

China Base Metal Briefing

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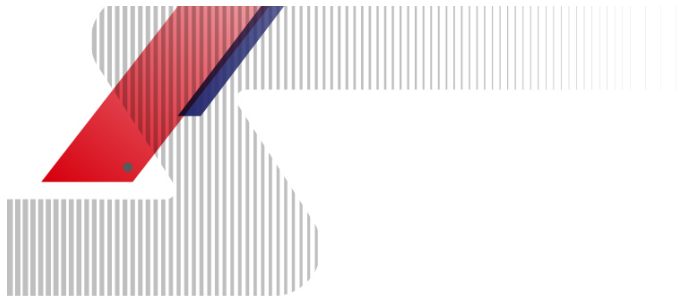
Base metals price forecast (May 23-27)

	LME 3-M (\$/mt)	Change	SHFE 3-M (yuan/mt)	Change	Spot premiums/discounts (yuan/mt)	Change
Copper	9000-9500	↓	70000-73000	↓	300~450	↑
Aluminium	2800~3100	↑	21000~21500	↑	(-80)~10	↓
Zinc	3450~3850	→	25000~26300	→	20~70	→
Lead	2065-2185	↑	14850-15200	↑	(-50) (50)	↑
Tin	33800~36000	↑	277000~292000	→	282000~294000 (spot prices)	→
Nickel	26500-28500	↓	200000-217000	↓	210000-225000 (spot prices)	↓

Source: SMM, LME, SHFE

Highlights

- The most-traded SHFE 2206 copper contract is expected to trade between 70,000-73,000 yuan/mt, and LME copper will trade between \$9,000-9,500/mt.
- The most-traded SHFE aluminium contract and LME aluminium are likely to climb to 20,000-21,500 yuan/mt and \$2,800-3,100/mt respectively this week.
- It is expected that the most traded SHFE lead contract will be 14,850-15,200 yuan/mt this week. LME lead is expected to move between \$2,065-2,185/mt this week.
- It is expected that SHFE zinc prices will move between 25,000-26,300 yuan/mt in the short term. LME zinc is expected to move between \$3,450-3850/mt this week.
- SHFE nickel prices are expected to fluctuate between 200,000-217,000 yuan/mt this week, and LME nickel prices are expected to move between \$26,500-28,500/mt.



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Overview

On May 18, US Fed Chairman Powell said he would stand for raising interest rates to the highest level needed to curb inflation. Chicago Fed President Evans also supported hawkish actions, suggesting that the interest rates would be raised by 50 basis points at the FOMC meeting in June, and reiterated the desire to approach neutral rates by the end of the year. Philadelphia Fed President also expects that the interest rates will be hiked by 50 basis points in June and another 50 basis points in July. From January to April, the investment in real estate development in China totalled 3.92 trillion yuan, a year-on-year decrease of 2.7%; the floor space of housing under construction was 8.19 billion square meters, flat year-on-year; the floor space of housing starts was 397.39 million square meters, a year-on-year decrease of 26.3%.

The most-traded SHFE 2206 aluminium contract rose last week due to improved pandemic in east China and continued drop in social inventory, with its weekly low and high at 20,150 yuan/mt and 20,930 yuan/mt respectively before closing at 20,820 yuan/mt on Friday afternoon, up 515 yuan/mt or 2.54% on the week. LME aluminium opened at \$2,824.5/mt last Monday, with its weekly low and high at \$2,802/mt and \$2,865/mt respectively before trading at \$2,946/mt as of CST 15 on Friday, up 4.3% on the week.

Therefore, the most-traded SHFE aluminium contract and LME aluminium are likely to climb to 20,000-21,500 yuan/mt and \$2,800-3,100/mt respectively this week.

The aluminium ingot social inventories across China's eight major markets totalled 965,000 mt as of May 19, down 38,000 mt from a week ago and 22,000 mt from the end of April. The domestic aluminium billet inventory stood at 136,400 mt as of May 19, a drop of 2,300 mt or 1.66% from a week ago.

The most-traded SHFE 2206 copper contract is expected to trade between 70,000-73,000 yuan/mt, and LME copper will trade between \$9,000-9,500/mt. Spot premiums are expected to move between 300-450 yuan/mt this week.

Copper inventories in the domestic bonded zone decreased by 12,300 mt to 309,700 mt from May 13 to May 20, according to the SMM survey. Inventory in the Shanghai bonded zone decreased 5,700 mt to 284,300 mt, and inventory in the Guangdong bonded zone dropped 6,600 mt to 30,400 mt.

SHFE zinc rose by 160 yuan/mt to 25,685 yuan/mt, up 0.63% on a weekly basis. As of 17:30 on May 20, LME zinc rose by 5.89% or \$208.5/mt to \$3,748/mt last week.

It is expected that SHFE zinc prices will move between 25,000-26,300 yuan/mt in the short term. LME zinc is expected to move between \$3,450-3850/mt this week.

As of May 20, the inventory of zinc ingots in Shanghai bonded zone stood at 13,800 mt, down 500 mt from May 13. Total zinc ingots inventories across seven markets in China stood at 265,800 mt as of Friday May 20, up 4,700 mt from May 16 and down 1,100 mt from May 13.

SHFE lead opened at 14,870 yuan/mt, and rose to a high of 15,090 yuan/mt at the beginning of last week, and then went downward to 14,680 yuan/mt, and finally rebounded and closed at 15,005 yuan/mt. Last Friday, the LME lead surged to a weekly high of \$2,145/mt, and tested \$2,150/mt.

It is expected that the most traded SHFE lead contract will be 14,850-15,200 yuan/mt this week. LME lead is expected to move between \$2,065-2,185/mt this week.

According to SMM, as of May 20, the total lead ingot inventory in the five major markets reached 99,300 mt, up 1,700 mt compared with the previous Friday (May 13), and down 9,300 mt from last Monday (May 16).

As of May 20, the inventory of primary lead stood at 5,000 mt in the major deliverable brand companies, a decline of 1,100 mt from the previous week (May 13), according to SMM. According to SMM survey, the in-plant inventory of finished products across domestic secondary lead smelters totalled 30,200 mt as of May 20, up 500 mt from the previous week.

SHFE nickel prices are expected to fluctuate between 200,000-217,000 yuan/mt this week, and LME nickel prices are expected to move between \$26,500-28,500/mt.

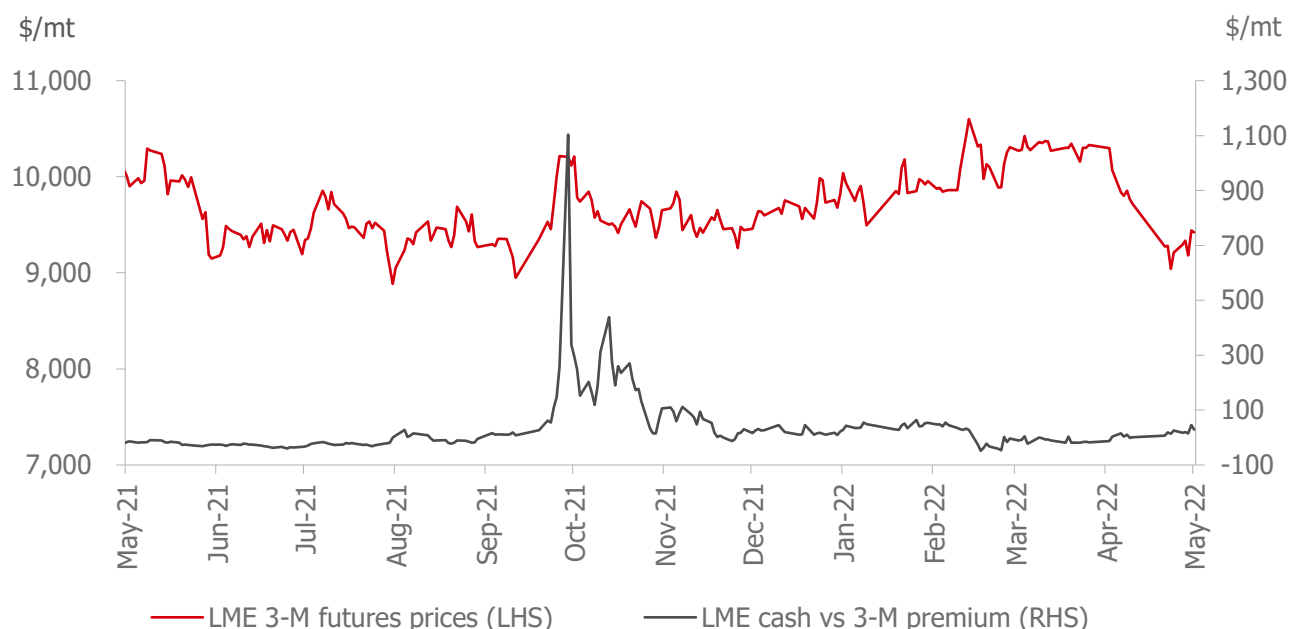
Nickel inventory in Shanghai bonded zone totalled 8,600 mt last week, a decrease of 200 mt from two weeks ago. The inventory of nickel briquettes and nickel plates was 2,900 mt and 5,700 mt respectively.

Last week, SMM pure nickel inventory across six regions of China stood at 7,013 mt, 739 mt lower than the previous week. The inventory of nickel briquette decreased by 400 mt to 1,950 mt. The inventory of nickel plate stood at 5,063 mt, down 339 mt from a week earlier.

As of May 20, nickel ore inventories across all Chinese ports fell by 7,000 wmt or 50 mt in Ni content from the previous week to 5.36 million wmt, with little change. Among them, nickel ore stocks across seven major Chinese ports increased by 23,000 wmt from a week ago to 2.231 million wmt.

Copper: Copper prices dropped last week amid the global economic recession

Figure 1: LME copper prices and premiums



Source: LME, SMM

Price review and forecast

Last week, the unsatisfactory US economic data dragged down the US dollar index from 105 at the beginning of last week to 102.65. The fall of the US dollar index supported base metals prices to bottom out. LME copper prices rose from \$9,358/mt to \$9,488/mt, but met resistance at the 20-day moving average and stood firmly at the 5-day moving average.

On the macro level, the US CPI and PPI in April were higher than expected, which, to a certain extent, drove the US Fed's attitude towards the tight monetary policy to be more hawkish, pushing up the US dollar index. The rapid narrowing of the US 10-year and 2-year Treasury bond yield spread also reflects the Fed's expectations of the monetary policy.

Moreover, due to the recent rapid rise in the yield of US bonds, the global financial market's valuation and revenue and the stock market fell sharply, which led to a general drop in commodities, a rapid decline in market risk appetite, and a significant correction in inflation expectations. In China, in April 2022, social financing increased by 910.2 billion yuan, 946.8 billion yuan less than the same period of the previous year. The large drop was contributed by the narrower increase in RMB loans of social finance which was 922.4 billion yuan less year-on-year. At the same time, the issuance scale of government bonds dropped significantly in April, so the support for social financing weakened. In April, the added value of industrial enterprises above the designated size decreased by 2.9% year-on-year (including 4.6% in the manufacturing industry and 31.8% in the automobile industry), and the total social retails dropped by 11.1% year-on-year, which was significantly lower than expected. On May 15, the People's Bank of China and China Banking and Insurance Regulatory Commission announced that the lower limit of the first home loan interest rate would be reduced to the corresponding term

LPR minus 20 basis points. Besides, last Friday, the central bank lowered the quoted interest rate of the 5-year loan by 15 basis points to 4.45%, slightly exceeding the market expectation.

The fundamentals in China have not changed much. On the supply side, the maintenance of smelters is concentrated in May. CICC and Fuye extend the maintenance period, while Southeast Copper, Daye Nonferrous, and Zijin Copper also start maintenance in May. Therefore, domestic output in May is likely to record an annual low. The arrival of imported copper has increased. If the import window continues to open, the bonded zone inventory and LME Asian inventory will be sufficient. Tight sources of copper scrap brought difficulty in purchasing raw materials for downstream scrap users. While bare bright copper prices remained firm, the loss of secondary copper rod producers reached more than 500 yuan/mt.

On the whole, the global market is worried about the US Fed's aggressive tightening policy and the economic recession. In China, due to the pandemic outbreaks, the market risk appetite was declining, and the market generally held a bearish outlook for copper prices. However, domestic policies still get room to exert power, so the copper futures are likely to rebound.

The most-traded SHFE 2206 copper contract is expected to trade between 70,000-73,000 yuan/mt, and LME copper will trade between \$9,000-9,500/mt.

In the spot market, this week, if the import window is still closed before the end of the long-term order in May, and the in-plant inventories of domestic smelters continue to drop due to their overhaul, the spot premiums will stay firm. Spot premiums are expected to move between 300-450 yuan/mt this week.

Figure 2: SHFE and China copper spot prices

Source: SHFE, SMM

Copper concentrate

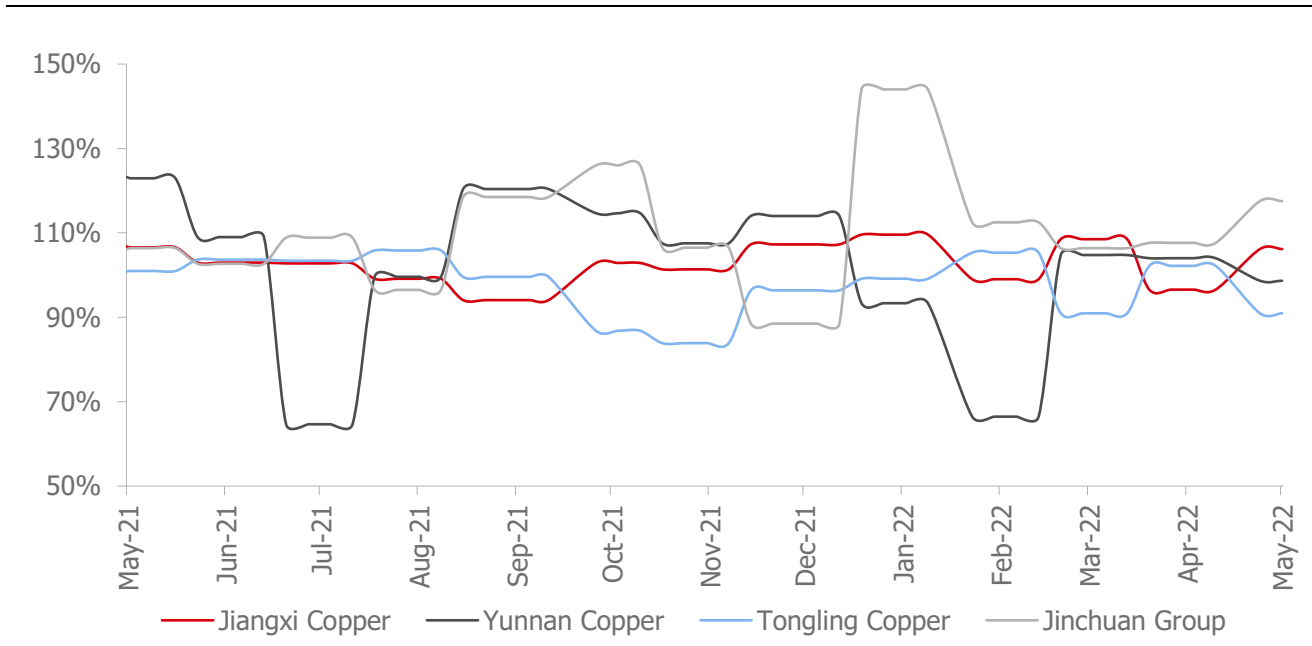
As of Friday May 20, the SMM Imported Copper Concentrate Index (weekly) stood at \$78.65/mt, \$0.72/mt lower than the previous week. Last week, the market saw limited transactions, but the inquiries focused on sources scheduled to be shipped in the third quarter. Quotes from the buyer and the seller varied. Smelters with a high in-plant inventory insisted on making the counter-offer at around \$80/mt. However, quotes of TCs offered by most of the traders stood at \$78/mt-\$79/mt because they are confident about the demand after some smelters resume their production from the centralised overhaul in China.

On the news front, a protest that was supported by the National Federation of Miners, Metal and Steel Workers of Peru (FNTMMSP) broke out at MMG's Las Bambas copper mine in Peru on May 19. The protest on May 19 was organised because 9,000 MMG workers' normal work was hindered by the former protest started by community members of Fuerabamba and Huancuire on April 20 to stop the mining operation of Las Bambas.

Overall, the supply and demand were balanced gradually after Xiangguang resumed the production. And the demand did not surprise market expectations. Spot copper concentrate TCs are unlikely to fall sharply as most of the smelters in China do not have purchasing demand in the third quarter. Due to the domestic overhaul and the stocking of a smelter in Shandong, the port inventory increased. The market shall keep an eye on the long-term order negotiations among Antofagasta, smelters in China and Japan, which may reflect the attitude of buyers and sellers regarding the market outlook to a certain extent. Last week, the pricing coefficient of domestic spot Cu 20% copper concentrate remained unchanged at 89-91% on a delivery-to-factory basis.

