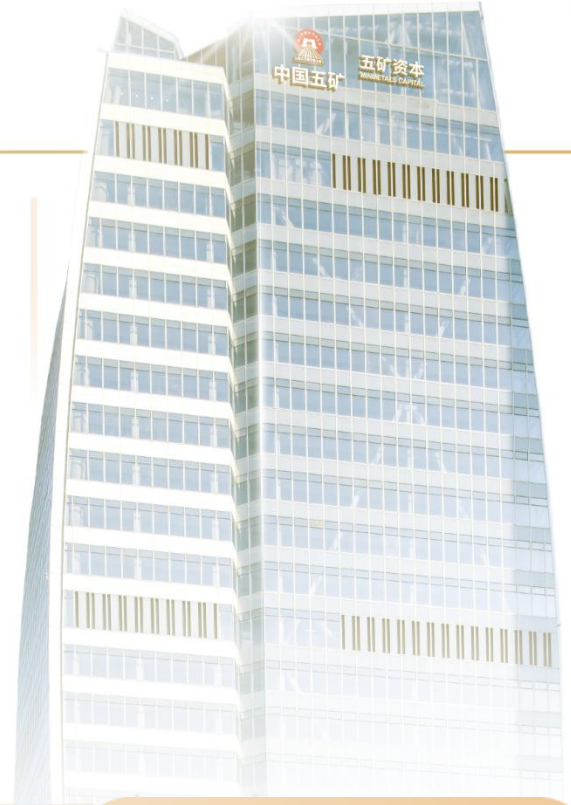
中国五矿 五矿期货有限公司



Beware of macro-driven downside risks

Copper Semi-Annual Report

June 6, 2025

Wu Kunjin (Non-Ferrous Metal Group)

0755-23375135 wukj1@wkqh.cn Futures Practice Qualification: F3036210 Investment Consulting Qualification: Z0015924

CONTENTS

01

Semi-Annual Assessment & Strategy Recommendation

Semi-Annual Assessment & Strategy Recommendation

- **Supply**: In Q1 2025, output of sampled overseas copper mines grew by approximately 1.1% YoY, with growth expected to accelerate in H2. Year-to-date domestic electrolytic copper output has surged. But as overseas copper smelting capacity commissioning in H2, raw material availability is expected to decline domestically, causing refined copper output growth to deaccelerate—though full-year growth remains projected at a high level. Overseas output is set to rebound with the resumption of Freeport's Maynar copper smelter in Indonesia and the commissioning of Adani's copper smelter in India.
- **Demand**: Driven by export front-loading, photovoltaic pre-installation surges and reduced scrap copper substitution, domestic electrolytic copper apparent consumption from March to May 2025 significantly exceeded expectations. However, partial demand front-loading exists so H2 copper consumption growth is likely to decelerate. Overseas copper consumption growth is primarily from Asia, while demand in the Americas and Europe remains relatively stable. Against the backdrop of uncertain global trade dynamics in H2, copper consumption is expected to face certain pressure.
- **Macro**: U.S. "import rush" has overdrawn future demand, pressuring H2 import growth. Expectations for Fed policy easing have been delayed, straining U.S. financial market liquidity—a negative for copper sentiment. Domestic economic growth relies more on government-led stimulus.

