

Base Metals

Nickel

Short-term view (neutral): There was a sharp increase in quotations for nickel in Europe on 7-8 March to almost \$45,800/t (a level unseen since 2008) amid fears of interruptions in the supply from Russia (share in world supply: 17%), as well as the forced closing of margin positions (a classic short squeeze). The price rally prompted the LME to suspend trading for a week and cancel nearly \$4bn worth of top-priced deals. As of now, the price remains high at \$32,750/t. Going forward, the nickel price should be supported by supply uncertainty stemming from the Ukrainian crisis, as Russia is a key producer and exporter of metals and ranks third in the world in nickel production. Possible export disruption in Russia and higher energy prices in Europe could increase downward pressure on visible exchange inventories.

Figure 6: Nickel historical and forecasted prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	13,999	13,858	18,474	26,071	32,093	30,743	25,000	22,000	23,000
Consensus							23,708	21,869	20,150
Forward							32,252	32,004	31,898

Source: Bloomberg, ATON Research

Long-term view (positive): The electric vehicle market will shape nickel demand for the production of lithium-ion batteries (a battery electric vehicle [BEV] battery requires 30-110kg of nickel). China should become the main demand source, as manufacturers begin to install batteries with a high nickel content in their cars. The mitigating factor, however, could be the technological ability to convert NPI into nickel matte (to produce nickel sulphate). We remain positive on the long-term nickel outlook.

Figure 7: Nickel supply/demand balance, kt

	2019	2020	2021	2022E	2023E	2024E
Global supply	2,408	2,473	2,702	3,242	3,323	3,390
Global demand	2,443	2,410	2,851	3,183	3,312	3,413
Balance	-35	63	-149	59	11	-23
Supply growth	9%	3%	9%	20%	2%	2%
Demand growth	5%	-1%	18%	12%	4%	3%

Source: Bloomberg, ATON Research

Copper

Short-term view (neutral): The copper market looks broadly balanced with a minor 100kt deficit expected in 2022. We believe that global consumption will rise on the post-COVID recovery and increased investment in renewable energy and transport electrification. We are neutral on the metal given the potential risk of a reduction in liquidity injections and a rise in global interest rates on the one hand, and further mine production growth on the other. On 7-8 March, the metal rallied due to growing tensions around Russia and Ukraine – copper reached an all-time high of \$10,730/t.

Figure 8: Copper historical and forecasted prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	6,005	6,186	9,320	9,981	10,368	10,303	9,700	9,500	9,500
Consensus							9,776	9,541	9,728
Forward							10,276	10,299	10,180

Source: Bloomberg, ATON Research

Long-term view (neutral): We expect the market to be balanced for the next several years. Demand will likely expand, driven by the rapid development of industrial sectors, such as EV batteries and semiconductor wiring. For example, one EV uses 75-80kg of copper (vs 20-25kg used in an ICE vehicle), and by 2040, passenger EVs are set to consume more than 3.7mtpa of copper. Separately, a single-wind turbine requires over 3.5 tonnes of the metal.

In addition, demand for copper should be supported by the global transition to carbon neutrality, which will require a massive upgrade of the main energy infrastructure. The limited number of potential copper mining projects should scale the risk of a sizeable market deficit in the upcoming years.

Figure 9: Copper supply/demand balance, mt

	2019	2020	2021	2022E	2023E	2024E
Global supply	23,643	23,757	24,090	25,010	26,007	26,723
Global demand	23,651	23,452	24,327	25,018	25,905	26,687
Balance	-8	305	-237	-7	102	37
Supply growth	1%	0%	1%	4%	4%	3%
Demand growth	0%	-1%	4%	3%	4%	3%

Source: Bloomberg, ATON Research

Aluminium

Short-term view (positive): Surging aluminium prices are currently being driven by expectations of a shortage in the supply of raw materials from Russia (which accounts for 6% of world aluminium supply), increased logistics costs, as well as rising energy prices. At the moment, quotes exceed \$3,500/t. On 28 Feb, Rusal announced it was halting alumina shipments from its 1.75mtpa Nikolaev refinery (which accounts for more than 20% of Rusal's primary aluminium production) amid logistical and transport problems and Australia's ban on aluminium ores, which adds pressure to the supply disruptions.

The Ukrainian crisis aside, high gas prices in Europe have led to significant disruptions to aluminium smelting production due to a substantial increase in the cost of power. Given the uncertainty surrounding natural gas supplies to Europe, we expect aluminium prices at \$3,400/t in 2022E.

Figure 10: Aluminium historical and forecasted prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	1,793	1,706	2,477	3,247	3,481	3,435	3,400	3,300	3,500
Consensus							3,037	2,947	2,992
Forward							3,441	3,394	3,257

Source: Bloomberg, ATON Research

Long-term view (positive): China's crackdown on pollution and the reinforcement of reforms aimed at decarbonisation of the country's economy (such as capacity closures) add headwinds to supply. With this, the demand outlook looks firm, supported by the evolution of the automotive industry – aluminium usage per car is expected to increase to 150-250kg per vehicle (to reduce weight, pollution and durability). The metal is also heavily used in creating charging infrastructure and can replace copper in some electrical applications. Demand should remain firm in 2022 and thereafter, growing at around a 2-4% CAGR.

Figure 11: Aluminium supply/demand balance, mt

	2019	2020	2021	2022E	2023E	2024E
Global supply	66,536	65,300	67,547	70,027	71,316	73,455
Global demand	65,300	63,900	68,763	71,056	72,108	73,550
Balance	1,236	1,400	-1,216	-1,029	-792	-95
Supply growth	4%	-2%	3%	4%	2%	3%
Demand growth	0%	-2%	8%	3%	1%	2%