Refined copper supply

Figure 3: Capacity utilisation of China major copper smelters



Source: SMM

Table 1: Copper smelter maintenance schedules

Company	Capacity	Refining capacity	Start date	End date	Maintenance part	Note	Affected copper cathode output (E)
Zhongyuan Gold Smelter	350	400	Mid-Mar 2022	Mid-to-late May 2022	Smelting capacity	35 days	8
Zhejiang Heding Copper Co., Ltd.	150(old production line)	150(old production line)	23-Mar-22	06-May-22	Smelting capacity	30 days	10
Qinghai Copper Industry	100	100	Mar-22	Apr-22	Smelting capacity	18 days	2
Huludao Hongyue Northern Copper	100	150	28-Mar-22	May-22	Smelting capacity	38 days	3
Kunming Jinshui Copper Smelting Co.	100	0	Mar-22	Mar-22	Smelting capacity	25 days	0
Tongling Nonferrous Jinguang Copper Branch	600	650	Mid-May 2022	Jun-22	Smelting capacity	40 days	16

Chifeng Jinfeng Copper Industry Co., Ltd.	400	400	Apr-22	Jun-22	Smelting capacity	80 days	25
Daye Nonferrous Metals Group Holdings Co., Ltd.	300	600	Apr-22	Apr-22	Smelting capacity	15 days	2
China Copper Southeast Copper Co., Ltd.	400	400	Late May 2022	Jul-22	Smelting capacity	45 days	20
Shandong Humon Smelting Co. Ltd.	200	250	Mid-May 2022	Jun-22	Smelting capacity	25-30 days	4
Zijin Copper Co., Ltd.	250	400	May-22	May-22	Smelting capacity	10 days	4
Guangxi Nanguo Copper Industry Co., Ltd.	300	300	Jun-22	Jul-22	Smelting capacity	30 days	10
Jinchuan Group	350	500	Late Jun 2022	Jul-22	Smelting capacity	30 days	25
Baotou Huading Cuprum Industry Development Co., Ltd.	100	30	Aug-22	Aug-22	Smelting capacity	15 days	0
Zijin Copper Co., Ltd.	250	400	Sep-22	Sep-22	Smelting capacity	30 days	10
Jinlong Copper Co., Ltd.	320	450	Sep-22	Sep-22	Smelting capacity	5 days	0
Chifeng Jintong Copper Industry	300	200	Aug-22	Sep-22	Smelting capacity	25-30 days	8
SDIC Jincheng Metallurgy Co., Ltd	100	100	Aug-22	Sep-22	Smelting capacity	20-30 days	3
Heilongjiang Zijin Copper Co., Ltd.	150	150	Oct-22	Oct-22	Smelting capacity	30 days	7

Guangxi Jinchuan Nonferrous Metals Co., Ltd.	400	470	Oct-22	Nov-22	Smelting capacity	around 20 days	15
Tongling Jinguan (Ausmelt)	200	250	Sep-22	Oct-22	Smelting capacity	30 days	8

Source: SMM

Table 2: Copper capacity expansion in 2022 (10,000 mt)

Company	New Blister Copper Capacity	New Copper Cathode Capacity	Raw Material	Commissioning
Tongling Nonferrous Metal (Aolu)	0	15	Copper concentrate	Jun-20
Lanxi Zili Environmental Protection Technology	0	10	Copper scrap, blister copper	Sep-20
Chifeng Jinjian Copper Industry Co., Ltd.	20	10	Copper concentrate	Oct-20
Total	20	35		
Zijin Copper Co., Ltd.	0	10	Copper concentrate	Q1 2021
Jiangxi Copper Hongyuan Copper Co., Ltd	0	10	Copper anode	Jan-21
Jiangxi Huiying Environmental Protection Tech Co., Ltd.	0	12	Copper scrap, Copper anode	Dec-21
Total	0	32		
Daye Non-Ferrous Metals (Yangxin Hongsheng)	40	40	Copper concentrate	Q3 2022
Tongling Nonferrous Metals Group (Jinguan Copper Co., Ltd.)	8	8	Copper concentrate	Q3 2022
Zhejiang Jiangtong Fuye Heding Copper Industry	0	10	Copper anode	Q3 2022
Jinchuan Group (Jinchang)	0	10	Copper anode	Q4 2022
Zhongtiaoshan Non-ferrous Metals Group Co., Ltd.	18	18	Copper concentrate	Q4 2022
Total	66	86		
Tongling Nonferrous Metal (Aolu)	0	15	Copper concentrate	Jun-20
Lanxi Zili Environmental Protection Technology	0	10	Copper scrap, blister copper	Sep-20
Chifeng Jinjian Copper Industry Co., Ltd.	20	10	Copper concentrate	Oct-20
Total	20	35		

Source: SMM

Copper scrap

Last week, copper prices stopped falling and rebounded. Copper scrap traders shipped goods one after another, which was conducive to the expansion of the price spread between the copper cathode and copper scrap. However, the balance between the supply and demand of copper scrap did not improve significantly. Besides, the high traded prices of copper scrap kept the price spread between the copper cathode and copper scrap at a low level. If copper prices fall, the price spread between the copper cathode and copper scrap may continue to narrow or remain at a low level, which is relatively favourable for copper cathode consumption.

According to customs statistics, in April, the imports of copper scrap and brass scrap were 135,300 mt, a decrease of 97,400 mt MoM and down 19.33% YoY. The imports of copper ingots totalled 49,400 mt, a decrease of 3% from the previous month but an increase of 13% YoY. The decrease in imports in April was caused by the higher prices of copper scrap and brass scrap previously. In the second half of April, the imports of copper scrap turned profitable, boosting the traders' import willingness. Therefore, the imports in May are likely to rise to 140,000-150,000 mt.

Prices of #1 bare bright copper without Fapiao (Chinese invoices) averaged 66,300 yuan/mt last week, down 40 yuan/mt from the previous week. The average spread between the copper cathode and copper scrap stood at 497 yuan/mt, which widened by 51 yuan/mt from the previous week. For copper scrap, CIF quotes for #1 copper scrap were Comex September copper less \$0.10-0.12/lb, and offers for birch/cliff were Comex September copper less \$0.25-0.26/lb. US brass was quoted at \$6,250-6,350/mt. The coefficient for #2 copper granules against LME copper stood at 96.25-96.5% on a CIF basis, and the coefficient for bare bright copper against LME copper stood at 98.5-99%, on a CIF basis.

Refined copper imports

Yangshan copper premiums stood at \$62-88/mt under warrants from May 16 to May 20, and between \$48-83/mt under the bill of lading (B/L), with the quotation period in June. The quotation refers to the prices of goods arriving at ports in late May and the first half of June. As of May 20, The SHFE/LME copper price ratio stood at 7.63.

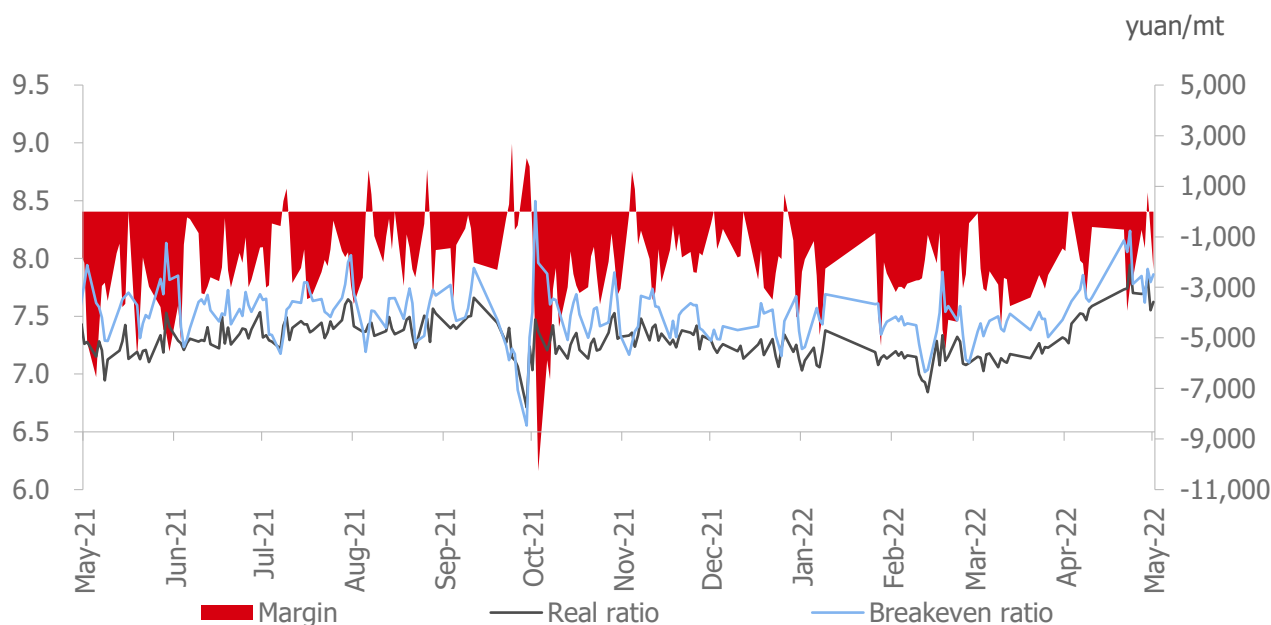
Last week, the price ratio dropped from 7.89 to 7.63. The import window once opened, and the import profits remained at -600 - 600 yuan/mt over the 2206 contract. In terms of import trading, the problem of cargo congestion was solved according to SMM research. At present, goods can be picked up at the C. Steinweg warehouse. Last week, importers who have locked in the price ratio previously declared for import and were waiting to ship the goods out of the warehouses, which takes about 7 to 10 days. In terms of switching bills, the documents that stranded in express delivery companies started to circulate as shipping companies and agencies resumed work. In terms of quotes, the improved price ratio and the normalisation of transportation, switching bills, etc. pushed up the trading in the market. As for warrants, according to the SMM survey, LME copper was still in the backwardation structure last week. The warrants traders held a strong willingness to ship under the pressure of capital, and the increase in premiums was less than that under the bill of lading. On the bill of lading front, with the improvement of logistics in Shanghai, the efficiency of switching bills rose, attracting inquiries. Last Friday, import premiums were quoted at \$69-85/mt under warrants, with the average price standing at \$77/mt, \$3.5/mt higher than the previous Friday. Quotes under B/L stood at \$60-80/mt. The average price was \$70/mt, \$8.5/mt higher than the previous Friday. In the future, the output of copper cathode in China in May will hit an annual low, so the social inventory may remain low. Besides, the proportion of cancelled warrants of LME copper increased, and the price ratio is expected to be relatively stable. The market

attention shall be paid to the increment of imported copper through domestic customs declaration in the early stage.

Last Friday, the high-quality pyro-copper premiums were around \$85/mt under warrants, and mainstream pyro-copper and hydro-copper were quoted at \$78/mt and \$69/mt respectively. The high-quality copper under the bill of lading was quoted at \$80/mt, and that of mainstream pyro-copper and hydro-copper were \$75/mt and \$60/mt respectively.

Copper inventories in the domestic bonded zone decreased by 12,300 mt to 309,700 mt from May 13 to May 20, according to the SMM survey. Inventory in the Shanghai bonded zone decreased 5,700 mt to 284,300 mt, and inventory in the Guangdong bonded zone dropped 6,600 mt to 30,400 mt. Importers, who have locked in the prices when the import was profitable, continued to ship the goods in bonded zones to China market last week, causing the inventory of bonded zones in Shanghai and Guangdong to decline. In addition, it is known that there are still many traders who are waiting to pick up goods in bonded warehouses in Shanghai, so the inventory is expected to drop further.

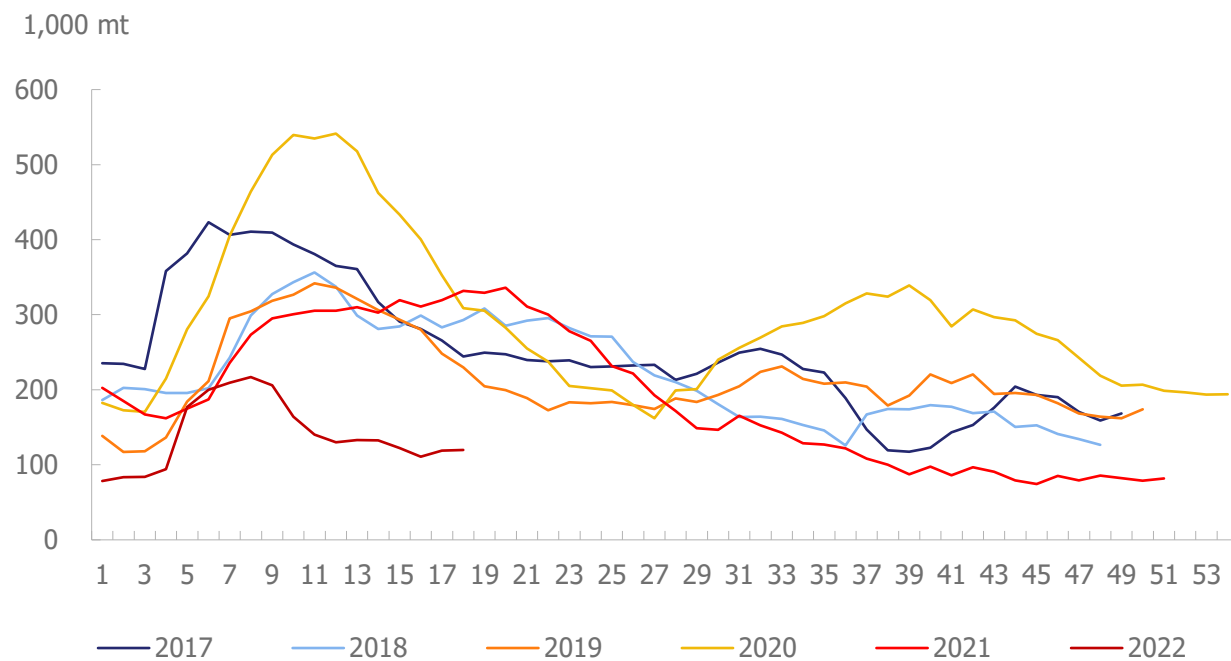
Figure 4: China copper import arbitrage ratio



Source: SMM, LME

Inventory

Figure 5: Domestic Copper inventories (Shanghai, Guangdong, Jiangsu)



Source: SMM

Aluminium: SHFE aluminium to move up amid continued decline in social inventory

The most-traded SHFE 2206 aluminium contract rose last week due to improved pandemic in east China and continued drop in social inventory, with its weekly low and high at 20,150 yuan/mt and 20,930 yuan/mt respectively before closing at 20,820 yuan/mt on Friday afternoon, up 515 yuan/mt or 2.54% on the week. LME aluminium opened at \$2,824.5/mt last Monday, with its weekly low and high at \$2,802/mt and \$2,865/mt respectively before trading at \$2,946/mt as of CST 15 on Friday, up 4.3% on the week.

Macro front: On May 18, US Fed Chairman Powell said he would stand for raising interest rates to the highest level needed to curb inflation. Chicago Fed President Evans also supported hawkish actions, suggesting that the interest rates would be raised by 50 basis points at the FOMC meeting in June, and reiterated the desire to approach neutral rates by the end of the year. Philadelphia Fed President also expects that the interest rates will be hiked by 50 basis points in June and another 50 basis points in July. From January to April, the investment in real estate development in China totalled 3.92 trillion yuan, a year-on-year decrease of 2.7%; the floor space of housing under construction was 8.19 billion square meters, flat year-on-year; the floor space of housing starts was 397.39 million square meters, a year-on-year decrease of 26.3%.

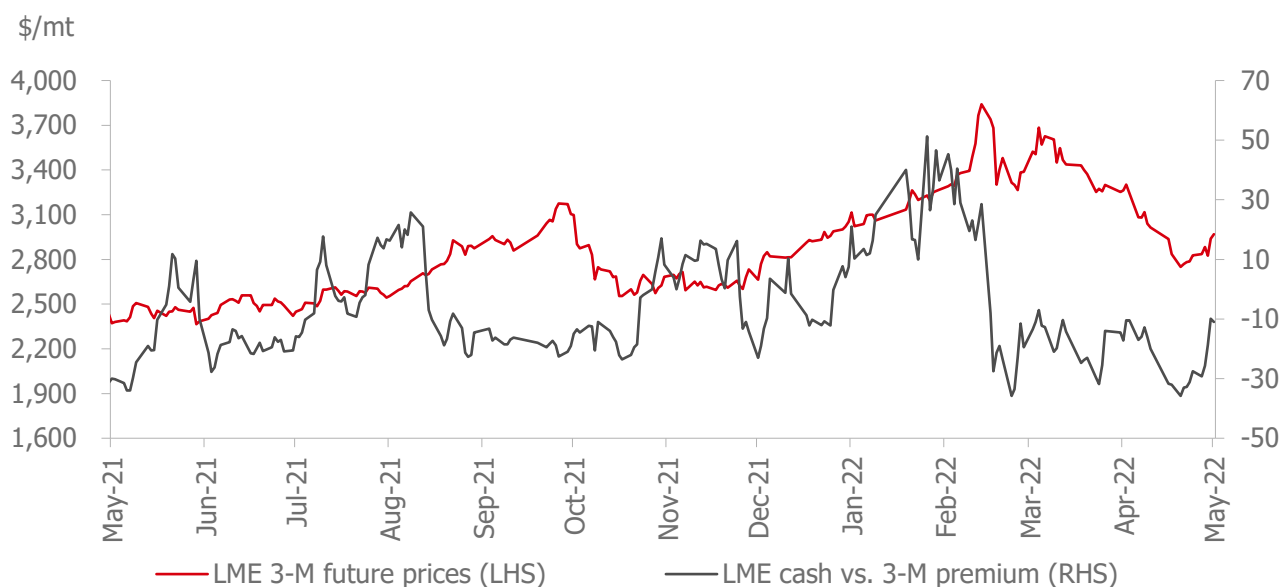
Fundamentals: Most aluminium smelters maintained stable operation last week. A smelter in Yunnan shut down approximately 200,000 mt of capacity on May 6 in the wake of an accident. With the restarts of closed capacity, the domestic aluminium output maintained year-on-year growth. Some traders in Zhejiang, Hebei and other regions reported the inflows of Rusal aluminium ingots into the spot market. Some downstream companies confirmed that they have received Rusal aluminium ingots. According to customs data, China's aluminium ingot imports from Russia jumped 48% YoY to 31,200 mt in April. It is expected that Rusal aluminium ingots will continue to enter the Chinese market in the future. The operating rates of aluminium downstream enterprises picked up slightly, mainly driven by those in Shanghai's neighbouring areas. Active downstream restocking in Wuxi and Gongyi allowed the aluminium ingot social inventory to extend the downward trend. Some buyers in Gongyi turned to primary aluminium as a substitute due to aluminium scrap shortages in Chang'ge City, Henan Province, also contributing to the destocking process.