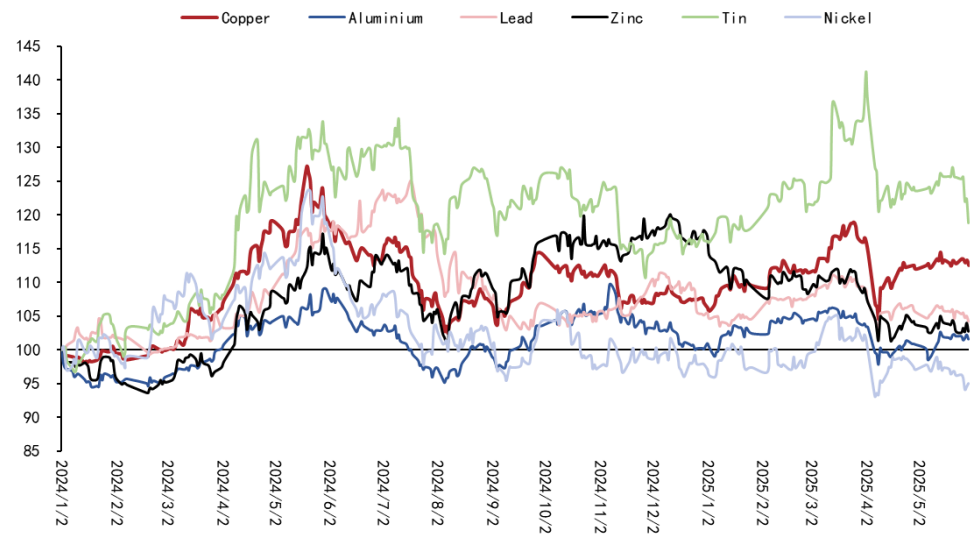
Semi-Annual Assessment & Strategy Recommendation

- **Balance**: As copper ore supply rebounds in H2 2025, the supply shortage of copper concentrates is expected to narrow. Both refined copper supply and demand are projected to decline in H2 2025 compared to Q2, keeping global copper supply and demand relatively balanced. However, considering macro pressures, the probability of demand falling short of expectations is higher.
- **Price Outlook**: With unstable global trade dynamics in H2, intensified demand-side pressure after the U.S. "import rush", and delayed expectations for U.S. monetary policy easing combined with tightening financial market liquidity, copper prices will face shocks. The tension in copper ore raw material supply may ease in H2, and slowing downstream consumption growth will weaken price support. As overall macro risks may amplify, vigilance is needed against the risk of sharper-than-expected copper price corrections. Capital flows also indicate that overseas market bullish sentiment on copper has significantly cooled by mid-year. **Trading Advice**: Increase the proportion of sell hedging after rallies (above $9,700/ton), and take calendar spread long positions after price declines.