Source: Bloomberg, ATON Research

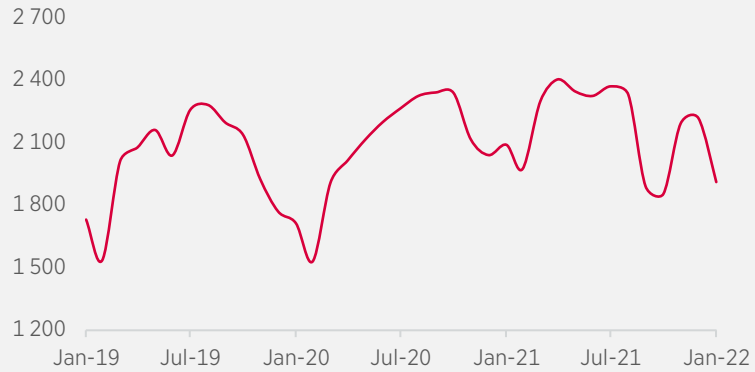
Base Metals in Graphs

Figure 12: China NPI total production, kt



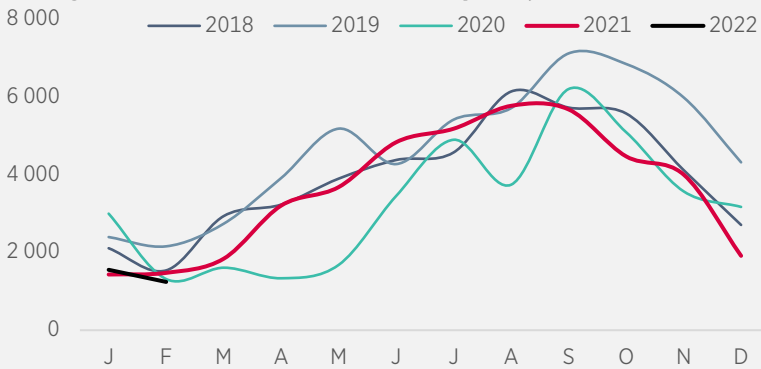
Source: Bloomberg, ATON Research

Figure 13: China stainless steel production, kt



Source: Bloomberg, ATON Research

Figure 14: Chinese nickel total imports, kt



Source: Bloomberg, ATON Research

Figure 15: China's Li Keqiang Index



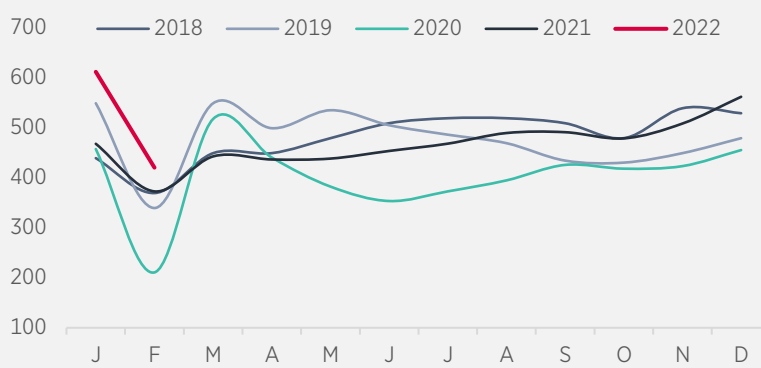
Source: Bloomberg, ATON Research

Figure 16: China's unwrought copper imports, kt



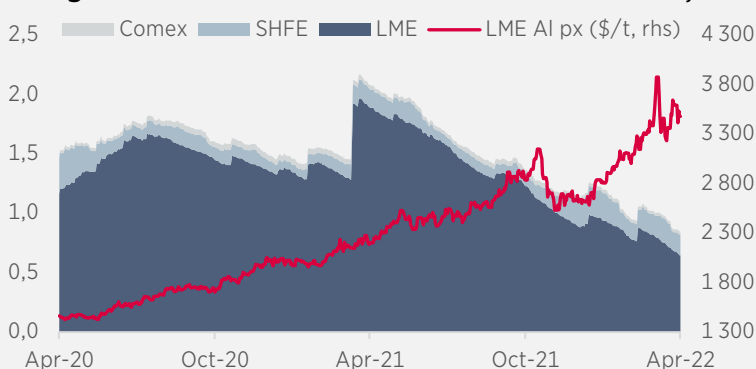
Source: Bloomberg, ATON Research

Figure 17: Chinese aluminium exports



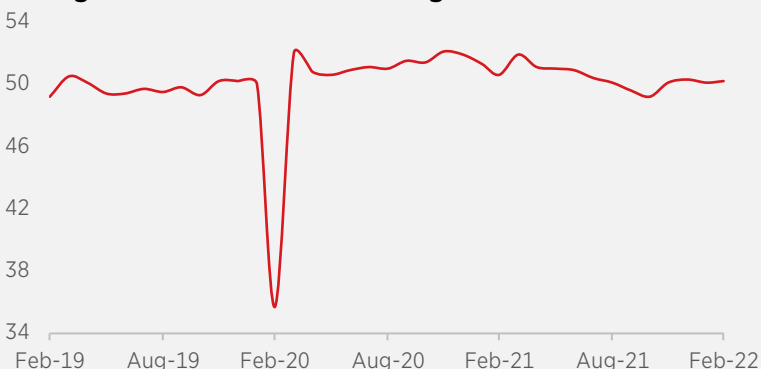
Source: Bloomberg, ATON Research

Figure 18: Aluminium inventories on LME and SHFE, mt



Source: Bloomberg, ATON Research

Figure 19: China manufacturing PMI



Source: Bloomberg, ATON Research

Precious Metals

Gold

Short-term view (positive): The market and the gold price have already factored in several interest rate hikes this year, and we see upside in the gold price in the next 12 months to \$2,300/oz. We believe that the rally in commodities could weaken the growth inflation mix in Europe and increase concerns of a US economic slowdown or recession. Given the rapid increase in commodity prices, higher interest rates might be ineffective in tapering inflation, which could make gold shine. Still, in a three-month horizon, we see the gold price as highly volatile, potentially remaining below \$2,000/oz on the expected resolution of the Ukrainian geopolitical crisis.

Figure 20: Gold historical and forecasted prices, \$/oz

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	1,394	1,772	1,799	1,877	1,927	1,921	1,900	2,000	2,100
Consensus							1,850	1,740	1,599
Forward							1,959	1,994	1,907

Source: Bloomberg, ATON Research

Long-term view (positive): We continue to like gold as a long-term investment that protects investors from unexpected spikes in inflation as well as geopolitical shocks. We believe the freezing of Russian dollar and euro reserves may stimulate central banks to increase the gold share in reserves. For example, China's gold share in its reserves is only 3% of \$3.3trn vs Russia's 22% of \$0.6trn. Russia could eventually not only not sell its gold reserves, but potentially return to being a major gold buyer once the rouble stabilises. The cancellation of VAT on physical gold triggered huge retail demand for the metal in Russia.

Bitcoin substitution is a risk but is constrained by the unique risks of the cryptocurrency – volatility, a higher probability of being hacked (versus gold being stolen), and dependency on mining operations in foreign countries.

Figure 21: Gold supply/demand balance, t

	2019	2020	2021	2022E	2023E	2024E
Global supply	4,863	4,706	4,655	4,579	4,533	4,488
Global demand	4,358	3,745	4,021	4,189	4,283	4,267
Balance	505	961	633	390	250	221
Supply growth	5%	-3%	-1%	-2%	-1%	-1%
Demand growth	-1%	-14%	7%	4%	2%	0%

Source: Bloomberg, ATON Research

Silver

Short-term view (neutral): We expect silver to be more exposed to the expected global economic slowdown than gold, given that 50% of its demand is industrial and only 20% comes from investment. We therefore maintain our neutral stance on silver, as we believe that gold will be the defensive metal top pick in 2022.

We were surprised that silver's performance vs gold was so unimpressive in the past 12 months, despite the rally in the global economy on the wave of stimulus. The gold to silver ratio has not changed much in the last 12 months, holding around 76x. The broadly expected rerating vs earlier levels (67x 5Y ago) has not materialised.

Figure 22: Silver historical and forecasted prices, \$/oz

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	16.0	21.0	25.1	24.0	24.6	24.6	24.0	23.0	24.0
Consensus							23.5	21.7	21.3
Forward							25.5	25.7	25.5

Source: Bloomberg, ATON Research

Long-term view (positive): In the long run we are bullish on silver, seeing healthy future prospects for the market with its sizable industrial demand. Its application should become more intensive with the growth of the electric vehicle market and the development of alternative energy sources. The metal accounts for over 5% of the cost of solar panel construction and this rapidly developing industry already consumes approximately 10% of mined silver. Silver usage should also intensify with the acceleration of the 5G infrastructure.

The silver market fell into deficit in 2021 for the first time in six years. This year, we expect the market to be more balanced, and see the potential for a minor deficit in 2023, if the global economy remains on a growth trajectory despite rising commodity inflation fears.