The CRB commodity index rose 1.68% on a weekly basis as of last Thursday, while the SMMI index dropped 0.01%. Rising prices of gold, crude oil and soybean allowed the CRB to return to above the 5-day moving average. The difference between the 20-day average of spot aluminium buying and selling strength index bottomed out last week, climbing from 24 points on Tuesday to 31 points on Thursday, in line with the price trend of SMM A00 aluminium. The difference between buying and selling strength index showed a positive correlation with spot prices when prices were going up, and vice versa. In terms of machine learning, the random forest & time series model predicts that the price range of the most-traded SHFE aluminium contract will be [19955, 21550] this week, and the extreme price range will be [19890, 21750]. The LSTM & time series model predicts that the range of SMM A00 aluminium average price will be [20210, 21430] this week, and the extreme range will be [20100, 21650].

The futures technical indicators suggest that the most-traded SHFE aluminium contract may go up this week. Based on the 4-hour K-line, SMM observed a total of 40 technical indicators, of which 17 were neutral, 17 were bullish, and 6 were bearish. Moving average indicators sent bullish signals. The BOLL indicator and the WR indicator suggest that the prices are in oversold territory. The prices may meet resistance in the range of [21400, 21700] and find support in the range of [19800, 20200].

In the short term, domestic consumption recovery and decline in social inventories will shore up aluminium prices. In addition, potential bauxite export ban by Indonesia has aggravated market concerns about higher alumina and aluminium costs in the future. Therefore, the most-traded SHFE aluminium contract and LME aluminium are likely to climb to 20,000-21,500 yuan/mt and \$2,800-3,100/mt respectively this week. SMM will keep a close eye on the domestic aluminium consumption and inventory changes.

Figure 6: LME aluminium prices and premium



Source: LME, SMM

Figure 7: SHFE and China aluminium spot prices



Source: SHFE, SMM

Alumina

As of last Friday, the SMM weighted alumina index stood at 3,007 yuan/mt, down 7 yuan/mt or from a week ago. The prices inched lower in Shanxi and Henan, but remained stable in south-west China. The prices stood between 2,950-3,060 yuan/mt in Shandong, 3,020-3,120 yuan/mt in Henan, 2,930-2,960 yuan/mt in Shanxi, 2,960-3,040 yuan/mt in Guangxi, 3,000-3,050 yuan/mt in Guizhou, and 3,150-3,200 yuan/mt in Bayuquan.

Alumina prices FOB Western Australia fell to \$362/mt as of last Friday, which was equivalent to 3,298 yuan/mt CIF China and 291 yuan/mt higher than the domestic spot prices. The ocean freight was \$60/mt. The import window remained closed.

China's alumina exports in April reached 167,700 mt, an increase of 1190% month-on-month and 1828% year-on-year, the highest since January 2019. Some market players predict that the exports will remain above 100,000 mt in May, and range between 60,000-100,000 mt per month in H2. If the strong export trend is maintained, the domestic surplus can be alleviated to a certain extent and the price decline will slow down.

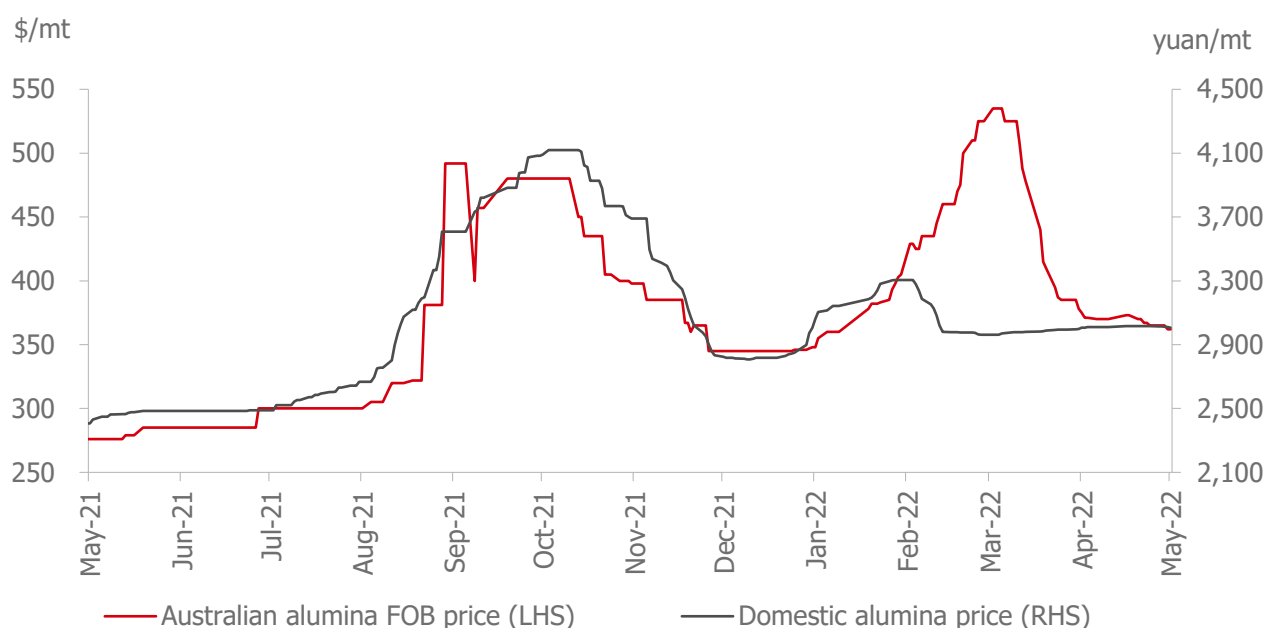
Previously, alumina in Shanxi was piling up at refineries, social warehouses and railway stations as the pandemic hindered shipments. However, supply in north China began to increase after the transportation recovered, prompting some sellers to lower their offers so as to increase their cash flows, sending the prices in Shanxi down by 15 yuan/mt. As the supply of bauxite in Guizhou was still tight, some local refineries have begun to seek imported bauxite from ports or purchase domestic bauxite from other provinces, increasing their costs by nearly 100-200 yuan/mt. The alumina market in Guangxi maintained a tight balance amid stable production and growing demand from Yunnan, offering strong support to local alumina prices.

Wait-and-see sentiment emerged when alumina prices fell, but the price decline may slow down in the short term as exports in April exceeded expectations. In the long run, the supply surplus will continue to put pressure on market prices. SMM will keep a close eye on whether the high-cost alumina refineries Shanxi and Henan will be forced to reduce their production due to losses.

Table 3: Alumina prices

	May 13	May 20	+/-
Western Australia (fob, \$/mt)	365	362	-3
At port (self pickup, yuan/mt)	3,100-3,200	3,100-3,200	0
Domestic goods (yuan/mt)	2,950-3,130	2,930-3,120	-15

Source: SMM

Figure 8: Prices of domestic and imported alumina

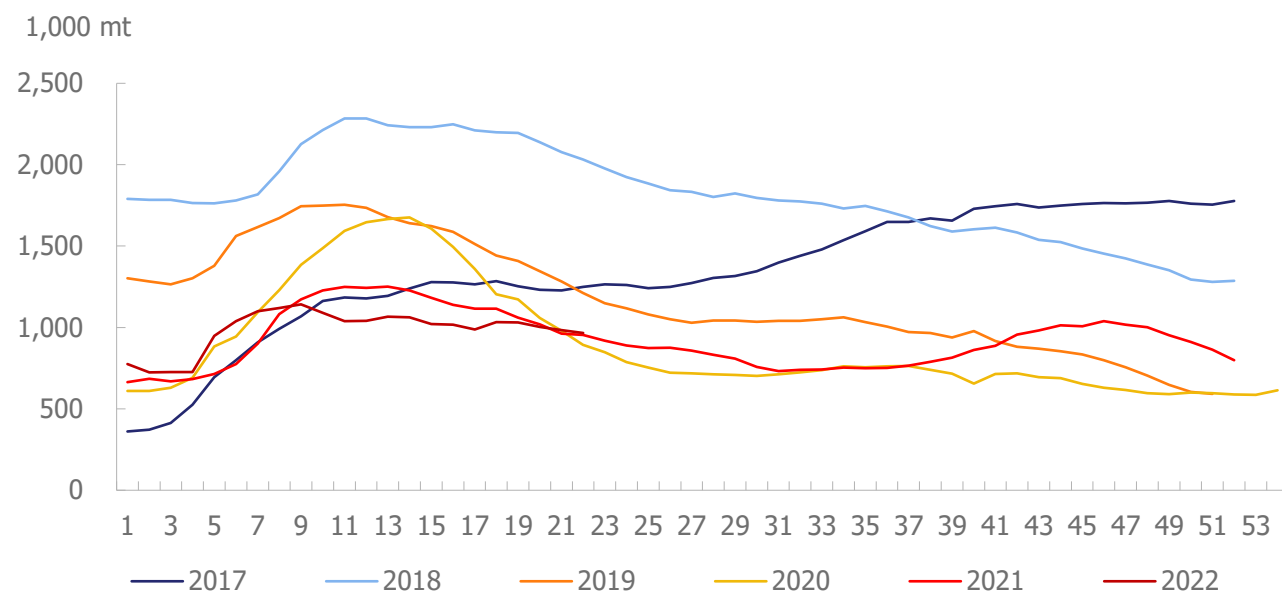
Source: SMM

Aluminium supply

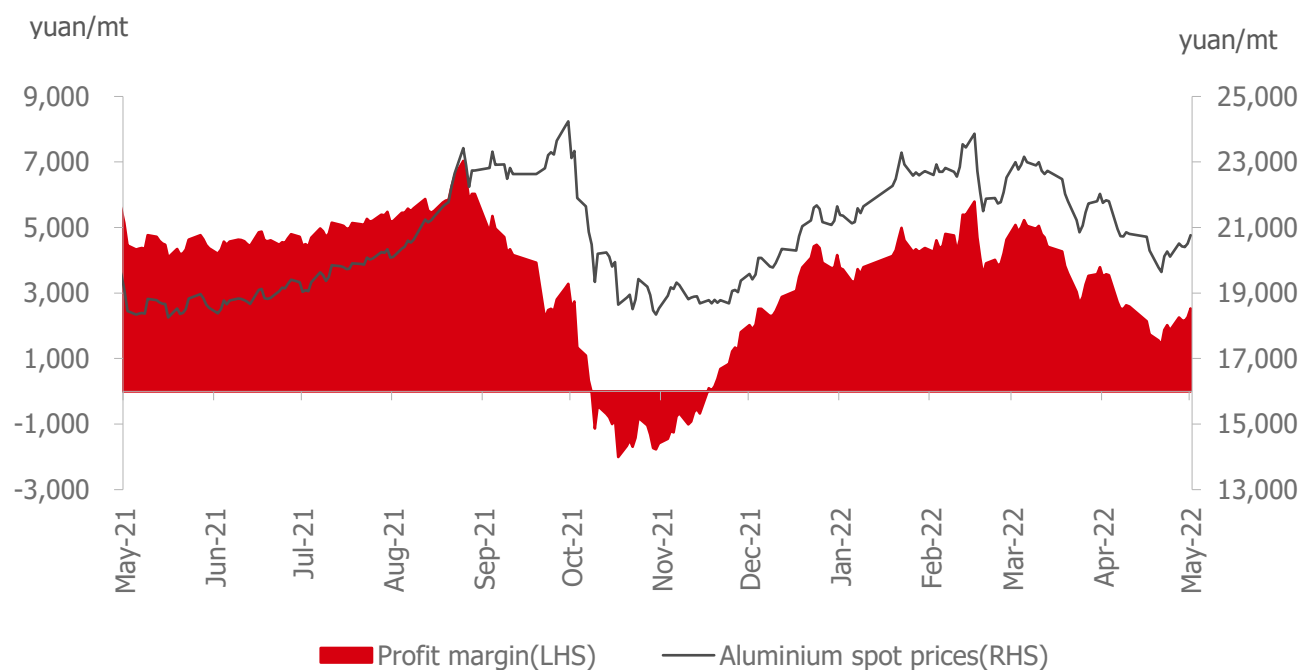
The aluminium ingot social inventories across China's eight major markets totalled 965,000 mt as of May 19, down 38,000 mt from a week ago and 22,000 mt from the end of April. Low arrivals were the main reason for the decline, which was still led by Wuxi and Gongyi. The inventory in Wuxi fell 30,000 mt due to a sharp drop in arrivals and normal cargo pick-up. With fewer cargoes arriving, the inventory in Gongyi also dropped. Sellers in Gongyi held back their cargoes, even as the local spot premiums rose. The inventory in Foshan rose slightly amid normal arrivals and modest shipments out of warehouses. Inventories in Hangzhou, Shanghai, Chongqing and other regions were basically flat. Considering the low arrivals in Henan and Wuxi, it is expected that the total inventory will continue to fall this week.

Cost

The average cost of aluminium smelters slid 3 yuan/mt from a week ago to 18,239 yuan/mt as of last Friday due to a slight drop in alumina prices in Henan and Shanxi. The SMM spot aluminium prices rebounded slightly to 20,770 yuan/mt, expanding smelters' profits by 667 yuan/mt to 2,531 yuan/mt. On the one hand, power costs declined thanks to the rainy season in Yunnan. On the other hand, as the power consumption peak in east and south China is about to come, energy prices such as coal could potentially rise. The prices of other raw materials and auxiliary materials are expected to be little changed. In this context, aluminium costs are likely to increase in the short term.

Figure 9: Domestic aluminium inventories

Source: SMM

Figure 10: Aluminium smelters' profit margins in China

Source: SMM

Zinc: SHFE and LME zinc bottoming out, SHFE/LME zinc price ratio remained high

For LME zinc, the prices extended the movement two weeks ago at the beginning of last week, with shorts reducing positions and prices moved above 5-day moving average. Monthly rate of the US retail sales in April actually stood at 0.90%, with an expectation of 0.8%, a new high since January this year, raising the possibility of a greater US interest rate hike. Spot gold prices fell slightly by \$2/ounce, which affected the non-ferrous sector. The market prices fluctuated narrowly, with the contract moving around \$3,630/mt. As the pessimistic sentiment cooled down, prices were pulled up after bears left the market in the second half of last week amid technical support and stabilised at around \$3,730/mt. LME inventory increased by 75 mt to 86,625 mt. Domestic inventory rebounded last week as the zinc ingots were delivered to the warehouses for export, and then continued to fall in the second half of last week. The market bearishness outperformed the fundamental support. As of 17:30 on May 20, LME zinc rose by 5.89% or \$208.5/mt to \$3,748/mt last week.

For SHFE zinc, the People's Bank of China announced a cut in the interest rate for first home loans to 4.6% at the beginning of last week. And the falling prices of zinc ingots encouraged downstream consumption, with inventories across seven major markets falling to 261,100 mt, which boosted market confidence to some extent. And the futures prices rose slightly. In general, although the policy will support the consumption in the long run, the resurgence of pandemic in Beijing and Tianjin impeded further recovery of consumption. Though the futures prices rose above 26,130 yuan/mt once, the prices fell amid the weak consumption and strong resistance. The five-year LPR was further lowered to 4.45%. Futures prices rose slightly with shorts withdrawing from the market approaching the weekend. Open interest of the June contract reduced as the most-traded contract will be changed to SHFE 2207 soon. SHFE zinc rose by 160 yuan/mt to 25,685 yuan/mt, up 0.63% on a weekly basis.

Shanghai: Spot premiums in Shanghai rose and then fell last week. Spot premiums stood at 50-70 yuan/mt for regular brands over the June contract as of May 20, with premiums of 110-120 yuan/mt for Shuangyan zinc. In the first half of last week, due to the relaxation of pandemic prevention and control measures in Shanghai, pick-ups gradually resumed at warehouses and market purchases also improved, slowly driving up the spot premiums. In the second half of last week, as the downstream finished restocking and the zinc ingot which was planned to be exported returned to the spot market, the pressure on market shipments enhanced, resulting in a drop in the spot premiums. The market needs to observe whether arrivals will increase in Shanghai this week, and the spot premiums are expected to move rangebound with downward potential.

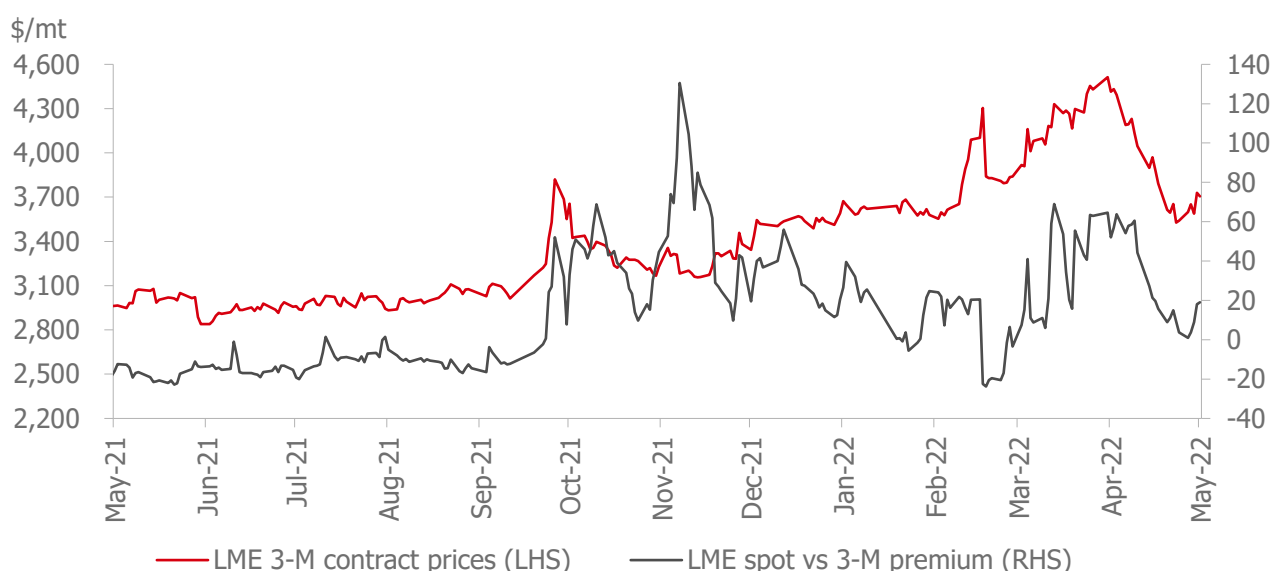
Guangdong: Spot prices of #0 zinc stood at premiums of 55 yuan/mt over the July contract, and at discounts of 70 yuan/mt against Shanghai prices. Arrivals were rather stable in Guangdong market last week, with the downstream less interest in sourcing supplies in the market amid low demand. Goods holders were active in selling cargoes with abundant supplies, especially after starting to quote against the July contract that greatly pulled up the spot premiums. Most of the goods holders were active in selling zinc ingots purchased with a discount against the June contract. However, in the case of modest downstream orders and poor consumption, the market was muted and spot premiums moved in a downward trend. Premiums are expected to move rangebound with downward potential this week.