02

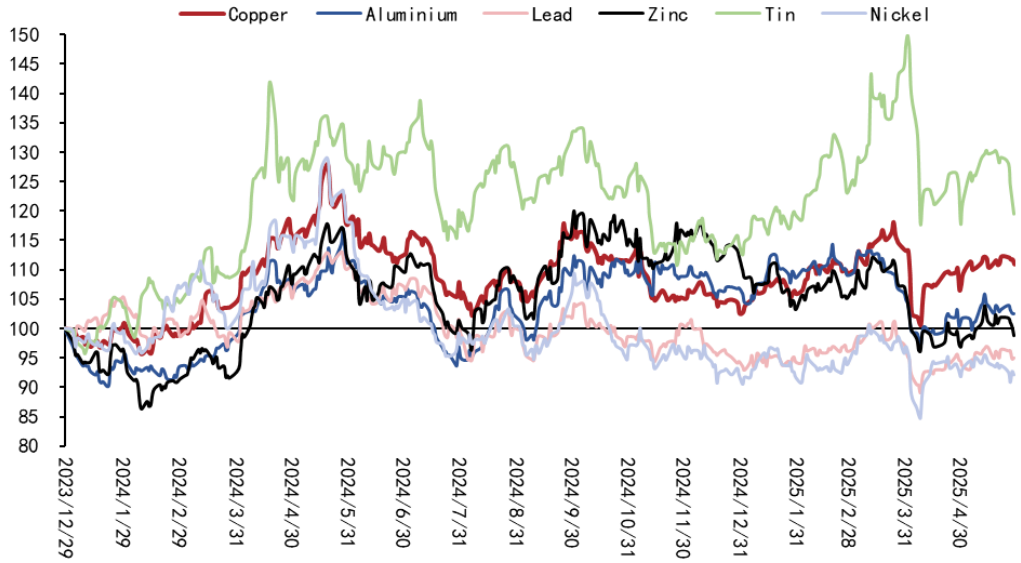
Market Review

Figure 1: SHFE Base Metals Price Index



Sources: WIND, Minmetals Futures

Figure 2: LME Base Metals Price Index

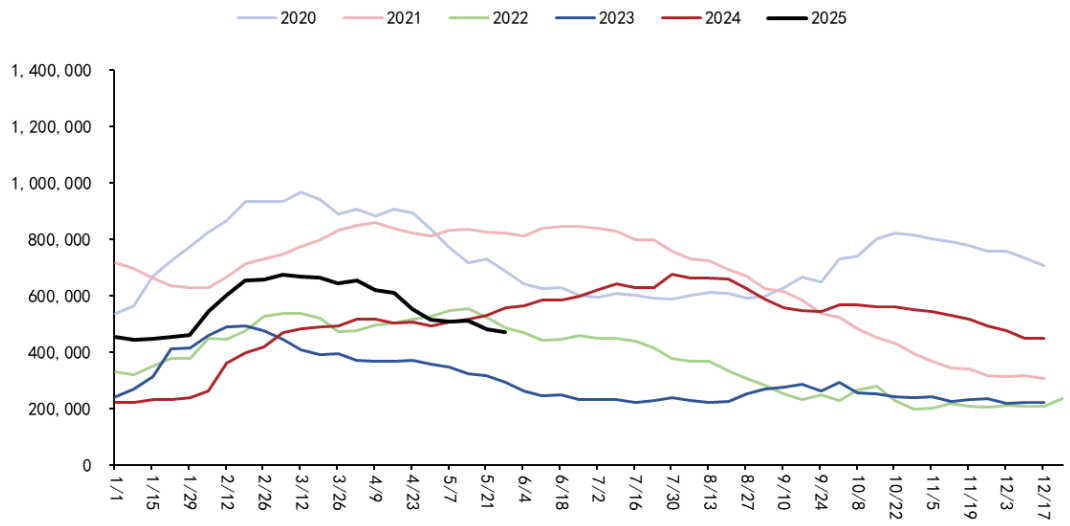


Sources: WIND, Minmetals Futures

- Since the start of this year, copper prices have trended in an N-shaped trajectory. Driven by factors such as the continuous decline in copper concentrate TC/RC charges and the U.S. launch of the Section 232 investigation into copper, prices rallied unilaterally at the beginning of the year. From late March to early April, prices saw a sharp correction due to U.S. "reciprocal tariffs", before rebounding since mid-April. Overall, copper prices have maintained their strong performance among non-ferrous metals since 2024.
- By end-May, SHFE copper main contract rose 5.2% from year-start to 77,600 yuan/ton, while the LME 3-month copper contract gained 8.2% to $9,497/ton.