Figure 23: Silver supply/demand balance, t

	2019	2020	2021	2022E	2023E	2024E
Global supply	31,685	30,365	31,883	33,840	34,516	34,861
Global demand	30,960	27,872	32,130	33,094	33,756	34,431
Balance	725	2,493	-247	746	760	430
Supply growth	0%	-4%	5%	3%	2%	1%
Demand growth	1%	-10%	15%	3%	2%	2%

Source: Bloomberg, ATON Research

Platinum

Short-term view (neutral): The market is likely to remain in surplus in 2022 despite risks related to Ukrainian geopolitics (Russia accounts for 10% of the global platinum supply) with a 0.7moz expected excess this year. Platinum ore stockpiles accumulated due to the coronavirus pandemic have mostly been processed, suggesting headwinds to supply growth this year – production should be broadly flat. The automotive industry recovered and platinum demand from the sector rose 11% YoY in 2021, but in the next 12 months, we see continuing headwinds to production from semiconductor shortages.

Figure 24: Platinum historical and forecasted prices, \$/oz

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	866	887	1,092	1,030	990	1,003	1,100	1,050	1,100
Consensus							1,076	1,166	1,220
Forward							1,001	1,006	1,006

Source: Bloomberg, ATON Research

Long-term view (mildly negative): The market should remain in a modest structural surplus (0.9moz in 2022), although this will likely be absorbed by investor demand. Also, the share of diesel engines should continue to decline in Europe, which would offset the increase in demand coming from the modest substitution of palladium with platinum. Platinum supply is fragile and heavily concentrated in South Africa, which accounts for 70% of global mined production. The major expansion project in the pipeline is Two Rivers Merensky, with forecasted production of 182koz of PGMs per year and commissioning in 2Q23.

Long-term growth in demand for platinum is driven by the development of green hydrogen, where platinum is used to power

fuel pumps in cars. Hydrogen is expected to meet 25% of the world's energy needs by 2050. On the negative side, jewellery demand for platinum continues to fade: once its price assumed a sustained discount to gold, consumers no longer regarded platinum as a premium jewellery material.

Figure 25: Platinum supply/demand balance, moz

	2019	2020	2021	2022E	2023E	2024E
Global supply	8,208	6,744	8,195	8,188	8,229	8,270
Global demand	8,071	7,260	7,040	7,320	7,613	7,917
Balance	137	-516	1155	868	616	353
Supply growth	1%	-18%	22%	0%	0%	0%
Demand growth	7%	-10%	-3%	4%	4%	4%

Source: Bloomberg, ATON Research

Palladium

Short-term view (neutral): The demand outlook for palladium continues to be impaired by automotive industry challenges from the persistent semiconductor shortage. We see the metal remaining in a 0.1-0.2moz deficit in 2022 (vs. 0.2moz in 2021) assuming there are no supply disruptions from Russia, which accounts for 40% of global production.

We believe the \$2,000/oz level is comfortable for both producers and consumers as prices surging to \$3,000/oz incentivise metal substitution, in our view. Around 80% of palladium is used in automotive catalytic converters and the expected car production disruptions are strongly affecting demand for the metal.

Figure 26: Palladium historical and forecasted prices, \$/oz

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	1,535	2,177	2,398	2,324	2,302	2,316	2,200	2,300	2,500
Consensus							2,300	2,371	2,078
Forward							2,270	2,258	n/a

Source: Bloomberg, ATON Research

Long-term view (positive): Market consensus expects the semiconductor shortage to ease in about 12 months, which in our view should drive the palladium price back to \$2,500/oz levels by mid-2023. Production in South Africa and Russia is expected to recover as work-in-progress material stocks are depleted.

In the long run, palladium demand should be supported by the regulatory tightening of automotive CO2 emissions and the overall growth of global car sales. The risk of substitution with platinum is offset by the potential for gradual replacement of more expensive rhodium with palladium (1oz of rhodium can be replaced with 4-8oz of palladium).

The electrification of the car industry poses a risk to palladium demand, as palladium is heavily used in hybrids, but not in pure EVs. A faster than currently expected shift to hybrids is a major risk to the long-term positive outlook for palladium, in our view.

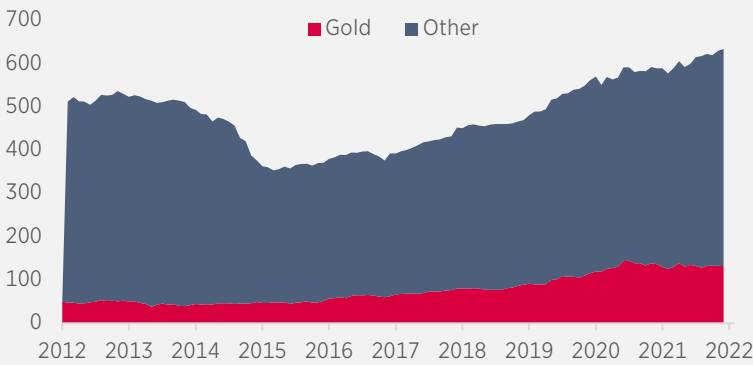
Figure 27: Palladium supply/demand balance, koz

	2019	2020	2021	2022E	2023E	2024E
Global supply	10,605	9,480	9,782	10,298	10,459	10,564
Global demand	11,192	9,589	10,030	10,496	10,894	11,003
Balance	-587	-109	-248	-198	-435	-439
Supply growth	8%	-11%	3%	5%	2%	1%
Demand growth	4%	-14%	5%	5%	4%	1%