Tianjin: The spot premiums in Tianjin market continued to decline last week. As of Friday May 20, spot premiums stood at 20-80 yuan/mt for regular brands over the June contract, 10 yuan/mt against Shanghai, 40-130 yuan/mt for high-priced Zijin zinc over SHFE 2206 zinc contract. KZ was out of stock (free from ex-warehouse). Although zinc prices moved rangebound last week, the spot available in the market increased with a large number of warrants flowing out of the warehouses after the export window closed. As the transport improved

and arrivals at smelters increased, traders continued to lower the spot premiums. As downstream consumers were bearish about zinc prices and they have purchased a lot two weeks ago, they purchased only on rigid demand last week. In addition, as the pandemic worsened in Tianjin, some warehouses posted stricter restrictions on picking up goods while the trucks leaving Tianjin found it difficult to enter surrounding provinces. With shipments being affected, the market transactions were thin. The spot premiums in Tianjin are expected to decline this week.

Ningbo: Mainstream brands stood at premiums of 200 yuan/mt over the June contract as of May 20, with premiums of 130 yuan/mt over Shanghai. Arrivals in Ningbo market rose last week. The holders were at odds over prices amid sufficient sources available in the market. Some traders who focused on selling cargoes quoted at 200 yuan/mt over the June contract last week, while other traders still held firm to the prices at the beginning of last week and quoted around 320 yuan/mt. But in the case of weakening transactions and increasing arrivals, traders who stood firm to the prices before made concessions on the last trading day. Spot premiums stood at 200 yuan/mt with modest transactions. Premiums are expected to drop amid poor consumption this week.

Figure 11: LME zinc prices and premium



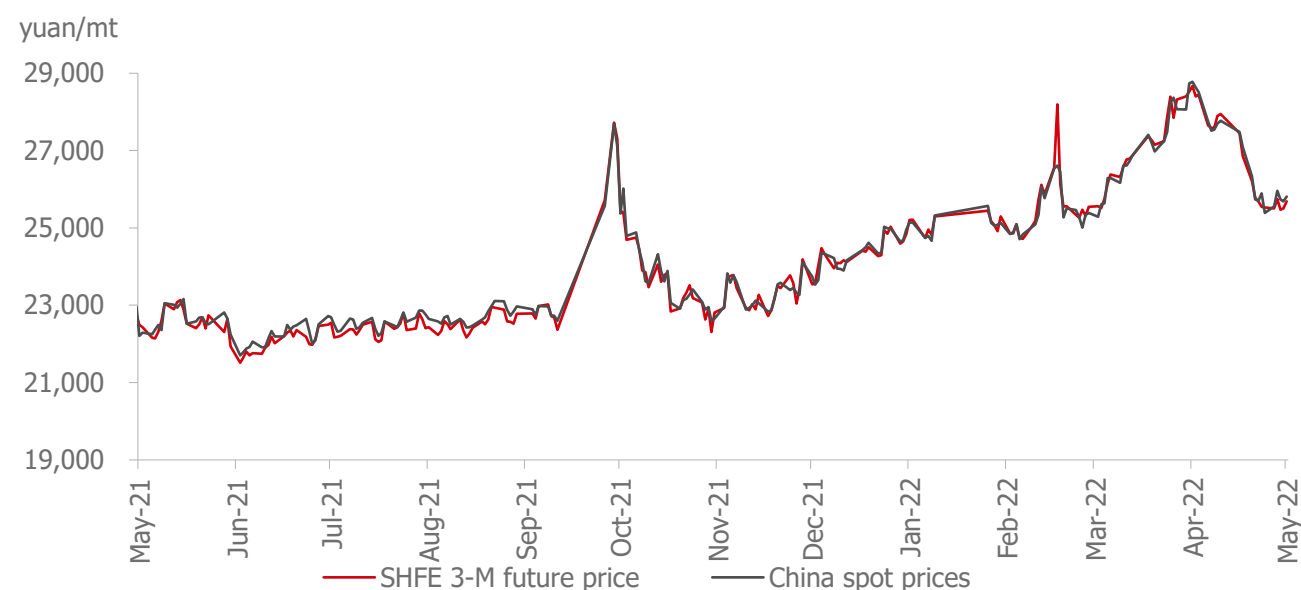
Source: LME, SMM

Forecast

The market shall watch the initial value of the manufacturing PMI in the eurozone in May, the annualised sales of US new homes in April, the initial value of Markit manufacturing PMI in the United States in May, the US monthly rate of durable goods orders in April, the annual rate of US core PCE price index in April. In terms of events, the European Central Bank President Lagarde will make a speech on May 25; the Fed's FOMC will announce the minutes of the May monetary policy meeting on May 26.

For LME zinc, the bearish factors on the macro front paid off and the pessimistic sentiment in the overseas market has finally calmed down. Zinc prices rebounded last week. This week, the market shall pay attention to the annual rate of US core PCE price index, and if it continues to rise, it may trigger the market's concern about inflation, which may bring more aggressive Fed's interest rate hike. In addition, the market shall watch the US PMI data and monthly rate of durable goods orders, in order to observe the overseas consumption. In terms of the fundamentals, supply issues remained unchanged in the overseas market with electricity prices in Europe (France, Netherlands, Belgium) still moving around €200/Mwh. The fall in zinc prices will undoubtedly increase the difficulty of smelters to resume the production. The market shall watch whether overseas market will make up for the losses through the upward movement of TCs in the future. In addition, the market focus has shifted to the marginal weakening of consumption and pessimistic expectations in the future. LME inventory increased 75 mt and reversed the reduction in inventory two weeks ago. Short-frequency data reflected the marginal weakening of consumption overseas. If the inventory continues to increase, it may intensify the pessimistic sentiment in the market. In general, fundamentals of overseas zinc were weaker than before. LME zinc is expected to move between \$3,450-3850/mt this week.

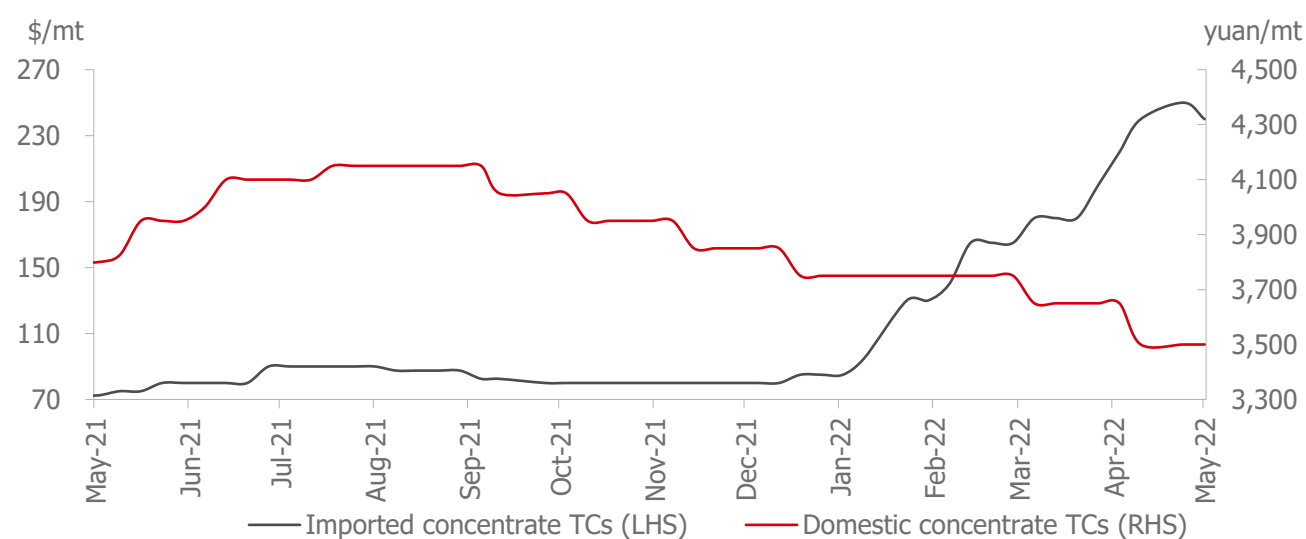
For SHFE zinc, the shortage still exists on the supply side, and the fall in TCs of imported zinc concentrate indicated that the rise in TCs before was solely the result of the SHFE/LME price ratio. After the import window opened, smelters were active in inquiries and traders lowered the selling prices, which may lead to sufficient supply on the mine end in the second half of this year and support the monthly output of refined zinc at 540,000-550,000 mt. And the supply may rise in the long run. On the consumption side, bullish policy and news have been heard in the market last week, which boosted the market sentiment in the short term. But the market still need to think about two points: Firstly, it is import to confirm whether the policy will be launched and whether it will drive up the consumption. Secondly, the market shall focus on the resurgence of the pandemic. As the pandemic in Beijing, Tianjin and Sichuan worsened, the pandemic will continue to be a short-term interference factor. Inventory of zinc ingot fell after the downstream restocked at low prices, but the inventory rose again last week, which indicated that the actual downstream consumption of zinc did not really improve. In general, both supply and demand will remain weak and prices will fluctuate. It is expected that zinc prices will move between 25,000-26,300 yuan/mt in the short term.

Figure 12: SHFE and China Zinc Spot Prices

Source: SHFE, SMM

Treatment charges

According to SMM research, with the rebound of SHFE/LME price ratio, the losses of imported zinc ore narrowed and some smelters actively made inquiries. But with low spot supply in the market, some smelters lowered the transaction prices of imported standard ore to \$230-240 yuan/dmt, and some traders reduced the market quotations to \$200/dmt. In terms of domestic ores, as zinc prices continued to fall in May which resulted in lower TCs, some smelters tried to keep TCs of zinc concentrate unchanged on the month in preliminary negotiations for June. But domestic mines and traders mainly remained wait-and-see. SMM expects that TCs of zinc concentrate in June may fall slightly or remain flat on the month.

Figure 13: Zinc concentrate TCs

Source: SMM

Table 4: Zinc concentrate TCs Apr-May 2022

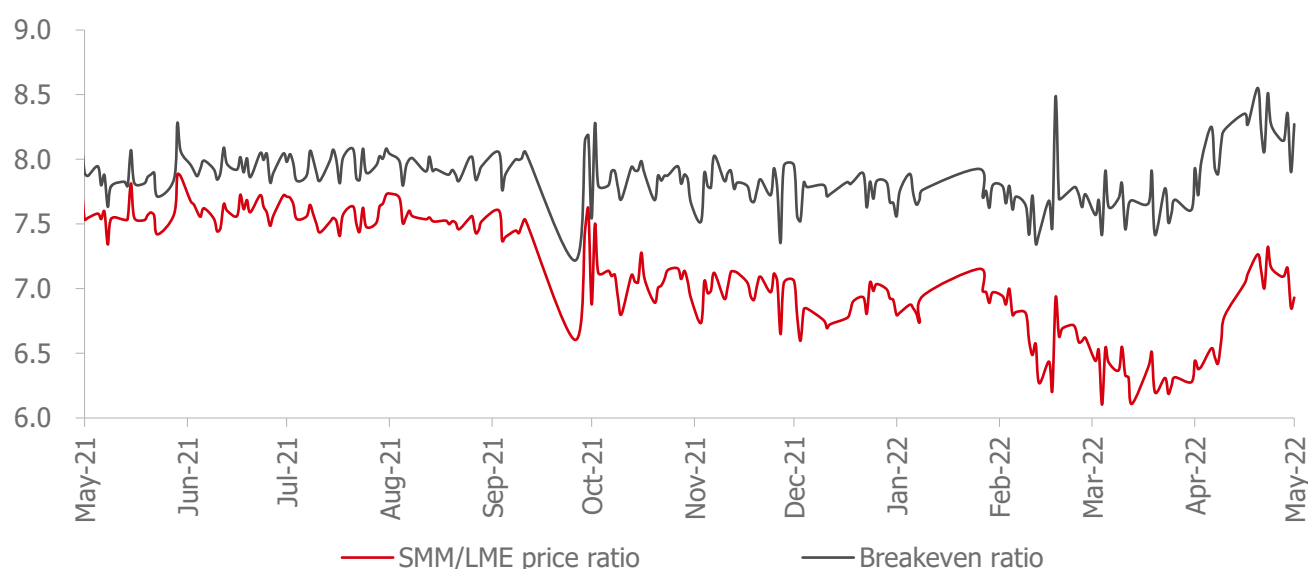
	Apr 2022	May 2022	Monthly change
Imported (\$/dmt)	160-200	220-260	+60
Domestic (yuan/mt in Zn content)	3600-3900	3500-3800	-100

Source: SMM

Note: 50-55% zinc content in both the imported and the domestic concentrate.

Refined zinc imports

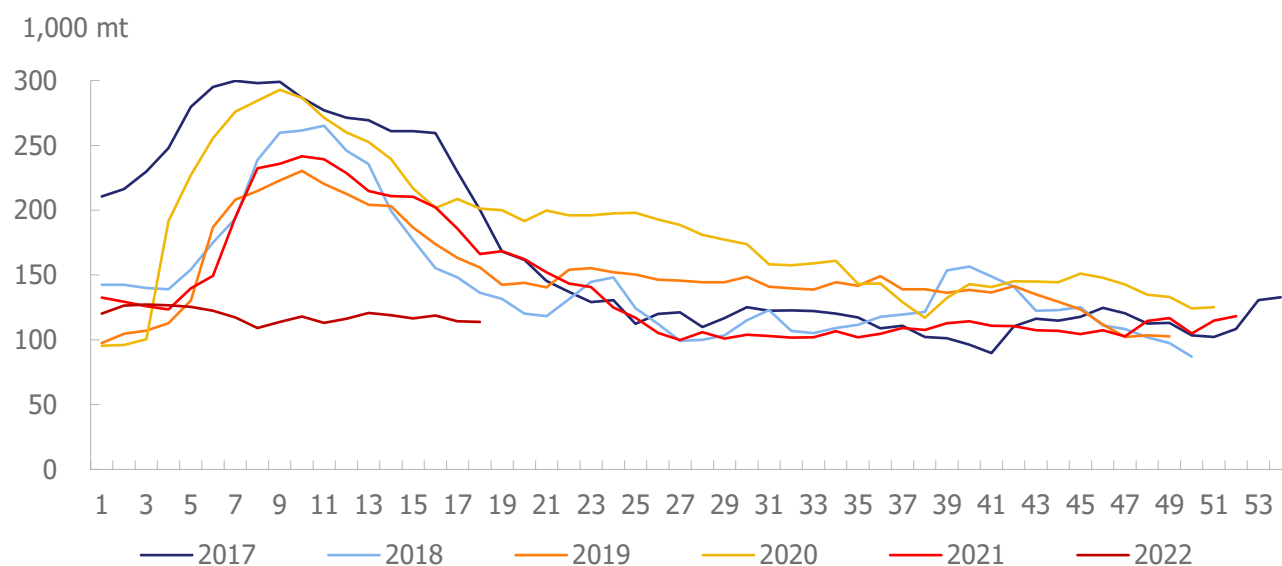
SHFE/LME price ratio surged and then fell last week, ranging between 6.9-7.4 and the import losses stood at 4,077-2,479 yuan/mt. Under the influence of marginally weakening consumption and pessimism about the market, LME lead extended its drops, driving SHFE/LME price ratio further higher. Although SHFE zinc was boosted by positive expectations, the short-term consumption of zinc remained weak. The weekly social inventory also increased, resulting in the downward movement of SHFE/LME price ratio. The price ratio is expected to move rangebound in the future with both SHFE and LME zinc likely to fall.

Figure 14: China zinc import arbitrage ratio

Source: LME, SMM

Refined zinc supply

Total zinc ingots inventories across seven markets in China stood at 265,800 mt as of Friday May 20, up 4,700 mt from May 16 and down 1,100 mt from May 13. The social inventories increased slightly in the past week. In Shanghai market, after the pandemic prevention and control measures loosened in the northern suburbs which accommodated a number of warehouses, the market traders picked up goods smoothly and the market was more robust than before. Inventory in Shanghai continued to fall. In Tianjin market, there were concentrated arrivals at smelters last week. However, pick-up of goods was limited at Dongli warehouse affected by the pandemic, and vehicles from Tianjin could hardly enter Hebei province, slowing down the shipments in Tianjin. Inventory in Tianjin market increased. In Guangdong market, the arrivals were stable and goods holders quoted actively over the July contract with strong willingness to ship goods. Spot premiums dropped sharply. Inventory in Guangdong market fell slightly amid rigid demand. Inventories in Shanghai, Guangdong and Tianjin dropped 700 mt and inventories across seven major markets decreased 1,100 mt on a weekly basis.