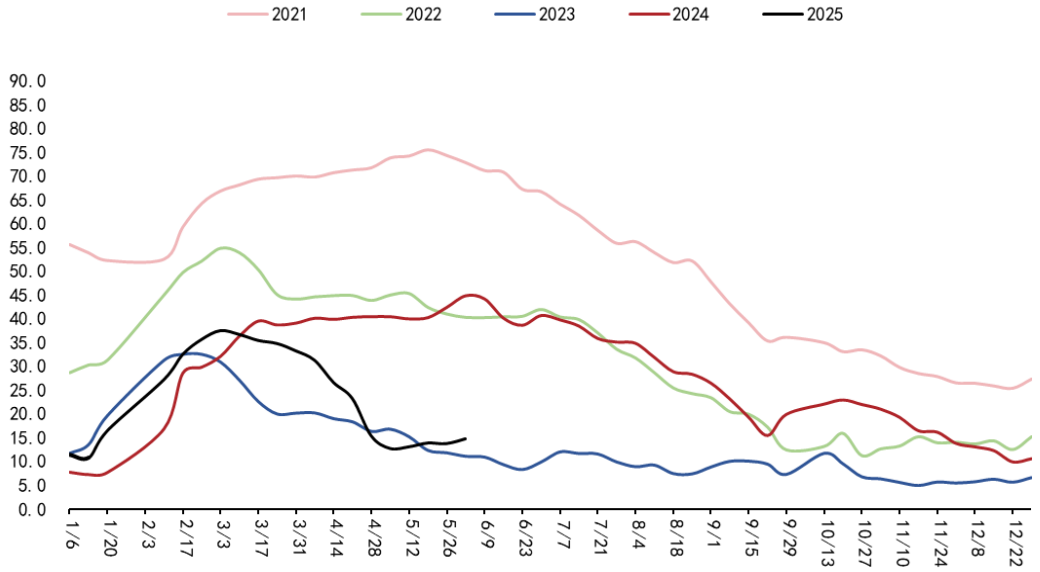
Inventory

Figure 3: Inventory of Three Major Exchanges and Bonded Area (ton)



Sources: SHFE, LME, WIND, MYSTEEL, Minmetals Futures

Figure 4: China's Social Inventory of Electrolytic Copper

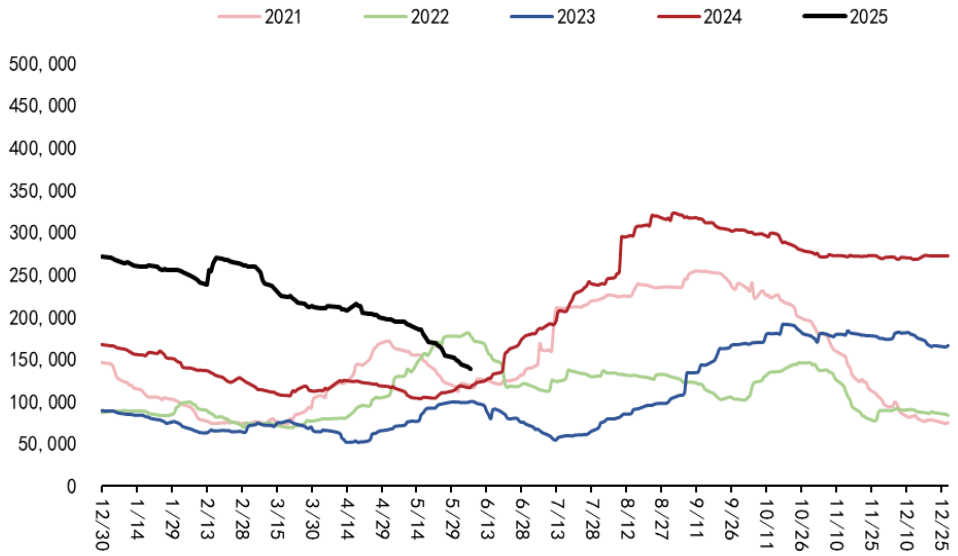


Sources: SMM, Minmetals Futures

- By end-May, total inventories across the three major exchanges plus Shanghai bonded zones amounted to approximately 472,000 tons, up 24,000 tons from the start of the year. Supply was relatively surplus in Q1, shifting to a shortage in Q2.
- China's social inventories have increased by about 34,000 tons since the beginning of the year, with current total inventories at around 139,000 tons—an absolutely low level.
- Shanghai bonded zone inventories rebounded from early-year lows, rising by 38,000 tons to 53,000 tons.