Source: Bloomberg, ATON Research

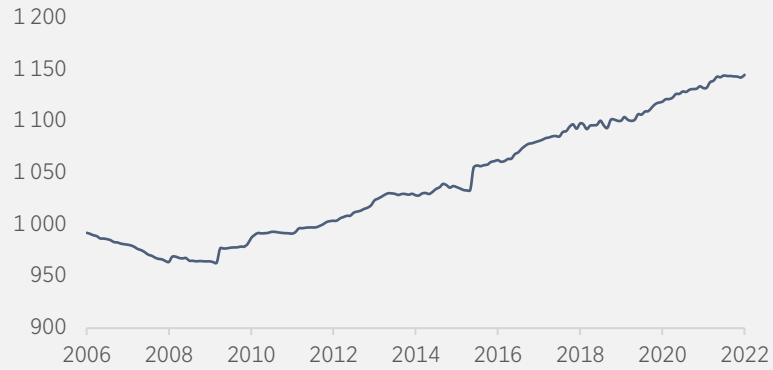
Precious Metals in Graphs

Figure 28: Russian reserves including gold, \$bn



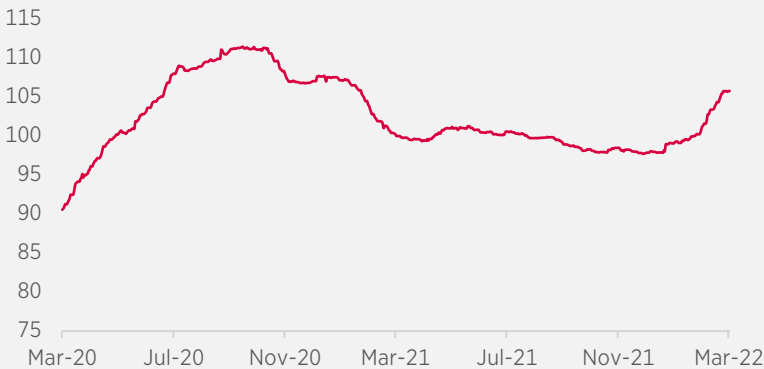
Source: Bloomberg, ATON Research

Figure 29: Global gold reserve holdings, moz



Source: Bloomberg, ATON Research

Figure 30: Total ETF holdings of gold, moz



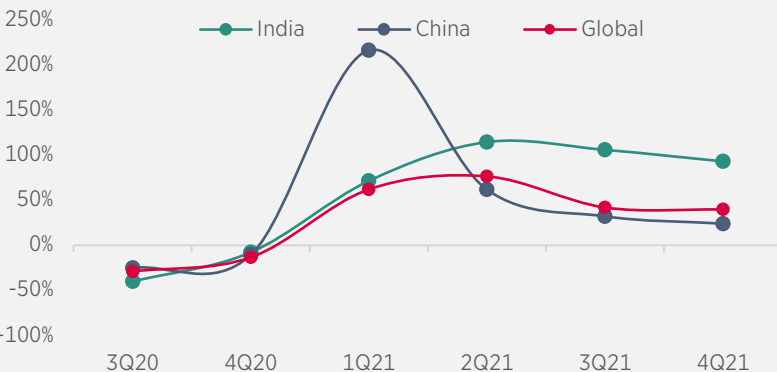
Source: Bloomberg, ATON Research

Figure 31: Total ETF holdings of silver, moz



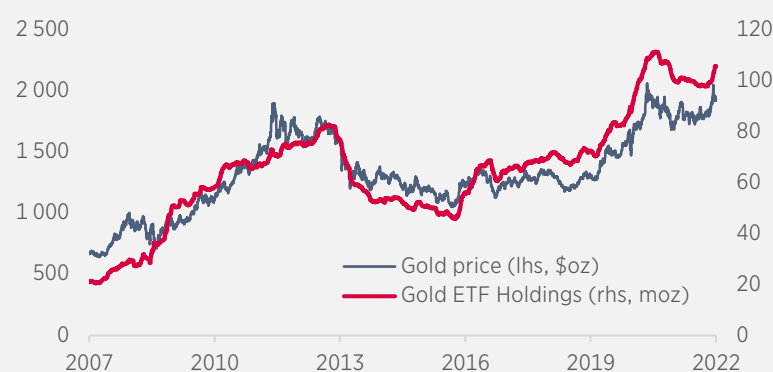
Source: Bloomberg, ATON Research

Figure 32: Jewellery consumption growth, YoY



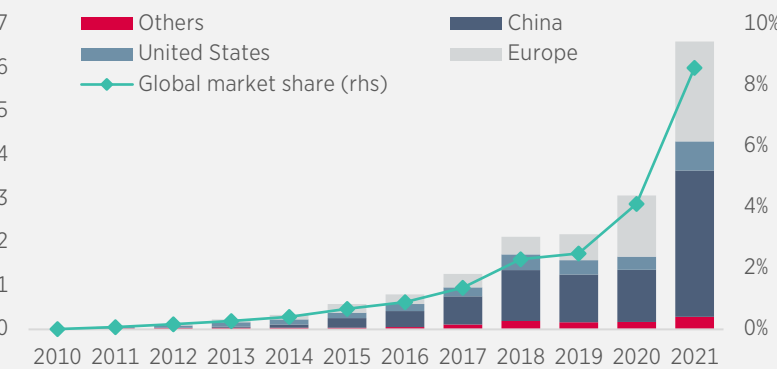
Source: Bloomberg, ATON Research

Figure 33: Gold price follows demand from gold ETFs



Source: Bloomberg, ATON Research

Figure 34: Global sales and sales market share of electric cars, mn registrations



Source: Bloomberg, ATON Research

Figure 35: Global light vehicle sales, mn units



Source: Bloomberg, ATON Research

Steel and Bulks

Steel

Short-term view (positive): The global steel market is becoming ever more segregated with Russia's finished steel volumes banned from Europe and Russia mulling domestic price regulations.

The shape of local market mechanisms and implications for domestic steel demand (our base case: -10% YoY) are still unknown. We expect export Black Sea quotes to be supported by uncertainty around Russian exports, as well as strong coking coal and iron ore quotes. Meanwhile, the construction season is beginning in the Northern Hemisphere, which should help support prices.

The relocation of volumes to other markets and fixing export settlements will take up to six months, we estimate. It is not yet clear how Russian volumes will affect prices in Asia, since local steel prices in China already reflect a 40% discount to European quotes.

Figure 36: HRC Black Sea historical and forecasted prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	461	476	765	870	1,080	983	1,050	850	750
Consensus							n/a	n/a	n/a
Forward							n/a	n/a	n/a

Source: Bloomberg, ATON Research

Long-term view (neutral): Steel is a cyclical commodity and we expect the benchmark (HRC Black Sea) price to normalise at \$850/t in 2023E and \$750/t in 2024E, once demand stabilises after the period of post-pandemic recovery starting in 2021.

China's steel demand remains fragile as the property sector has struggled for months, after the country's campaign to reduce debt triggered a liquidity crisis among some major developers, including Evergrande, resulting in bond defaults and delayed projects.

Steel production curbs are also in place as the country is targeting to reduce emissions. The steel sector accounts for 15% of total emissions nationwide, making it the primary target.

Figure 37: Steel supply/demand balance, mt

	2018	2019	2021	2022E	2023E	2024E
Global crude supply	1,874	1,878	2,020	2,072	2,126	2,181
Global finished supply	1,747	1,751	1,884	1,933	1,983	2,018
Global finished demand	1,775	1,772	1,874	1,925	1,986	2,021
Balance	-28	-20	-10	-8	-3	-2
Supply growth	3%	0%	8%	3%	3%	2%
Demand growth	4%	0%	6%	3%	3%	2%

Source: Bloomberg, ATON Research

Iron Ore

Short-term view (positive): Iron ore prices have added \$70 since their 2021 lows, driven by strong steel prices and more stable demand expected for 2022. The Covid pandemic in China hit steel demand: top steelmaking city Tangshan faced a temporary lockdown. Due to transportation disruptions, many mills face raw material shortages, which is fuelling iron ore prices. We expect trading flows to normalise in 1-2 months when the imposed lockdowns ease.

Russia and Ukraine are minor players on the iron ore export market, so we do not expect the eventual resolution of their conflict to have a strong impact on iron ore quotes.

Figure 38: Iron ore historical and forecasted prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	90	105	158	128	142	140	150	140	130
Consensus							112	90	89
Forward							n/a	n/a	n/a

Source: Bloomberg, ATON Research

Long-term view (mildly negative): Structurally the iron ore market should face a slowdown in demand growth, as under the zero-carbon scenario we expect China's steel production to peak in 2024 and decline to 621mt pa by 2050, from 1,033mt in 2021. At the same time, China plans to boost domestic iron ore output by 100mt to 370mt and to raise the share of overseas iron ore production from 120mt in 2020 to 220mt by 2025.

We see normalised long-term iron ore benchmark price quotes at around \$120-140/t, which are still high levels historically: 2015-20 benchmark quotes averaged \$70/t.