Figure 15: Domestic zinc stocks (Shanghai Guangdong Tianjin)

Source: SMM

Table 5: Major zinc smelters ex-works quotes for #0 zinc

yuan/mt

Region	Company	May 13	May 20	Up/Down	Remark	Status
North-east	Huludao Zinc Industry	26,140	26,650	510	ex-works #0 zinc price	normal operation
North-west	Hanzhong Zinc	25,545	25,895	350	#0 zinc traded price in Shanghai	normal operation
South China	Shaoguan Smelter	26,140	26,560	420	#0 zinc traded price in Guangdong	normal operation
Central China	Zhuzhou Smelter	26,140	26,495	355	#0 zinc traded price in Shanghai	normal operation
South-west	Yunnan Chihong Zn&Ge	25,640	26,065	425	#0 zinc traded price in Shanghai	normal operation
Central China	Yuguang Zinc	25,445	25,845	400	#0 zinc traded price in Shanghai	normal operation
South-west	Hechi Nanfang	25,750	25,768	18	#0 zinc traded price in Guangdong	normal operation
North-west	Shanxi Dongling	25,660	26,065	405	#0 zinc traded price in Shanghai	normal operation
North China	Chifeng Hongye	25,540	25,785	245	#0 zinc traded price in Tianjin	normal operation
North China	Bayan Zhuoer Zijin	25,590	25,820	230	#0 zinc traded price in Tianjin	normal operation

Source: SMM

Table 6: Operating rates at major domestic zinc smelters

Company	Apr	May (estimate)	Monthly change
Zhuzhou Smelter Group Co., Ltd.	106.00%	111.60%	-1%
Yunnan Chihong Zinc & Germanium Co., Ltd.	84.62%	113.85%	-29%
Huludao Zinc Industry Co., Ltd.	75.38%	75.38%	0%
Hanzhong Zinc Industry Co., Ltd.	45.00%	60.00%	-15%
Guangxi Hechi Nanfang Non-ferrous Metals Group	124.00%	136.00%	-12%
Henan Yuguang Zinc Industry Co., Ltd.	101.98%	100.00%	3%
Shaanxi Dongling Industry & Trade Group Co., Ltd.	87.69%	87.69%	1%
Chifeng NFC Zinc Co., Ltd.	80.00%	94.29%	-23%
Shenzhen Zhongjin Lingnan Nonfermet (Smelting) Group Co., Ltd.	109.80%	109.80%	-31%
Zijin Mining Bayannur Co., Ltd.	102.00%	102.00%	0%
Sichuan Hongda Group	0.00%	0.00%	0%
Shaanxi Zinc Industrial Co., Ltd.	108.00%	108.00%	24%
Baiyin Nonferrous Metals (Group) Co., Ltd.	111.72%	95.17%	0%
Yunnan Xiangyun Feilong Nonferrous Metals Co., Ltd.	30.00%	30.00%	3%
Yunnan Xiangyun Feilong Regeneration Technology Co., Ltd.	126.00%	60.00%	8%
Western Mining Co., Ltd.	16.29%	42.86%	-31%
Yunnan Jinding Zinc Industry Co., Ltd.	109.20%	109.20%	8%
Inner Mongolia Xing'an Copper & Zinc Smelting Co., Ltd.	0.00%	32.64%	-100%
Yunnan Luoping Zinc & Electricity Co., Ltd.	60.00%	60.00%	0%
Sihuan Zinc & Germanium Technology Co., Ltd.	92.73%	90.00%	11%

Source: SMM, E: estimate

Table 7: Domestic #0 zinc prices

yuan/mt

Region	2022/5/13	2022/5/20	Up/Down	Inventory (1,000 mt)
Shanghai	25410-25550	25760-25990	395	87.2
Nanchu	25640-25860	25680-25860	20	51.8
Tianjin	25470-25660	25670-25950	245	107.6

Source: SMM

Table 8: New production capacity at refined zinc smelters in 2020-2022 (10,000 mt/year)

Name	Old capacity	New capacity	Date of commissioning	Note
Wuqia Zijin Zinc Smelting	0	10	2020.12.10	Yielding output
Qinghai Western Indium	0	4	2021.8	Will be put into production soon
Qinghai Huaxin Environmental Protection	0	5	2020.Q4	Yielding output
Southwest Energy and Mineral	0	8	2021.11	Trial production
Xiangyun Feilong	18	15	TBD	Will be put into production soon
Guangxi Yusheng	0	10	2021.11	Trial production
Jincheng Zinc	0	10	2022	Will be put into production soon
Nandan Jilang	8	6	2022	Technical transformation
Guangxi Yongxin	5	5.8	2022	Will be put into production soon
Henan Jinli	0	10	2023	Passing environmental impact assessment
Sichuan Junlei	8	0	2021.8	production resumed
Liangshan Suoma	0	2	2021.8	Yielding output
Heichi Nanfang	40	30	2026	Production expansion

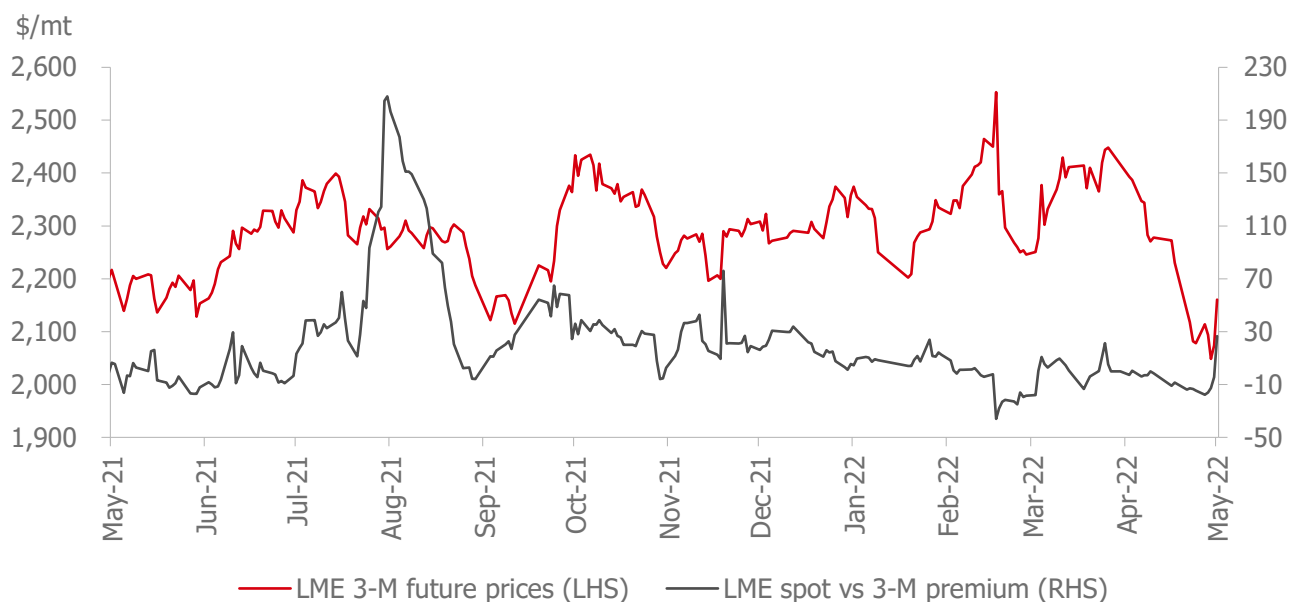
Source: SMM

Zinc oxide

According to SMM survey, the average operating rate of zinc oxide stood at 57.1%, up 5.3% from a week ago. Enterprises which originally scheduled to resume the production in the middle of the month finally carried out the plan last week. Affected by the relaxation of pandemic control measures in Shanghai, manufacturers in the surrounding cities gradually resumed the production, driving up the operating rates. In terms of the orders, the orders of enterprises were poor amid the sluggish macro economy. After making inquiries the week before, terminal enterprises were bearish on zinc prices while the orders were sluggish, and the terminal enterprises were not in a rush to restock, resulting in no improvement in orders received by zinc oxide enterprises. On the other hand, affected by the sluggish orders, most zinc oxide companies had to compete for a smaller cake in the market at lower prices. For example, the zinc oxide related to pressure sensitive and lightning arrestors saw fierce competitions, with most companies suffering and holding a pessimistic attitude towards future orders. Operating rates are expected to move rangebound this week.

Lead: The lead futures rebounded from low last week and the smelters were unwilling to sell with quotation in premiums

Figure 16: LME lead prices and premiums



Source: LME, SMM

Price review and forecast

The LME lead opened at \$2,073.5/mt, and the US dollar index fell continuously at the beginning of last week, which brought some support to the LME lead and ended the downward trend from a week ago. The LME lead stopped falling and stabilised at the beginning of last week, and moved around \$2,100/mt. US Federal Reserve Chairman Powell made a speech in support of continuing to raise interest rates. In this case, the LME lead touched a weekly low of \$2,025/mt amid the negative macro sentiment. However, due to the general increase of non-ferrous metals, LME lead rebounded again near the weekend. Last Friday, the LME lead surged to a weekly high of \$2,145/mt, and tested \$2,150/mt.

SHFE lead opened at 14,870 yuan/mt, and rose to a high of 15,090 yuan/mt at the beginning of last week, and then went downward to 14,680 yuan/mt, and finally rebounded and closed at 15,005 yuan/mt.

In the spot market, as lead futures went downward and tested the cost support last week, SMM 1# lead moved below 15,000 yuan/mt, and many smelters were reluctant to sell and held the prices firm. According to SMM research, several smelters said that the prices of raw materials were still high amid falling lead prices, hence it is difficult to restock crude lead and lead concentrate. In this case, smelters were unwilling to sell lead ingots and maintained quotation in premiums of 0-100 yuan/mt with low enthusiasm for shipping. Refined lead smelters mainly delivered for long-term orders. At the beginning of last week, many smelters suspended making quotations and were reluctant to sell amid wait-and-see sentiment. Some smelters in Hunan, Guangdong and other places quoted in premiums of 50-100 yuan/mt. The discounts in Yunnan market narrowed slightly to 150-250 yuan/mt. Near the weekend, the downstream purchased on dips, and the market trading improved as the lead prices rebounded. The warrants were quoted in premiums of 0-30 yuan/mt over SHFE lead 2206 contract. Some traders purchased a small amount at low prices with expectations for lagged price hike in the future. In terms of secondary refined lead, the increase of lead prices improved the selling willingness of smelters amid

the off-season in the battery scrap recycling market and the tight reduced lead supply. Under the cost pressure, the secondary lead smelters were firm to their quotes and reluctant to sell. The mainstream prices of secondary refined lead (including tax) remained at 14,750-14,900 yuan/mt. In this case, downstream battery factories purchased only as needed, and the overall market transactions were sluggish.

There will be more economic data in the United States this week, such as the initial reading of Markit manufacturing industry and service industry PMI in May, the monthly rate of durable goods orders in April, which are expected to decline. At the same time, the US Federal Reserve FOMC will release the minutes of its monetary policy meeting in May, and attention should be paid to the impact on the subsequent interest rate hikes.

In terms of LME lead, the contract fell continuously and reached a new low since April 23, 2021. During the period, LME lead inventories continued to increase, and the contango of LME cash to three-month contract narrowed, but remained in the negative territory. As the fundamentals of the LME lead were weaker than those in China, the prices were mainly subject to the macro aspect. With the decline of US dollar index, the pressure on non-ferrous metals will be released, and the lead prices will usher in a round of correction between \$2,065-2,185/mt.

In terms of SHFE lead, after the overseas pressure eased, the domestic fundamentals showed a strong performance. During last week, lead prices fell below the cost line of secondary lead, tightening the lead supply (the shipment of primary lead and secondary lead smelters decreased significantly, and the supply of goods for spot circulation tightened). In addition, the lead prices stopped falling and started to rise amid an unexpected production accident in Hunan. At the same time, as the downstream were more willing to purchase on dips and the secondary lead prices were higher than the refined lead prices, the lead ingots inventories reversed the previous upward trend and decreased. As a result, lead prices rebounded. In addition, the lead prices may continue to rebound due to the environmental protection news. It is expected that the most traded SHFE lead contract will be 14,850-15,200 yuan/mt this week.

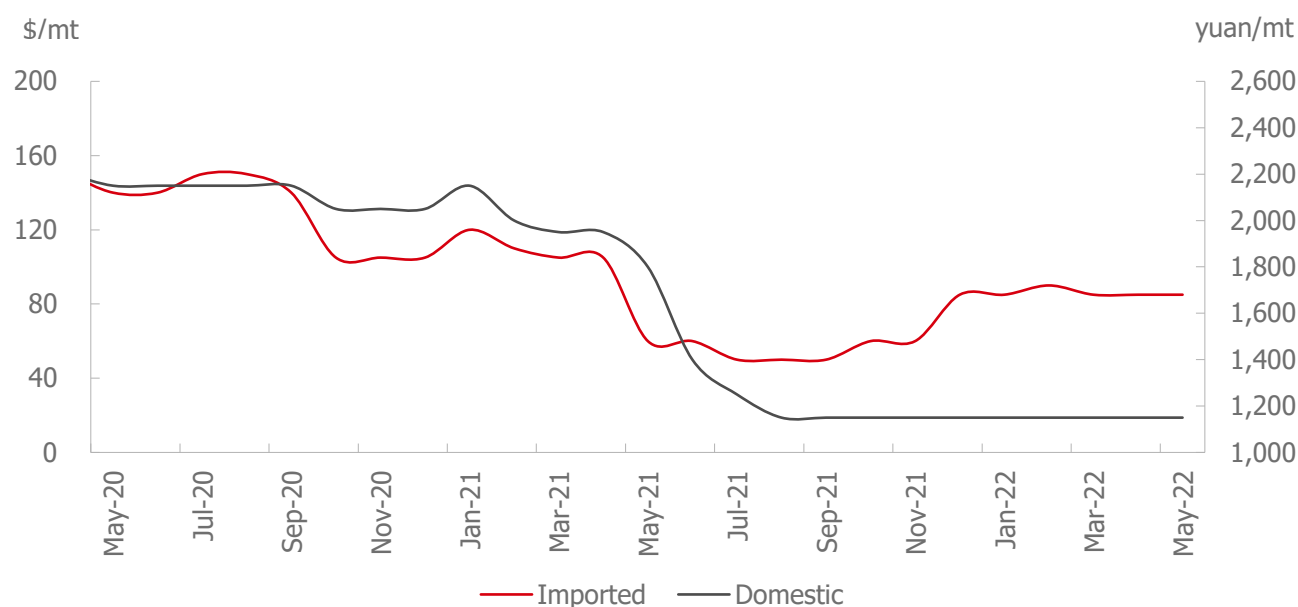
The spot prices are expected to move between 14900-15100 yuan/mt. In terms of primary lead, the supply steadily increased, while the low prices made smelters generally reduce the shipments. If the lead prices rebound, smelters may be more willing to sell and spot premiums may decline. In terms of secondary lead, as lead prices trended below the cost line of secondary lead, smelters were generally reluctant to sell. But the profit of secondary lead was slightly repaired after the lead prices stopped falling and rebounded. If the repair process continues this week, the secondary lead may be shipped in discounts. Downstream enterprises mainly purchased on dips and the off-season in the battery market continued. If the follow-up lead prices returns to above 15,000 yuan/mt, the enthusiasm of downstream enterprises to purchase may decrease.

Figure 17: China lead spot prices

Source: SMM

Lead concentrate

In the first half of May, the TCs of the lead concentrate (with silver 600-1,000 g/mt, precious metal separately priced, delivery to the factory) of smelters in Henan, Hunan and other places fell below 1,000 yuan/mt, while the benchmark prices of lead concentrate without enrichment was still 1,800-1,900 yuan/mt. Smelters normally had relatively low acceptance for the products without enrichment. TCs of lead concentrates dropped in Guangxi and Yunnan, and the enthusiasm of mine shipments was low due to the continuous drop of lead prices. In terms of lead concentrate import, according to SMM research, the pandemic situation is still an important factor affecting the lead concentrate trade in the near future. In the first quarter, some long-term orders of lead concentrate were delayed, and were delivered in April. As a result, the imports increased slightly from March. In addition, in mid-April, the LME lead corrected from high with slightly greater decline than that of SHFE lead, which temporarily provided an opportunity for the import of lead concentrate. After the pandemic has eased, the import of lead concentrate may increase and temporarily ease the tight supply of domestic concentrates.

Figure 18: Imported Lead Concentrate TC

Source: SMM

Table 9: Lead concentrate TCs in Apr-May 2022

	Apr 2022	May 2022	MoM Change
Imported (\$/dmt)	80-90	80-90	0
Domestic (yuan/mt in Pb content)	1,000-1,300	1,000-1,300	0

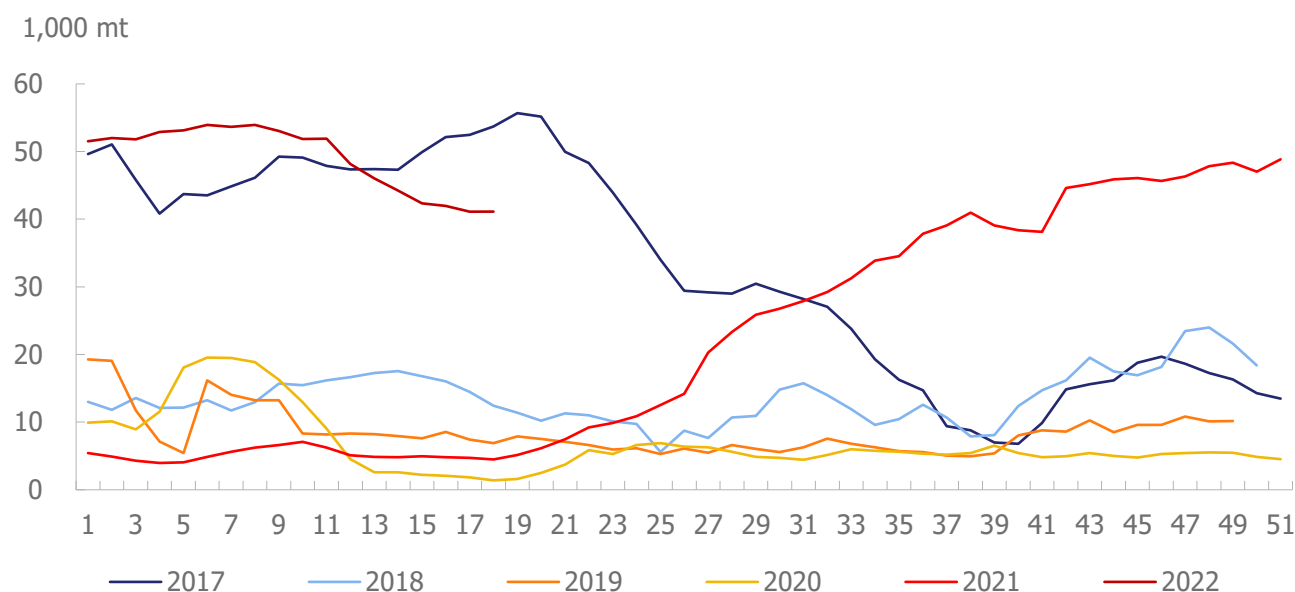
Source: SMM

Note: 60% lead content in the imported concentrate, and 50% lead content in the domestic concentrate.