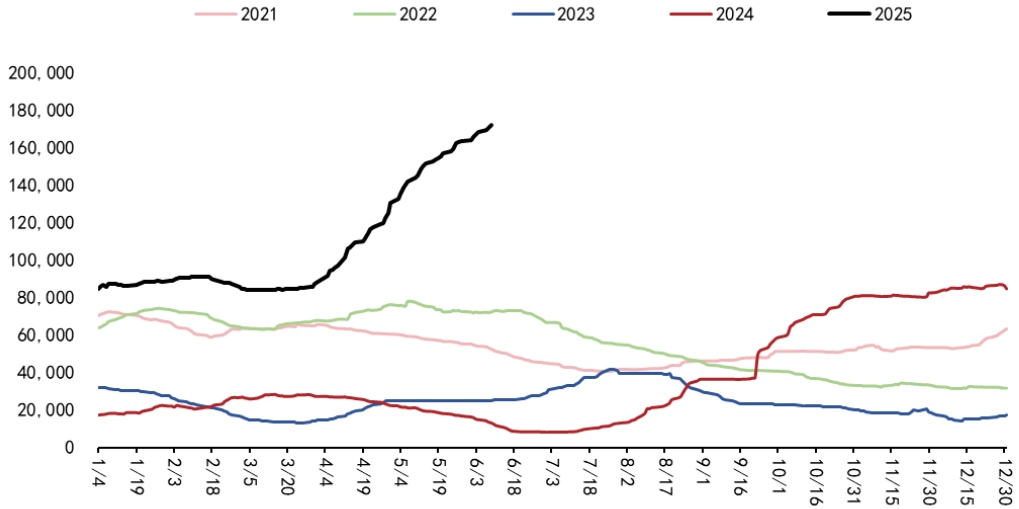
Inventory

Figure 5: LME Copper Inventory



Sources: WIND, Minmetals Futures

Figure 6: COMEX Copper Inventory

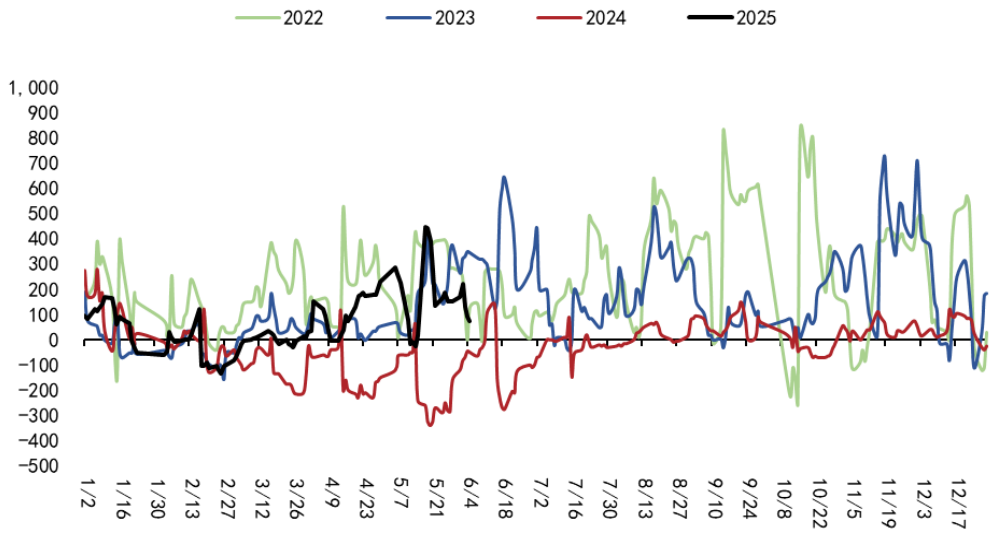


Sources: WIND, Minmetals Futures

- LME inventories trended lower with volatility, standing at 150,000 tons at May-end—about 120,000 tons below the start of the year. The U.S. Section 232 investigation into copper has led to increased warehouse cancellation and withdrawal volumes at LME.
- COMEX inventories declined with volatility before April, then began continuous accumulation from early April, reaching about 164,000 tons at May-end—up 77,000 tons from the start of the year. Pressure remains for hidden inventories to become explicit in the current and near future periods.