Figure 39: Iron ore supply/demand balance, mt

	2019	2020	2021	2022E	2023E	2024E
Global supply	2,320	2,250	2 351	2 410	2 475	2 500
Global demand	2,094	2,035	2 111	2 140	2 173	2 216
Balance	226	215	240	270	302	283
Supply growth	1%	-3%	4%	3%	3%	1%
Demand growth	4%	-3%	4%	1%	2%	2%

Source: Bloomberg, ATON Research

Coking Coal

Short-term view (negative): The coking coal price squeeze has continued for longer than we expected, as we predicted a near-term reversion to the \$200-250/t Australian benchmark when supply disruptions were resolved – namely, normalisation of Mongolia-China trade relations and a ramp-up of Australian exports.

Coking coal FOB prices fell after Covid-19 and cost pressures reduced demand from steel mills. We still believe the current \$521/t levels are unsustainable. The expected slowdown in Chinese steel consumption supports our conservative view on coking coal. Moreover, unlike metals, coal is easy to produce and only requires processing, no smelting or refining; supplies can therefore be increased relatively rapidly and normalisation of supply should quickly balance the market.

Figure 40: Hard coking coal historical and forecast prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	176	126	223	459	521	512	450	350	300
Consensus							288	207	173
Forward							423	310	310

Source: Bloomberg, ATON Research

Long-term view (neutral): Chinese local premiums to Australian quotes have collapsed from the \$150/t levels seen in 2021 thanks to stronger domestic supply and the normalisation of global coal trade routes. We model the long-term coking coal price at \$300/t. Russia is a significant coking coal exporter, accounting for around 30% of requirements in the EU, Japan and South Korea. We therefore expect the geopolitical risk premiums to decline when the conflict in Ukraine is resolved.

We see coking coal as a proxy for Chinese steel production, which the government is currently tackling to battle pollution and help the troubled property market. In the long run, we anticipate pressure on prices from rising scrap availability and greater production of HBI.

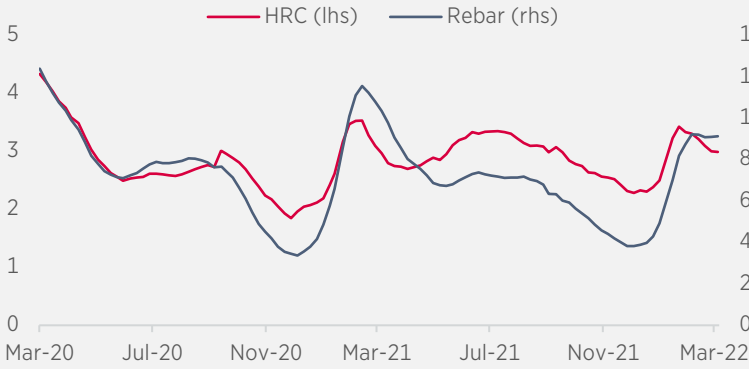
Figure 41: Coal supply/demand balance, mt

	2019	2020	2021	2022E	2023E	2024E
Global supply	999	935	969	1,045	1,102	1,135
Global demand	1,063	1,005	1,084	1,132	1,141	1,149
Balance	-64	-70	-115	-87	-39	-14
Supply growth	3%	-6%	4%	8%	5%	3%
Demand growth	2%	-5%	8%	4%	1%	1%