Supply of refined lead

As of May 20, the inventory of primary lead stood at 5,000 mt in the major deliverable brand companies, a decline of 1,100 mt from the previous week (May 13), according to SMM.

According to the survey, deliverable brands continued to transfer the stocks to social warehouses at the beginning of last week for the delivery of SHFE lead contract. As a result, the in-plant inventories fell. However, the in-plant inventories rose as most smelters were unwilling to sell at low prices amid the continuous decline of lead prices. Nonetheless, the in-plant inventories were still lower than a week ago. In addition, the output of primary lead deliverable brands increased steadily. If the downstream is less willing to purchase on dips, the in-plant inventories may increase slightly.

Figure 19: Domestic lead inventories (Shanghai Guangdong)

Source: SMM

Inventory

According to SMM, as of May 20, the total lead ingot inventory in the five major markets reached 99,300 mt, up 1,700 mt compared with the previous Friday (May 13), and down 9,300 mt from last Monday (May 16).

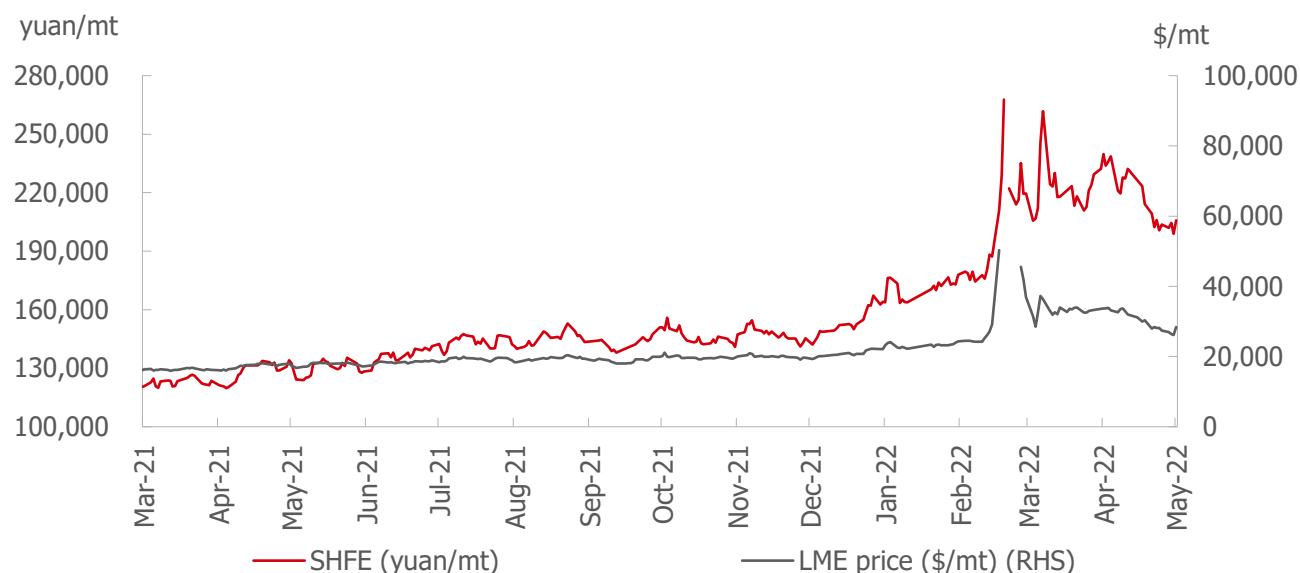
According to the survey, due to the SHFE lead contract delivery at the beginning of the week, the deliverable goods arrived at the warehouse, hence the lead ingot social inventories exceeded 10,000 mt. At the same time, primary lead and secondary lead smelters were unwilling to ship as the lead prices declined slightly and the secondary lead prices were close to the cost. In this case, most downstream companies purchased as needed at lows. As the secondary lead prices were higher than the refined lead prices, the downstream turned to the trade market. As a result, the inventory of lead ingots decreased significantly from the beginning of the week. In addition, as the off-season in the battery market will still be in place this week, the downstream enterprises have limited demand. Moreover, the supply of lead ingots may be tightened due to factors such as environmental protection and safety rectification. As a result, the lead ingot social inventories may continue to decline.

Downstream demand

As the lead prices fell and there was no major change in the lead-acid battery consumption, traders purchased less to mitigate the risks. Meanwhile, the battery wholesale market was still in sales promotion. As a result, the battery prices remained stable. In terms of battery enterprises, as lead prices fell below the cost line, downstream enterprises purchased on dips while some enterprises turned to the trading market for procurement as the tradable cargoes in the spot market were limited and the spot lead prices were mainly in premiums.

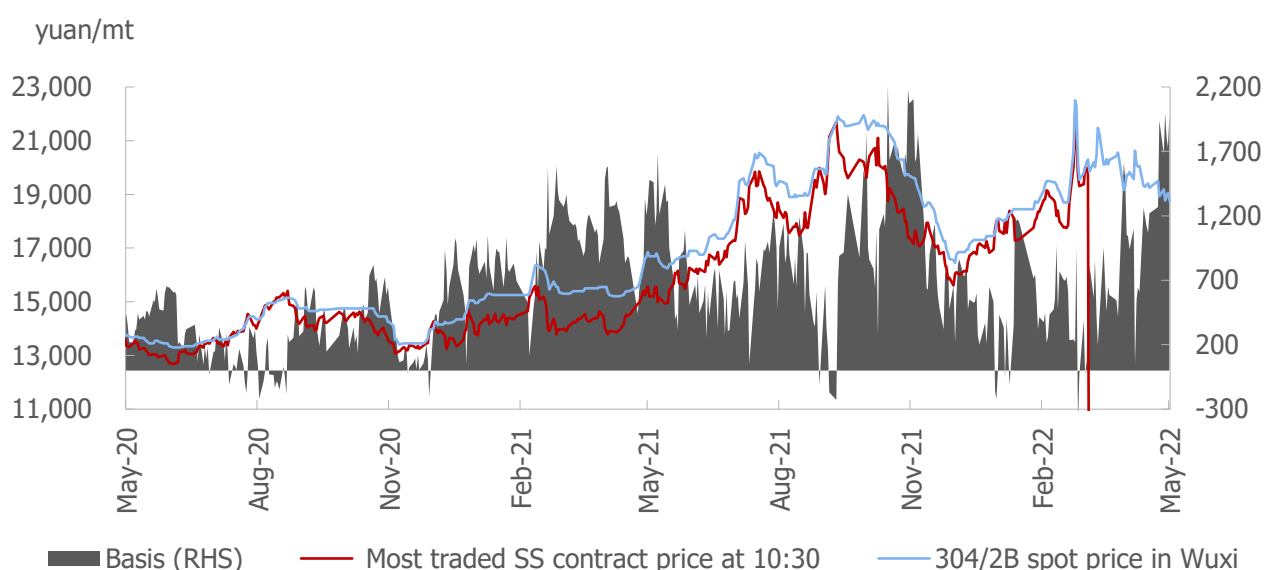
Nickel: Nickel prices will probably drop this week due to the customs clearance of spots

Figure 20: SHFE-LME price trend



Source: SMM

Last week, the imports of pure nickel gained profits. According to SMM research, due to the high spot premiums and the weak demand, the bonded zone stocks did not see a large number of customs clearances, so the tight supply of pure nickel in China was not eased. In terms of NPI, the pandemic suppressed the stainless steel downstream demand, so the market transaction was slack, and the upstream quoted lower prices. NPI prices will probably drop in the short term. In terms of nickel sulphate, due to the influence of LME nickel, the raw material prices of nickel sulphate dropped sharply, putting downward pressure on nickel sulphate. On the demand side, stainless steel prices have dropped for several days, and the manufacturers mainly held a wait-and-see attitude. On the cost side, NPI prices were stable even though the shipment of nickel ore from the Philippines was hindered. SHFE nickel prices stopped falling and rebounded due to the tight fundamentals, and the import window has opened for several days. However, traders were still uncertain about the future market, so the imports of nickel-based raw materials did not increase significantly. In terms of alloy, the domestic pandemic situation has not completely improved, so the operating rates of downstream manufacturers were less than expected. Besides, the high premiums weakened the demand. To sum up, pure nickel was weak in both supply and demand, but it is expected that there will be a large amount of customs clearance for pure nickel this week. SHFE nickel prices are expected to fluctuate between 200,000-217,000 yuan/mt this week, and LME nickel prices are expected to move between \$26,500-28,500/mt.

Figure 21: Prices of SS cold-rolled coils and futures contracts in Wuxi

Source: SMM

SS contract rebounded at the end of last week, and the spread between the spots and futures narrowed somewhat

In the first half of last week, the SS contract dropped sharply as the steel mills continuously lowered the quotes and the LME nickel prices plummeted. The price spread between spots and futures remained at around 1,000 yuan/mt even though the spot prices fell. Besides, the market could still see a decrease in warrants. Meanwhile, the downstream generally held a wait-and-see attitude and only purchased on rigid demand. In fact, the sharp drop in futures prices was aroused by the market sentiment and the influence of funds. Last Friday, the prices rebounded. On the supply side, the inventory dropped sharply due to the limited arrivals and the increase in pick-up. However, steel mills got a high in-plant inventory. Delong, which has a large market share, cut the production again and reduced the output of cold-rolled coils. In addition, the traders held firm to the prices last Friday. Therefore, stainless steel prices may stop falling. On the cost side, 3 series stainless steel consumed extremely low pure nickel, so the cost mainly depended on the NPI prices. The prices of NPI dropped as the increase in production of Indonesian NPI exceeded expectations, and then the prices stabilised in light of nickel ore prices. In short, stainless steel prices were still supported by the costs, and the recovery of consumption in the future is of utmost concern. SMM believes that the prices of stainless steel will remain stable with some upward potential this week.

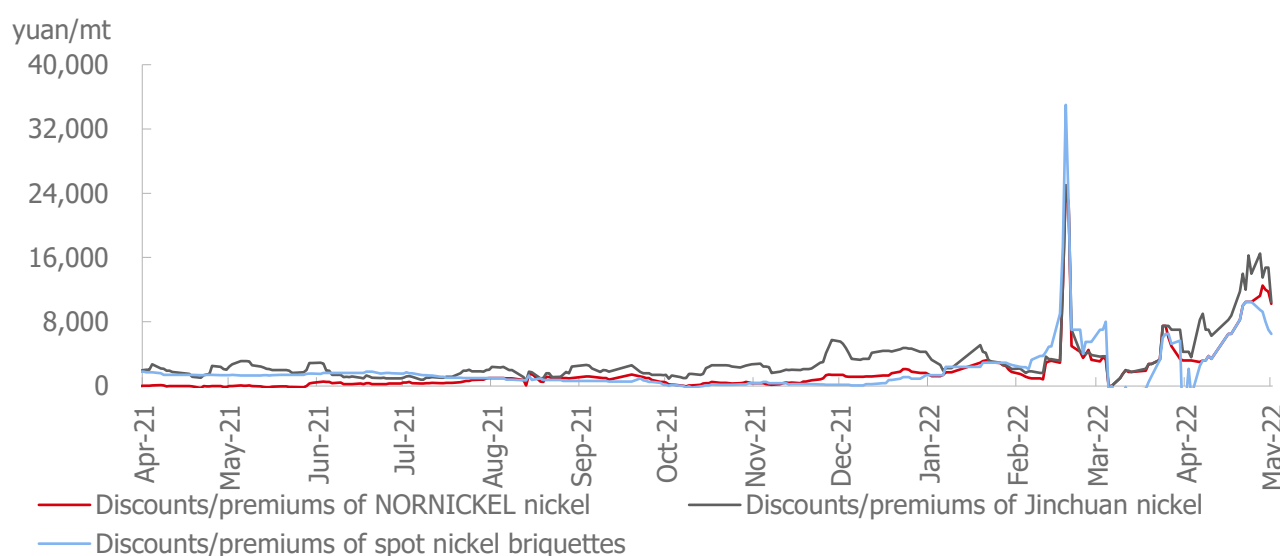
Pure Nickel

Spot premiums could not drop last week as SHFE nickel hovered around 200,000 yuan/mt

LME nickel dropped continuously from last Monday to Wednesday. On Thursday May 19, the prices rebounded sharply by 8.8%. At present, the trading volume has not yet improved, and LME nickel will still fluctuate wildly. SHFE nickel prices were strongly supported by the tight supply even though the demand was dragged down by the macro factors and the pandemic, and the prices moved between 200,000-220,000 yuan/mt. Last Thursday night, although LME nickel prices rose sharply, the imports still gained profits. According to SMM research, due to the high spot premiums and the weak demand, the bonded zone stocks did not see a large number of customs clearances, so the tight supply of pure nickel in China was not eased. On the demand side, due to the

extreme price moves of nickel in March and April, orders of the downstream sectors, such as alloy, battery and electroplating, were delayed. With the dropping of futures prices last week, downstream purchasing based on rigid demand was completed. To sum up, although the import window opened, the demand and supply of pure nickel were still weak. In the spot market, due to the high costs of holding futures positions and low delivery pressure faced by traders, the premiums of Jinchuan nickel and NORNICKEL nickel remained at a high level last week, and the absolute price did not drop significantly when the futures prices kept fluctuating. The downstream manufacturers had finished their purchasing, so the spot trading was sluggish last week. As for nickel briquette, due to the higher prices of nickel briquette, some nickel sulphate factories sold nickel briquette at low prices, resulting in lower premiums of nickel briquette than NORNICKEL nickel. However, the price spread between nickel briquette and nickel plate was not enough to drive alloy and stainless steel industries to use nickel briquette as raw materials in large quantities. Therefore, the market saw rare nickel briquette trading last week.

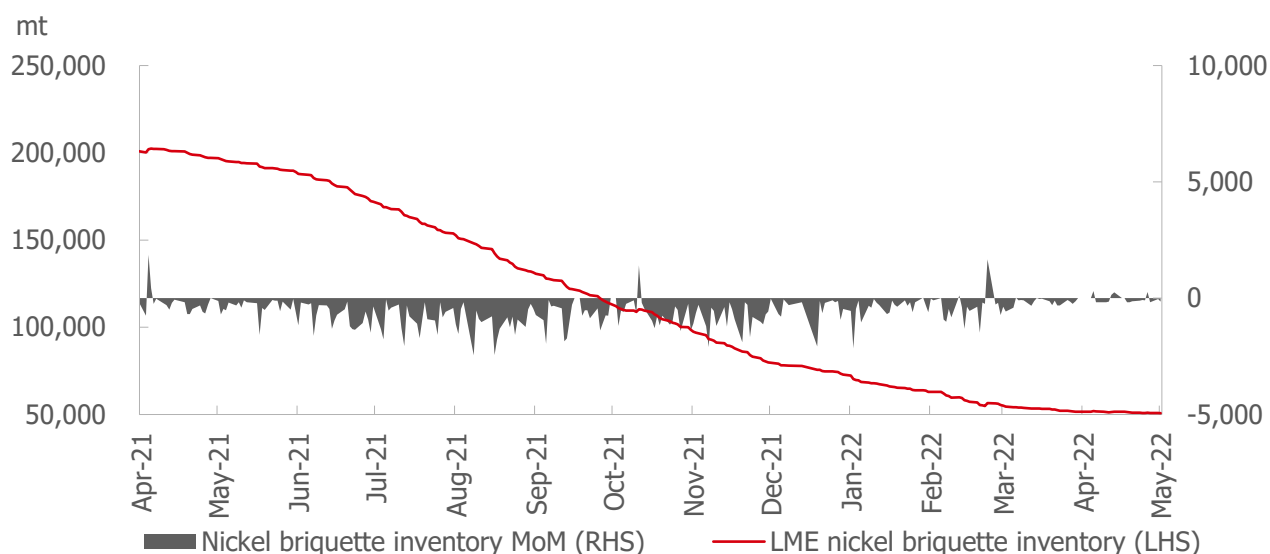
Figure 22: Premiums/discounts of domestic refined nickel



Source: SMM

Imports of pure nickel turned profitable last week, while inventory in the bonded zone declined slightly

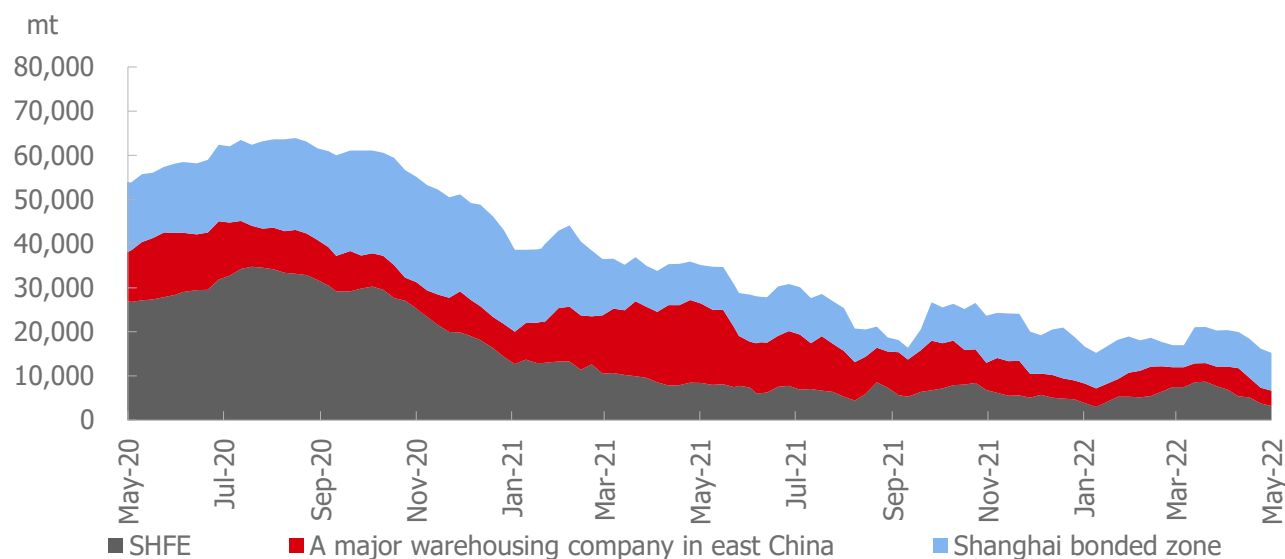
From last Monday to Wednesday, LME nickel prices dropped, and SHFE nickel prices remained rangebound due to the tight supply. As a result, pure nickel imports turned profitable, even though LME nickel rebounded sharply last Thursday night. Nickel inventory in Shanghai bonded zone totalled 8,600 mt last week, a decrease of 200 mt from two weeks ago. The inventory of nickel briquettes and nickel plates was 2,900 mt and 5,700 mt respectively. Due to the high spot premiums and the weak demand, the bonded zone inventory did not drop sharply when the import window was opened. Therefore, the current import profits could not cover the premiums.