Source: Bloomberg, ATON Research

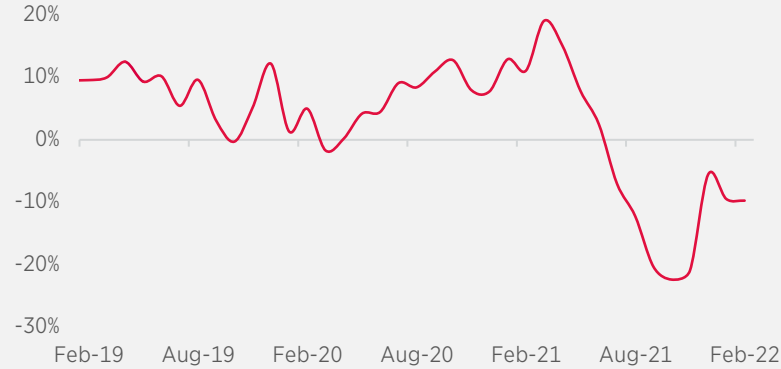
Steel and Bulk Materials in Graphs

Figure 42: HRC and rebar inventories in China, mt



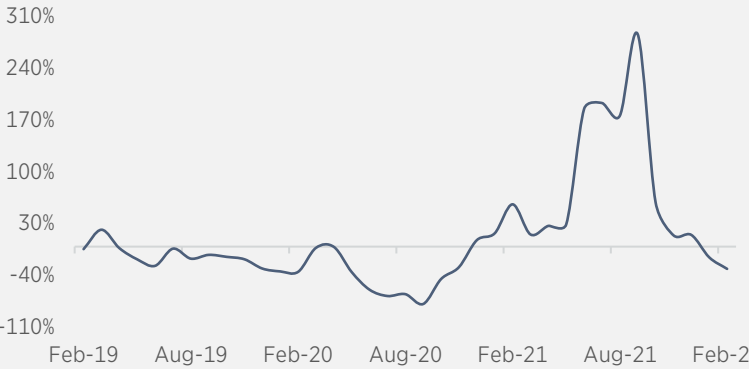
Source: Bloomberg, ATON Research

Figure 43: China crude steel production, YoY



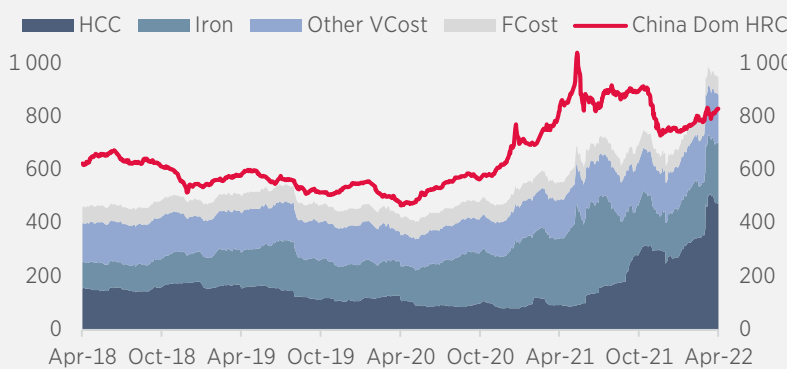
Source: Bloomberg, ATON Research

Figure 44: Net steel exports from China, YoY



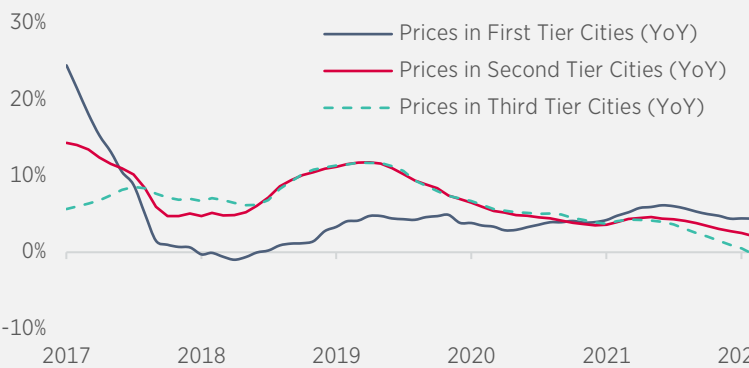
Source: Bloomberg, ATON Research

Figure 45: Steel price vs the costs basket



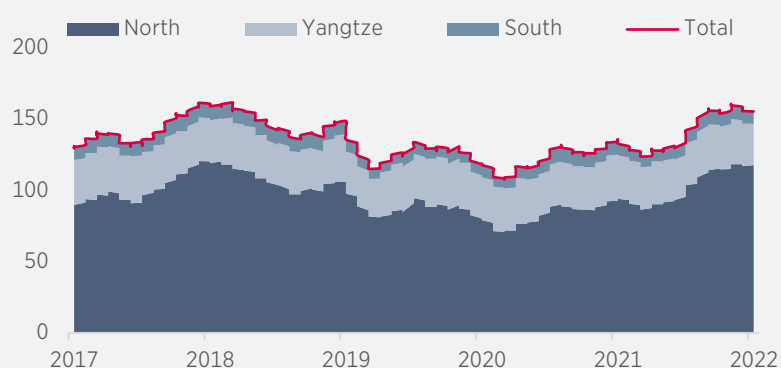
Source: Bloomberg, ATON Research

Figure 46: Residential prices in China, YoY



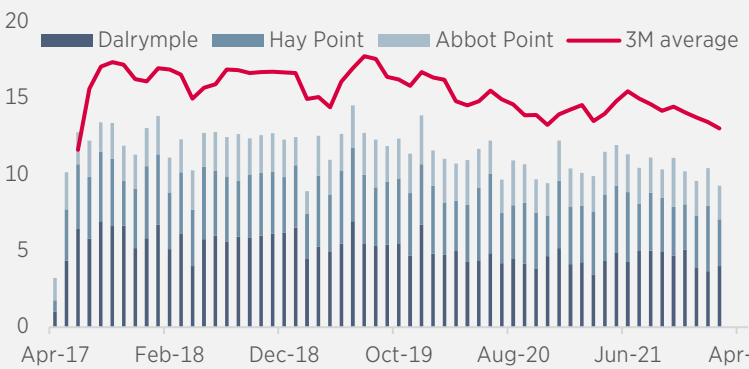
Source: Bloomberg, ATON Research

Figure 47: Iron ore port inventories in China



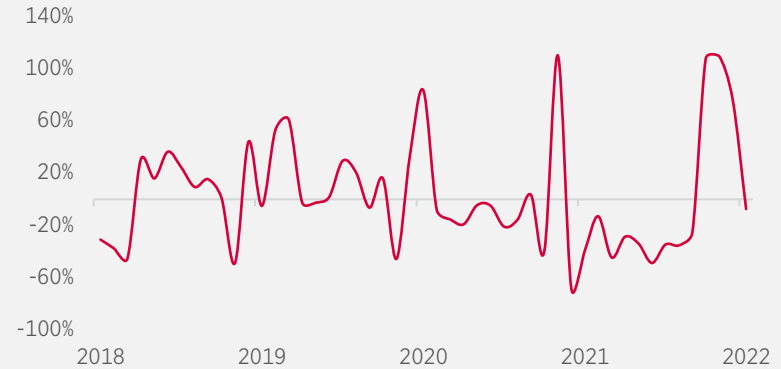
Source: Bloomberg, ATON Research

Figure 48: Coking coal exports from Queensland, mt



Source: Bloomberg, ATON Research

Figure 49: China coking coal imports, YoY



Source: Bloomberg, ATON Research

Other

Diamonds

Short-term view (positive): We remain upbeat on the diamond outlook due to depleted global inventories, declining production and strong underlying demand. To recap, Alrosa released over 12mn ct from its inventory in 2021 with stocks reaching an all-time low of 8.4mn ct at end-2Q21.

Diamond prices jumped due to the approaching deficit and are now cooling due to Russia supply uncertainty and the thin manufacturing margins caused by high costs. The list of jewellers that plan to boycott Russian diamonds is increasing (including Tiffany, Chopard and other names), which increases the possibility of segregating the diamond markets. At this stage, separating Russian diamonds in the production chain is technically complicated, but if this issue is resolved a Russian discount for the stones could emerge.

Figure 50: Diamond historical and forecasted prices, \$/ct

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	190	170	193	187	262	263	250	270	290
Consensus							n/a	n/a	n/a
Forward							n/a	n/a	n/a

Source: Bloomberg, ATON Research

Long-term view (positive): In the foreseeable future, we expect diamond jewellery demand to remain strong, supported by the global GDP growth outlook. More importantly, we expect global supply to be flat or only marginally higher at around 110-115 mct in the long run, due to the lack of new diamond projects. ALROSA's baseline scenario assumes an increase in its output to 35-36mn ct in the midterm (vs 31.5mn ct anticipated in 2021, with 5% upside potential) and to 37-38mn ct in the long term.

Synthetic stones appear to have lost the battle for consumer attention and are becoming a cheaper niche product.

Figure 51: Diamond supply/demand balance, mn ct

	2019	2020	2021E	2022E	2023E	2024E
Global supply	141	110	111	113	112	122
Global demand	n/a	109	123	138	140	142
Balance	n/a	1	-12	-25	-28	-20
Supply growth	-5%	-22%	1%	2%	-1%	9%
Demand growth	n/a	n/a	13%	12%	1%	1%

Source: Bloomberg, ATON Research

Fertilisers

Short-term view (positive): We are upbeat on the near-term prospects of fertiliser prices, which have soared on the back of surging natural gas prices and global supply disruptions caused by the US import duties on Russian fertilisers and trading restrictions on Belaruskali.

The situation was worsened by the Ukraine conflict, since Russia introduced export restrictions on ammonia and other fertilisers. China has also suspended fertiliser exports from the country (we estimate up to 2mt of volumes could be affected). We therefore believe that global supply uncertainty and surging gas prices should keep fertiliser prices firm.

Figure 52: DAP Black Sea historical and forecasted prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	390	372	588	900	900	902	900	800	750
Consensus							n/a	n/a	n/a
Forward							n/a	n/a	n/a

Source: Bloomberg, ATON Research

Figure 53: Urea Black Sea historical and forecasted prices, \$/t

	2019	2020	2021	2022 YTD	Spot	2022 MtM	2022E	2023E	2024E
ATON	248	230	484	806	908	896	700	600	650
Consensus							n/a	n/a	n/a
Forward							n/a	n/a	n/a

Source: Bloomberg, ATON Research

Long-term view (positive): Expensive natural gas (which caused fertiliser production in Europe to fall), the looming food crisis and surging inflation should make fertilisers structurally attractive in the coming years. We also expect the fertiliser market to be supported by higher feedstock costs, including phosphate rock and ammonia.

The strength of soft commodity prices and the timing of purchases in India should be crucial for the phosphate market's direction in 2022. India could face a fertiliser shortage in the next several quarters as skyrocketing fertiliser prices have impaired imports and production in the country has declined.

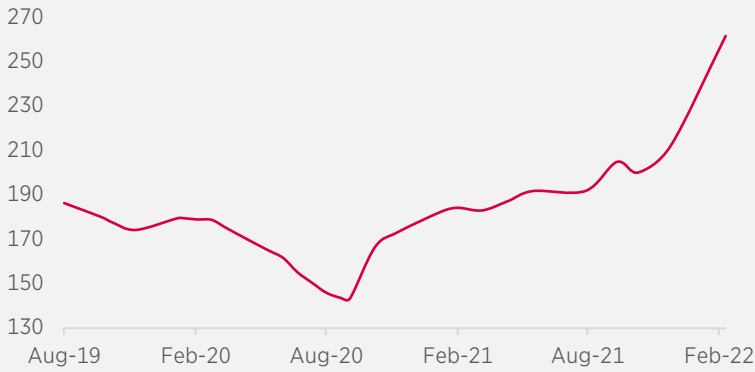
Figure 54: Phosphates supply/demand balance, mt

	2019	2020	2021	2022E	2023E	2024E
Global supply	48.8	46.0	47.7	48.9	49.6	50.0
Global demand	46.6	47.2	48.3	49.4	50.0	50.0
Balance	2.2	-1.2	-0.6	-0.5	-0.4	0.0
Supply growth	7%	-6%	4%	3%	1%	1%
Demand growth	1%	1%	2%	2%	1%	0%