Figure 23: LME nickel briquette inventory

Source: SMM

Social inventory of pure nickel declined slightly last week amid high spot premiums

Last week, SMM pure nickel inventory across six regions of China stood at 7,013 mt, 739 mt lower than the previous week. The inventory of nickel briquette decreased by 400 mt to 1,950 mt. The inventory of nickel plate stood at 5,063 mt, down 339 mt from a week earlier. The decrease in pure nickel inventory slowed down as the alloy and some other downstream sectors had completed their purchasing two weeks ago. Therefore, the purchasing from producers was less than expected amid high premiums of nickel plate last week. The decrease in nickel briquette inventory was contributed by the higher prices of nickel briquette than nickel sulphate, and the alloy factories, steel mills and traders purchased a small amount of nickel briquette that was sold by some nickel sulphate producers at low prices.

Figure 24: Domestic inventory

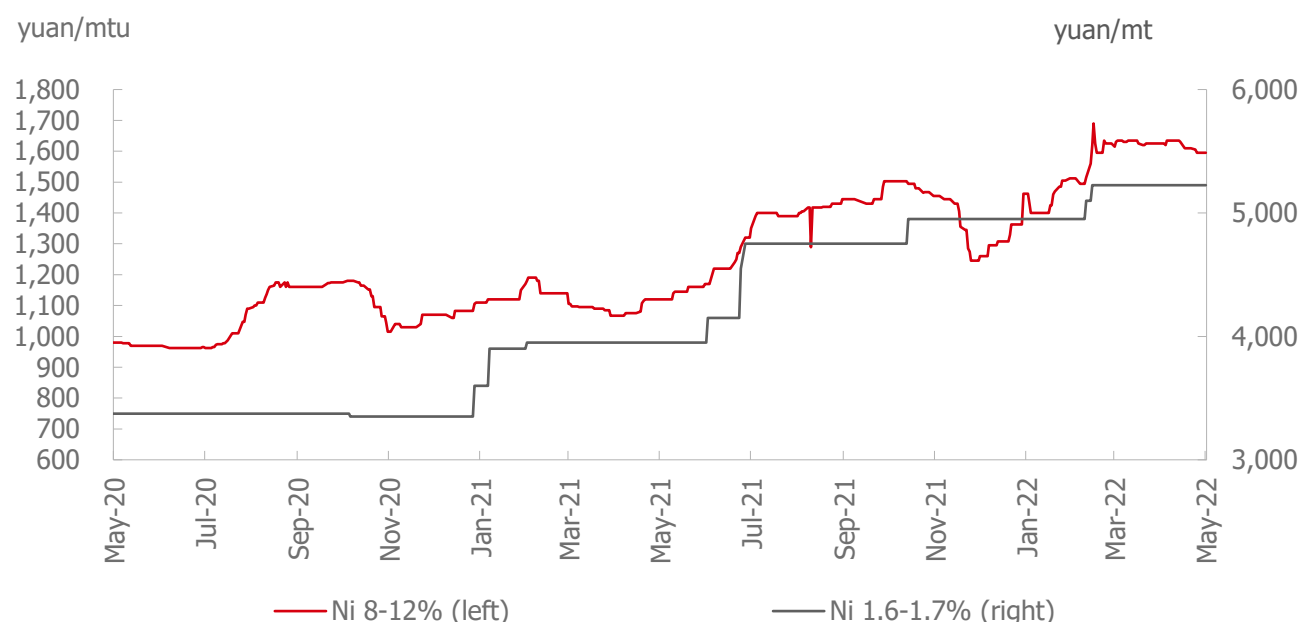
Source: SMM

NPI/Stainless Steel

NPI prices fell amid poor demand

The average price of SMM 8-12% high-grade NPI was 1,595 yuan/mtu (ex-factory including tax) last Friday, down 15 yuan/mtu from a week ago. The average price of Indonesia 10-14% NPI was 1,610 yuan/mtu (ex-factory including tax) last Friday, down 20 yuan/mtu from a week ago. Affected by the market transaction news at the beginning of last week, the NPI prices fell and the market transactions were poor amid the strong wait-and-see sentiment across the upstream and downstream. The stainless steel prices declined slightly due to the weak terminal demand and the impact of the pandemic. Therefore, the profit of steel mills narrowed, and the acceptance of raw material prices declined. In this case, steel mills chose to reduce the production to reduce the demand for raw materials and slow down the increase of stainless steel inventories. In terms of supply, NPI mills chose to further observe the market situation, but the quotations fell. At the same time, the smooth production of NPI in Indonesia may lead to the supply surplus. As a result, NPI prices are expected to remain volatile in the short term between 1,570-1,600 yuan/mtu.

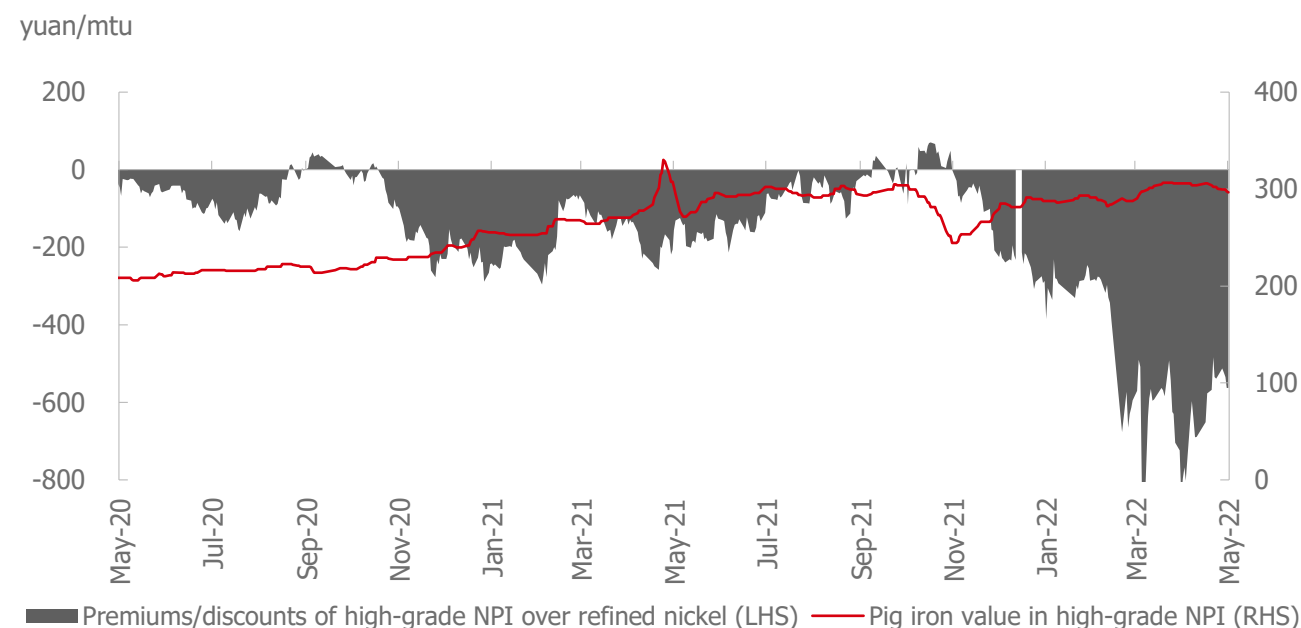
Figure 25: NPI prices



Source: SMM

The weekly average discount of high-grade NPI stood at 553.1 yuan/mtu against refined nickel as of last week, 21.6 yuan/mtu higher than a week earlier

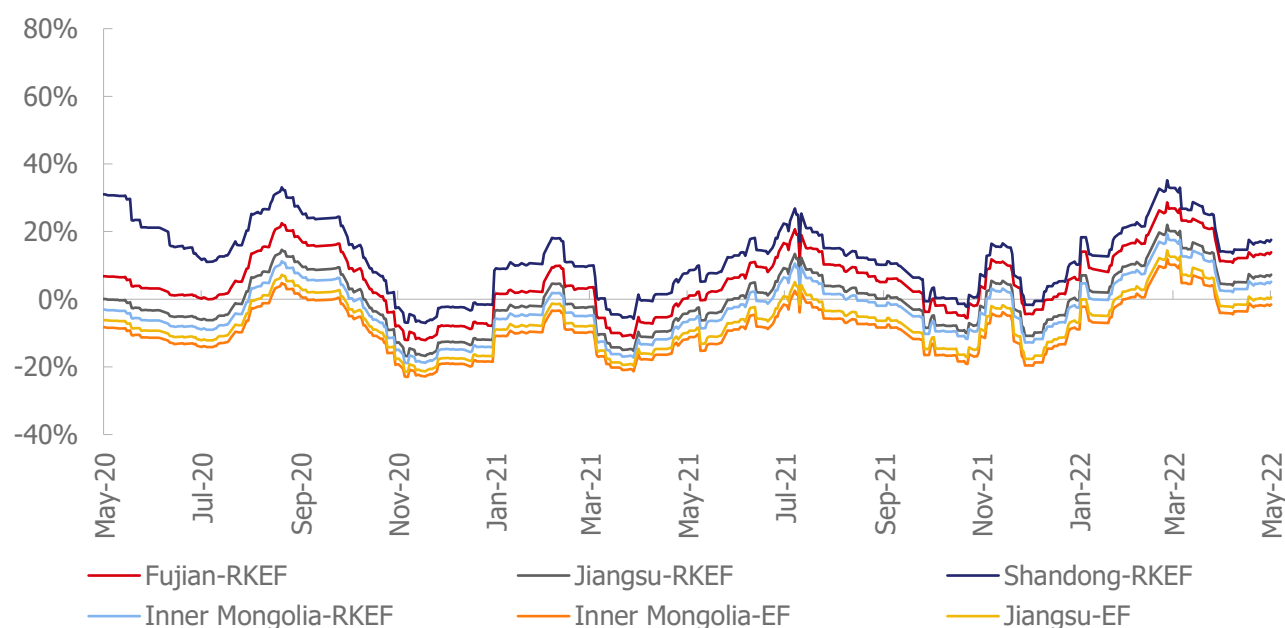
The weekly average discount of high-grade NPI stood at 553.1 yuan/mtu against refined nickel as of last week, 21.6 yuan/mtu higher than a week earlier. During the week, the NPI prices fell because the stainless steel prices dropped amid the sufficient NPI supply and the weak downstream demand for stainless steel caused by the pandemic. In this case, the profit of steel mills declined, and the acceptance of raw materials prices was limited. In terms of pure nickel, the pure nickel found the opportunity for import amid the volatile nickel prices and the narrowed SHFE-LME price spread. In this case, the nickel prices may drop in the future. At the same time, the NPI prices were declining, and it is expected that the discounts will continue to fluctuate at this level.

Figure 26: Premiums and discounts of high-grade NPI against refined nickel

Source: SMM

NPI prices fell and profit of stainless steel remained volatile

The NPI profits based on nickel ore purchased 25 days earlier remained volatile last week. On the cost side, the nickel ore prices were relatively stable recently, and were hard to decline in the short term as the cost of auxiliary materials and electricity costs for NPI mills was still high. In terms of profitability, the NPI prices declined mainly because the downstream stainless steel prices declined amid the weak terminal demand and high stainless steel inventories caused by the pandemic. In addition, as the profit of steel mills narrowed, the acceptance of raw material prices declined. Moreover, the NPI supply may be in significant surplus due to the continuous production of NPI in Indonesia. As a result, the NPI prices kept falling.

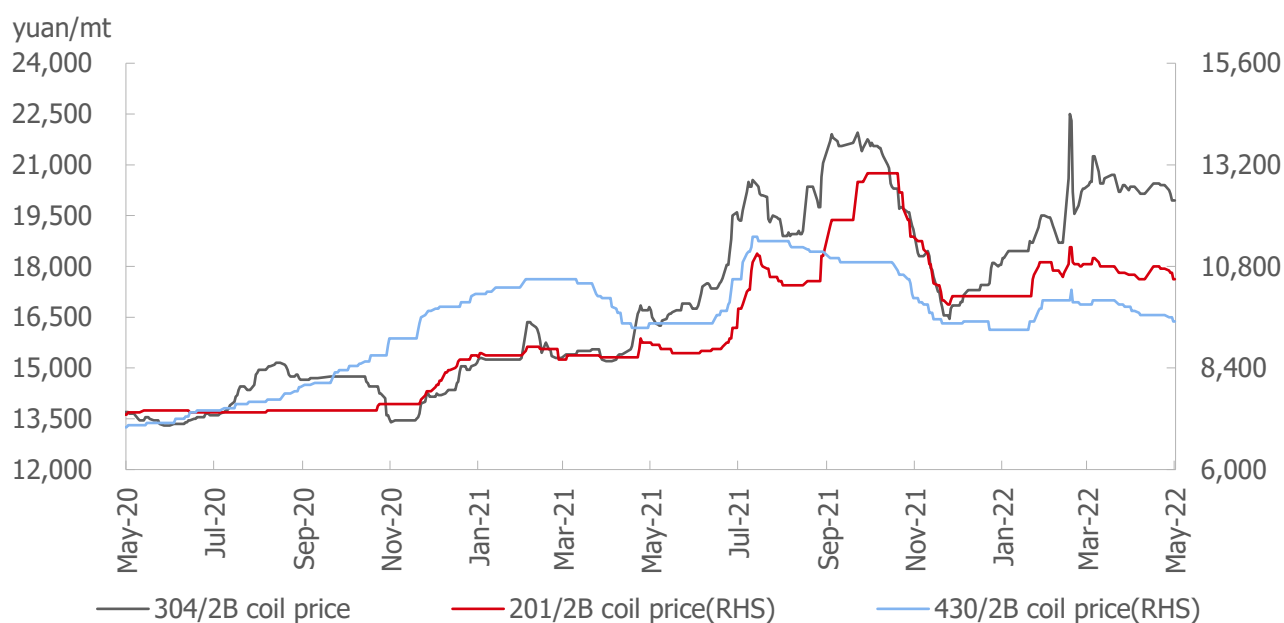
Figure 27: Profit on the ore purchased 25 days ago

Source: SMM

The in-plant inventories increased greatly as steel mills held the prices firm after the continuous price decline

In the spot market, stainless steel prices were dropping last week. Although the pandemic situation in Jiangyin improved, the shipment was still limited. After the prices fell, downstream customers purchased as needed. At present, inventories of traders were at low level while the inventories of steel mills increased more greatly. As the steel mills failed to see improved transactions after lowering the prices, steel mills held the prices firm again after the prices rebounded last Friday. Although the cost support gradually weakened, it still existed as the NPI prices remained stable amid the news concerning nickel mines in the Philippines, and the SHFE nickel rebounded with LME nickel. Last week, the price difference between futures and spot prices remained wide, but was repaired on Friday. The warrants transactions continued to pull down the inventories. The prices of 200 and 400 series stainless steel continued to fall last week due to the declined guide prices of steel mills. To sum up, SMM believes that due to the weak supply and demand, the prices of stainless steel will remain volatile.