Source: Bloomberg, ATON Research

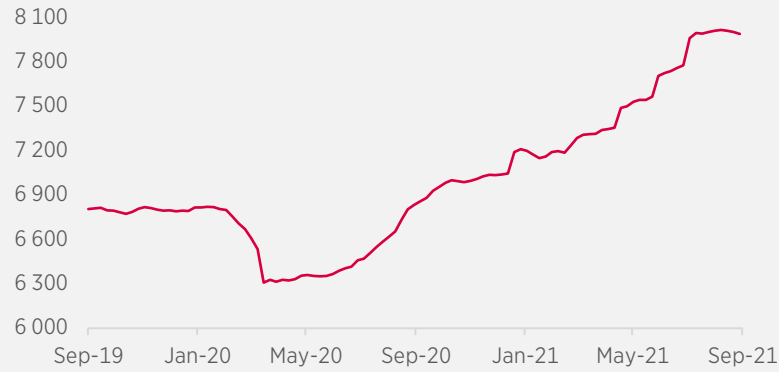
Fertilisers and Diamonds in Graphs

Figure 55: Composite rough diamond index



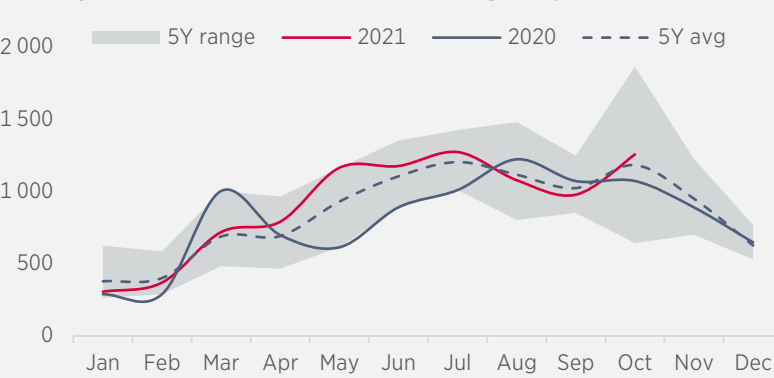
Source: Argus Media, ATON Research

Figure 56: Rapaport one carat price index, \$



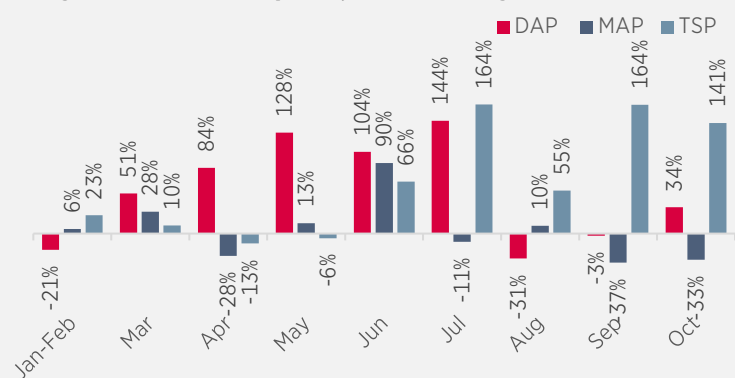
Source: Argus Media, ATON Research

Figure 57: China DAP/MAP/TSP exports, '000 mt



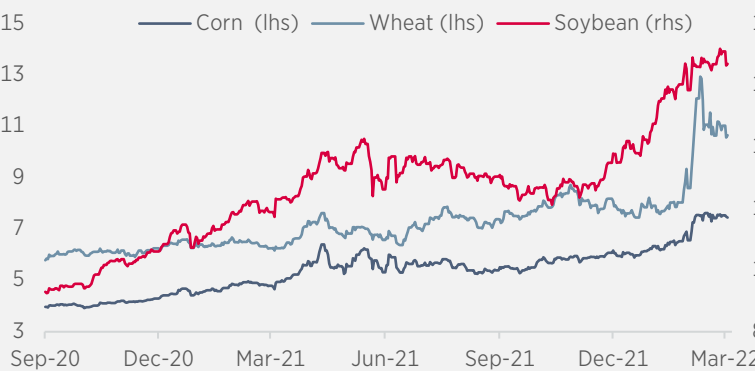
Source: Bloomberg, CEIC, ATON Research

Figure 58: China exports, YoY % change



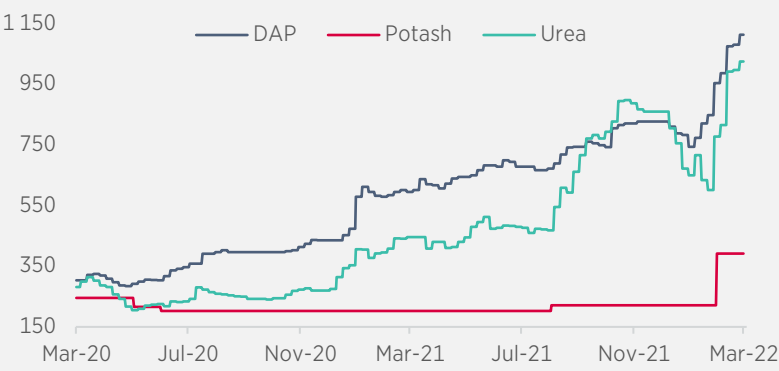
Source: Bloomberg, CNCIC, ATON Research

Figure 59: Corn, wheat and soybean prices, \$/Bu



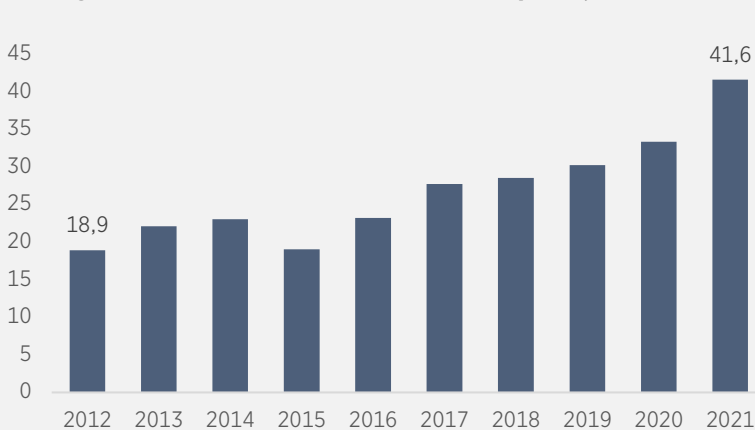
Source: Bloomberg, ATON Research

Figure 60: DAP, potash and urea Gulf Nola prices, \$/t



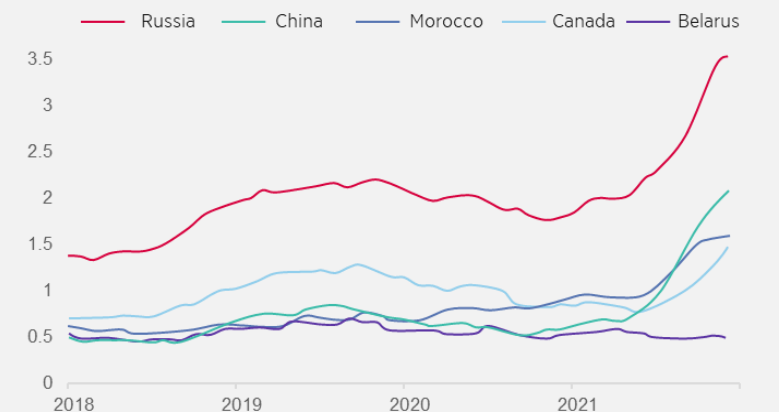
Source: Bloomberg, ATON Research

Figure 61: Total Brazilian fertiliser imports, mt



Source: Comexstat, ATON Research

Figure 62: Brazil's fertiliser imports by country, rolling 12M total, \$bn



Source: Trade Map, ATON Research

M&M Comparative Multiples

Figure 63: Russian M&M companies vs global peers

Company	EV/EBITDA		P/E		FCFY		DY	ND/EBITDA	ROE	ROA	EV/Sales		% change		
	22E	23E	22E	23E	22E	23E					22E	23E	22E	23E	3m
Base metals															
Nornickel	4.2	4.5	5.5	6.0	11%	9%	10%	0.7	115%	39%	2.5	2.6	-5%	-1%	-9%
RUSAL	2.4	2.3	2.4	2.6	21%	22%	3%	0.4	27%	16%	0.6	0.6	-5%	-2%	43%
En+ Group	2.7	2.9	2.1	2.2	49%	40%	8%	1.1	29%	9%	0.8	0.8	-21%	-16%	-12%
Global diversified miners	4.4	5.3	8.1	10.5	10%	8%	9%	0.1	37%	17%	2.6	2.9	34%	44%	24%
Copper/nickel producers	6.9	7.1	14.0	15.7	6%	7%	3%	0.4	24%	10%	3.6	3.7	31%	51%	39%
PGM producers	4.6	5.6	7.3	9.4	12%	10%	7%	-0.3	37%	25%	2.1	2.4	5%	31%	-17%
Aluminium	5.1	5.1	9.0	9.1	10%	11%	3%	0.2	22%	11%	1.0	0.9	16%	19%	65%
Steel producers															
MMK	1.8	2.1	3.1	3.7	39%	24%	38%	-0.1	30%	22%	0.5	0.6	-35%	-35%	-24%
Severstal	3.3	3.7	4.4	5.2	27%	22%	23%	0.4	58%	29%	1.3	1.4	-27%	-22%	-22%
NLMK	3.2	4.1	4.0	5.4	37%	25%	27%	0.5	42%	26%	1.1	1.2	-21%	-18%	-27%
Evraz	1.0	1.5	0.6	1.0	169%	65%	36%	0.3	80%	23%	0.3	0.3	-79%	-78%	-78%
Russia	2.3	2.9	3.0	3.8	68%	34%	31%	0.3	52%	25%	0.8	0.9	-40%	-38%	-38%
Australia	3.3	4.6	5.3	8.8	15%	14%	3%	-0.2	26%	17%	0.6	0.6	18%	39%	25%
North America	4.9	8.0	7.1	12.8	12%	6%	1%	0.5	28%	22%	1.0	1.1	34%	46%	46%
Europe	2.8	4.0	4.1	6.7	18%	16%	5%	0.0	17%	9%	0.5	0.6	5%	24%	23%
Japan	5.4	6.1	13.4	9.0	3%	5%	4%	2.4	11%	4%	0.7	0.7	0%	-4%	10%
China	5.7	6.2	8.3	9.1	7%	14%	12%	0.3	16%	7%	1.2	1.3	9%	-8%	21%
India	4.6	5.7	6.0	8.1	12%	10%	3%	1.0	31%	15%	1.3	1.3	17%	8%	40%
Gold producers															
Polymetal International	4.1	4.2	5.0	5.1	11%	12%	13%	0.8	36%	19%	2.3	2.3	-26%	-20%	-36%
Polyus Gold	6.3	7.3	8.9	10.6	7%	7%	6%	0.2	50%	22%	4.5	5.2	-4%	6%	-11%
CIS	4.5	4.7	6.7	6.4	15%	19%	6%	0.8	31%	16%	2.7	2.8	-23%	-18%	-33%
Gold majors	8.4	7.6	21.3	19.2	4%	5%	2%	0.2	11%	6%	4.2	3.9	n/a	n/a	n/a
Gold mid-caps	5.4	4.8	15.5	15.1	4%	8%	2%	0.0	9%	6%	2.4	2.3	16%	38%	5%
Diamond producers															
ALROSA	6.3	6.0	8.4	7.8	11%	12%	15%	0.3	47%	21%	3.0	2.9	-23%	-31%	-10%
Diamond producers	6.1	5.8	8.3	8.5	12%	12%	2%	0.1	9%	4%	2.9	2.8	40%	26%	24%
Gold majors	8.4	7.6	21.3	19.2	4%	5%	2%	0.2	11%	6%	4.2	3.9	n/a	n/a	n/a
PGM producers	4.6	5.6	7.3	9.4	12%	10%	7%	-0.3	37%	25%	2.1	2.4	5%	31%	-17%
Pipe producers															
TMK	4.9	5.6	3.3	4.5	56%	69%	13%	3.6	43%	3%	0.8	0.8	-6%	-30%	-15%
Major peers	7.7	7.3	13.8	12.2	5%	7%	1%	0.6	10%	7%	1.8	1.7	43%	56%	32%
Russian Steels (cons)	2.3	2.9	3.0	3.8	68%	34%	31%	0.3	52%	25%	0.8	0.9	-40%	-38%	-38%
Other peers	3.6	3.5	5.4	5.4	0%	1%	3%	-2.0	9%	0.1	0.4	0.3	7%	17%	14%
Fertilisers															
Phosagro	6.9	10.5	8.9	14.9	6%	6%	12%	0.6	52%	22%	3.1	4.2	26%	43%	78%
Acron	7.8	10.5	10.5	14.4	3%	1%	3%	0.5	0%	n/a	4.0	4.5	71%	195%	242%
Potash / phosphate	5.9	6.8	9.0	10.8	9%	9%	4%	0.2	31%	15%	2.3	2.4	52%	60%	117%
Nitrogen / NPK	6.1	8.1	8.6	12.0	12%	10%	6%	0.0	39%	20%	3.4	4.3	14%	19%	39%
Other peers	3.7	2.8	6.0	7.7	0%	0%	4%	0.0	13%	8%	0.9	1.1	18%	27%	64%

Source: Bloomberg, ATON Research

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The investment ratings may be determined by the following standard ranges:

Outperform (O)	Expected total return* is above 15%
Neutral (N)	Expected total return ranges from 0% to 15%
Underperform (U)	Expected total return is negative

* Expected total return for the purpose of the rating means upside potential from the current stock price to the target price (12M fair value per share) + 12M dividend yield.

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