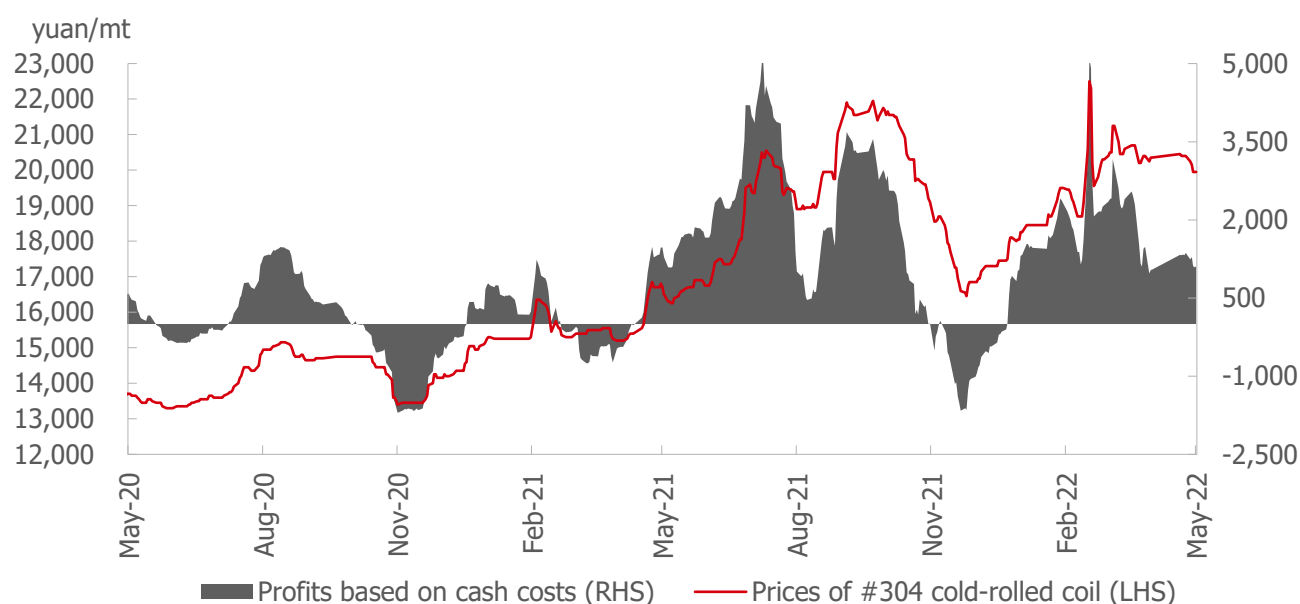
Figure 28: Stainless steel price trend by series



Source: SMM

Cost support of stainless steel remained stable while profits narrowed

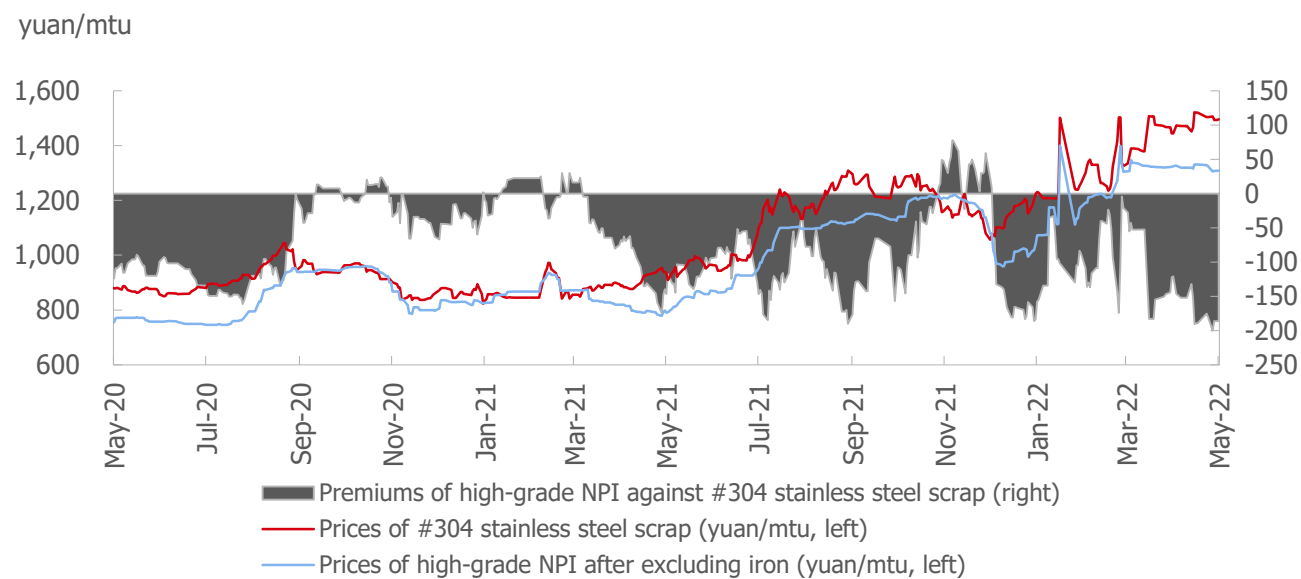
Although the cost of 304 cold rolled coil generally fell last week, prices of integrated steel mills fell close to the breakeven point and non-integrated steel mills were basically in losses. On the nickel-based raw material side, LME nickel continued to drop in the first half of last week, and the import window remained open. However, according to SMM research, there was no significant imports of nickel-based raw materials. Although NPI prices fell in the first half of last week, the cost support still existed as the NPI prices remained stable amid the news concerning nickel mines in the Philippines, and the SHFE nickel rebounded with LME nickel. At present, the NPI supply increased due to the more-than-expected new NPI capacity in Indonesian and the improved ore grade. In terms of ferrochrome, the current ferrochrome prices lacked upside momentum, and after the prices of chrome ore fell, the ferrochrome prices declined. The overall profits narrowed as steel mills lowered their prices more significantly last week. However, steel mills may continue to hold the prices firm. SMM expects that the profits of stainless steel will expand this week.

Figure 29: 304 stainless steel CRC profit

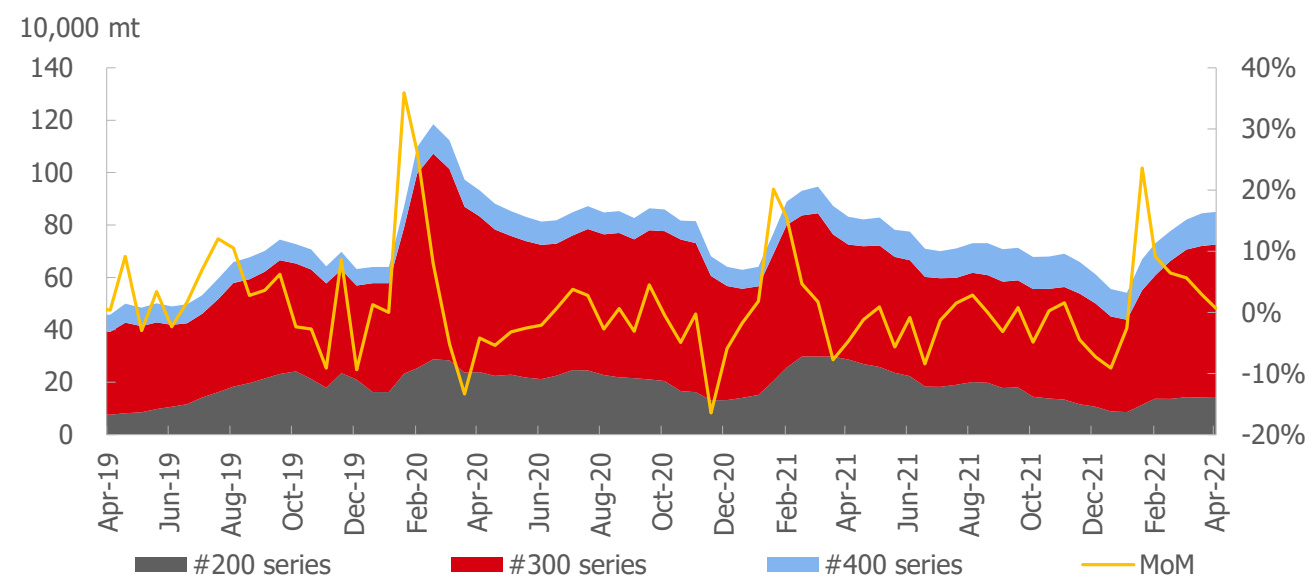
Source: SMM

The stainless steel scrap prices decreased a lot and the cost effectiveness of high-grade NPI declined

The high-grade NPI prices were 1,307 yuan/mtu, while the stainless steel scrap prices were 1,494 yuan/mtu last week. As a result, high-grade NPI still had cost advantages over stainless steel scrap. Last week, the NPI prices declined slightly due to the dropping stainless steel prices and the weak demand amid the production reduction of steel mills. In the second half of last week, although the shortage of nickel ore in the Philippines dented the market, it did not have much impact on the supply of nickel ore. As a result, the NPI prices were basically stable, but the NPI demand weakened as the stainless steel production continued to decline in May. After the continuous sharp correction of LME nickel, the import window stayed open for a few days. However, due to the decline of NPI and stainless steel prices and the weak demand of steel mills, the stainless steel scrap prices dropped a lot. To sum up, the cost efficiency of high-grade NPI last week declined compared with a week ago. The discounts stood at 165 yuan/mtu against stainless steel scrap. In terms of the raw materials, the cash cost of cold-rolled stainless steel completely produced with stainless steel scrap was about 20,795 yuan/mt, while the cost with high-grade NPI stood at 19,857 yuan/mt. The prices of high-grade NPI are expected to remain stable this week, while the stainless steel scrap prices will stop declining following the stainless steel prices. In this case, the cost effectiveness of high-grade NPI against scrap stainless steel may be maintained.

Figure 30: Economic comparison of nickel raw materials

Source: SMM

Figure 31: Stainless steel inventory by series

Source: SMM

New Energy - Cobalt

Nickel and cobalt price review and forecast

Table 10: Nickel and cobalt price review and forecast

Product	Unit	Prices as of May 20	Weekly change	Price forecast for May 23-27	Change
Refined cobalt	\$/mt	48.2-52.0	↓ 5.4%	48.0-51.0	↓ 1.2%
Cobalt powder	10,000 yuan/mt	59.0-59.5	↓ 3.7%	58.0-59.0	↓ 1.3%
Cobalt intermediate products	10,000 yuan/mt	32.3-32.8	↓ 4.3%	31.5-32.0	↓ 2.5%
Cobalt sulphate	10,000 yuan/mt	9.60-10.0	↓ 4.9%	9.50-9.80	↓ 1.5%
Cobalt chloride	10,000 yuan/mt	11.6-12.0	↓ 4.5%	11.3-11.5	↓ 3.4%
Tricobalt tetraoxide (Co3O4)	10,000 yuan/mt	37.0-37.7	↓ 4.7%	36.0-37.0	↓ 2.3%
Battery-grade nickel sulphate	\$/mt	4.50-4.60	↓ 1.1%	4.45-4.55	↓ 1.1%

Source: SMM

Refined cobalt

The prices of refined cobalt declined sharply last week. Futures prices fell sharply last week as the overseas prices dropped and leading large factories lowered their ex-factory prices. Some traders held firm to the prices at first, but are expected to lower prices toward futures prices this week due to the sluggish demand.

Cobalt intermediate product

Intermediate product prices continued to fall last week, which was dragged down by the poor domestic demand for cobalt coupled with the reduction in overseas prices and discount coefficient.

Cobalt salt (cobalt sulphate and cobalt chloride)

Quotations of cobalt sulphate continued to decline last week. On the supply side, although the imports of raw material reduced, cobalt salt sales were low in previous months, leading to the sharp increases in finished product inventory of cobalt salt plants. With weak inquiries, some recycling material plants sold goods at low prices, driving down the overall prices.

Cobalt salt (tricobalt tetraoxide)

The domestic prices of Co3O4 dipped while the overseas cobalt-based raw material prices hovered at a high level, leading to great losses of finished products. On the demand side, due to the weak domestic demand and few orders, the downstream restocked according to orders and remained cautious in purchasing Co3O4. It is expected Co3O4 prices are likely to fall further.

Nickel sulphate

Nickel salt market remained muted last week. On the raw material side, MHP prices changed greatly, with the coefficient quoted by mainstream manufacturers down to around 70%. In addition, some scrap and crude nickel which take the prices of spot nickel as benchmark were affected by the high spot premiums. The decline in the absolute price narrowed despite the fall in coefficient. Raw material prices fell back and prices of battery-grade nickel sulphate followed the downward trend of costs. The average cost of salt plants fell. However, affected by different raw materials and differences in pricing methods, the costs of salt plants varied greatly. It is expected that while nickel prices hovered at a high level, the costs have not yet seen further decline driven by the falling raw material prices. The average cost of nickel salt plant is still difficult to fall to the level acceptable to buyers due to some high-priced raw material inventory.

New Energy- Lithium

Lithium price review and forecast

Table 11: Lithium price review and forecast

Product	Unit	Prices as of May 20	Weekly change	Price forecast for May 23-27	Change
Spodumene	\$/mt	4680-4830	-	4680-4830	-
Industrial-grade lithium carbonate	10,000 yuan/mt	41.6-43.5	↓ 0.2%	41.7-43.5	↑ 0.1%
Battery-grade lithium carbonate	10,000 yuan/mt	45.0-47.3	-	45.0-47.3	-
Lithium hydroxide (industrial grade)	10,000 yuan/mt	44.5-46.0	-	44.5-46.0	-
Lithium hydroxide (battery grade)	10,000 yuan/mt	46.0-47.5	-	46.0-47.5	-
Lithium hydroxide (battery-grade fine powder)	10,000 yuan/mt	46.8-48.3	-	46.8-48.3	-

Source: SMM

Lithium carbonate

Prices of battery-grade lithium carbonate stabilised last week, while prices of industry-grade lithium carbonate fluctuated within narrow range. In terms of market performance, inquiries were active last week. On the demand side, some small and medium-sized cathode manufacturers purchased a small amount of industry-grade lithium carbonate and quasi-battery-grade lithium carbonate on rigid demand in the second half of last week due to the low inventory, and the market confidence was boosted by the improvement of the pandemic in Jiangsu and Zhejiang. But the leading large factories have not yet purchased in large amounts. In addition, as the prices of lithium hydroxide remained firm, some high-nickel material factories and causticising plants increased the purchases of industry-grade lithium carbonate. Based on the current situation, some lithium salt plants raised the prices in the second half of last week. Inventory of traders dropped sharply due to the previous sell-off, and trader were reluctant to sell goods at present, arousing the market game.

Lithium hydroxide

Prices of lithium hydroxide were stable last week. The domestic and overseas market still diverged. Leading salt factories were not intended to lower the domestic spot prices because of the rising overseas prices. Some small and medium-sized factories which mainly focus on domestic trade sold goods at low prices with thin transactions. The downstream material factories remained wait-and-see in the spot market amid their low operating rates and purchases with long-term orders. There is still greater uncertainty about the orders in June and the downstream has not yet started to restock, holding an attitude of "no inquiry, no transaction" towards lithium hydroxide. In addition, some manufacturers mainly purchased industry-grade lithium carbonate for caustic processing in order to reduce procurement costs. The market was less active than lithium carbonate with the tug-of-war plaguing the market and prices remaining stable.

New Energy-Precursor and cathode active material

PCAM and CAM price review and forecast

Table 12: PCAM and CAM price review and forecast

Product	Unit	Prices as of May 20	Weekly change	Price forecast for May 23-27	Change
NMC 532 precursor (single crystal)	10,000 yuan/mt	14.3-14.5	↓ 2.7%	14.0-14.2	↓ 2.1%
NMC 622 precursor (power battery)	10,000 yuan/mt	15.3-15.5	↓ 1.9%	15.0-15.2	↓ 1.9%
NMC 811 precursor (power battery)	10,000 yuan/mt	16.3-16.6	↓ 1.8%	16.1-16.4	↓ 1.2%
NMC 532 materials	10,000 yuan/mt	34.4-35.3	↓ 0.1%	34.2-35.1	↓ 0.6%
NMC 622 materials	10,000 yuan/mt	36.5-37.4	↓ 0.1%	36.3-37.2	↓ 0.5%
NMC 811 materials	10,000 yuan/mt	40.3-41.1	↓ 0.2%	40.2-41.0	↓ 0.2%
LFP (power battery)	10,000 yuan/mt	15.2-15.9	-	15.2-15.9	-
LCO (4.4v domestic)	10,000 yuan/mt	53.0-53.5	↓ 2.0%	52.0-53.0	↓ 1.4%

Source: SMM

PCAM

Prices of precursor fell last week. In terms of raw material costs, cobalt and manganese salt prices continued to fall last week, while the precursor plants were less willing to purchase and the cost of precursors fell. Demand from domestic power and electronics sectors was still poor and the market recovery was slow. Coupled with high inventory in downstream material and battery enterprises, the downstream purchase was still low with thin market transactions.

NMC cathode materials

The prices of NMC cathode materials fell slightly last week. Falling precursor prices drove down the manufacturing cost. Because the actual demand from power market has not yet rebounded, coupled with weak E-bike battery and electronics demand, the average operating rate of material plants was more stable than before. Driven by the cost side, prices moved slightly downwards. It is expected that transaction prices may follow the downward trend of cost as the centralised procurement will begin this week.

LFP

LFP prices were stable last week. On the cost side, LFP prices were stable with a total of 450,000 yuan/mt. Although the downstream car enterprises and the battery plants resumed the production, the demand has not posted great improvement. The downstream enterprises purchased cautiously and the LFP market mainly delivered long-term orders. Few small orders were made on rigid demand. Prices are expected to stabilise in the future.

LCO

LCO prices slowly declined, with the cost of Co_3O_4 decreasing and prices of lithium carbonate stabilising. Demand in LCO market was still weak while LCO enterprises lowered the quotations. Order and shipments both reduced compared with the previous session. Orders from electronics sector dropped sharply in May. LCO prices are expected to decline further.

Appendix 1:

SMM Monthly Balance Sheet of Base Metal

		Fed-22	Mar-22	Apr-22E
Copper	Output	835.7	848.5	827.7
	Imports	268.1	280.0	250.0
	Exports	11.1	60.0	30.0
	Apparent consumption	1,092.7	1,068.5	1,047.7
	Inventory change	220.1	-131.3	25.0
	Actual consumption	872.6	1,199.8	1,022.7
	Growth in actual consumption	-4.7%	1.0%	-11.2%
Aluminium	Output	2,946.0	3,315.4	3,313.0
	Imports	-8.0	-10.0	20.0
	Exports			
	Apparent consumption	2,938.0	3,305.4	3,333.0
	Inventory change	391.0	-76.0	9.0
	Actual consumption	2,547.0	3,381.4	3,324.0
	Growth in actual consumption	-4.8%	3.0%	-5.5%
Zinc	Output	458.7	501.3	503.9
	Imports	5.5	5.0	5.0
	Exports	0.2	1.0	1.0
	Apparent consumption	464.0	505.3	507.9
	Inventory change	0.0	0.0	0.0
	Actual consumption	341.3	515.5	520.0
	Growth in actual consumption	-8.7%	-6.8%	-5.7%
Lead	Output	237.0	263.9	269.1
	Imports	1.5	3.0	3.0
	Exports	3.0	17.0	12.0
	Apparent consumption	514.6	501.3	540.1
	Inventory change	15.5	-13.8	29.2
	Actual consumption	499.1	515.1	510.9
	Growth in actual consumption	17.0%	-18.5%	-10.6%
Nickel	Output	12.9	12.6	12.9
	Imports	15.1	8.0	8.0
	Exports	0.4	4.3	0.6
	Apparent consumption	27.6	16.3	20.3
	Inventory change	3.7	0.9	-0.3
	Actual consumption	23.9	15.4	20.6
	Growth in actual consumption	28.5%	-30.5%	-30.3%

Source: SMM

SMM also provides

SMM Regular Reports (weekly & monthly)

China Base Metal Briefing (weekly)

China Copper Weekly

China Aluminium Weekly

China Zinc Weekly

China Lead Weekly

China Nickel Weekly

China Cobalt & Lithium Weekly

China Steel Briefing

China Rare Earth Weekly

China Iron Ore Weekly Monitor

China Copper Monthly

China Aluminium Monthly

China Zinc Monthly

China Lead Monthly

China Nickel Monthly

China Manganese Monthly

China New Energy Monthly

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China Nickel Cobalt Lithium Industry Chain Annual Report 2020-2023

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China Rare Earth Industry Chain Annual Report 2020-2023

China Iron Ore & Steel Industry Chain Report 2020-2023

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