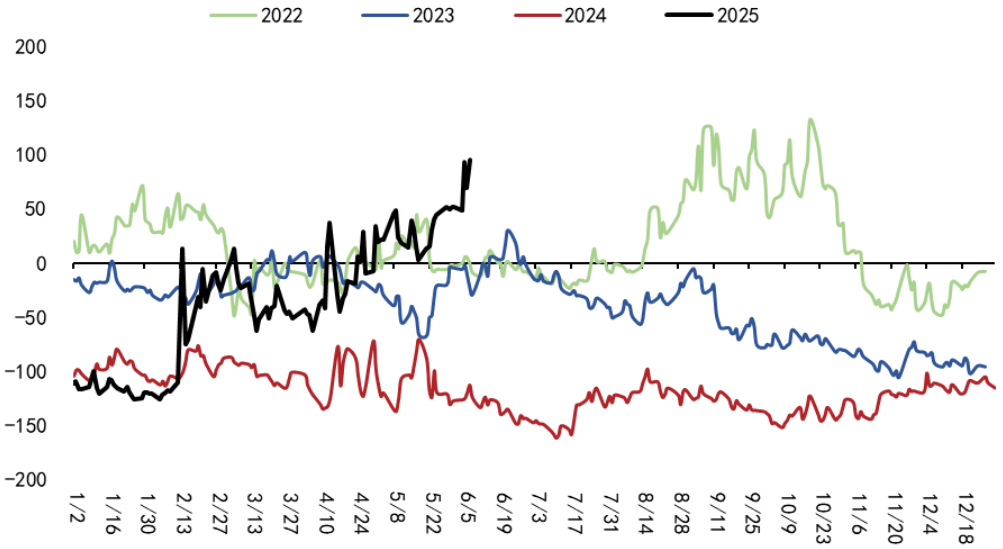
Spot Basis

Figure 7: Spot Basis in East China Region



Sources: SMM, Minmetals Futures

Figure 8: LME Cash/3M Premium/Discount

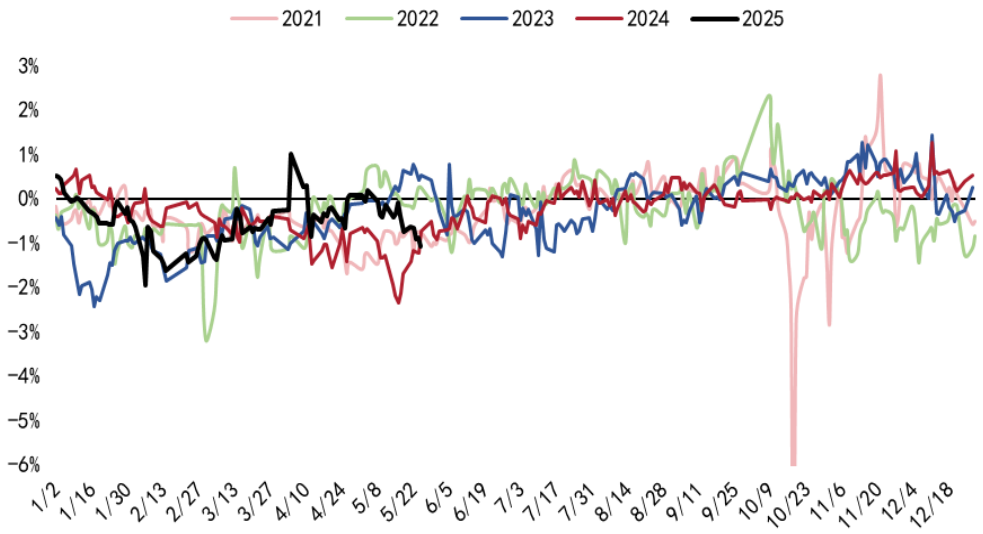


Sources: WIND, Minmetals Futures

- Since the start of the year, the spot basis in Shanghai first fluctuated then strengthened, remaining relatively high since April—reflecting persistent tightness in the spot market.
- The LME Cash/3M spread was weak before mid-February, then strengthened continuously afterward, with spot prices trading at a premium to 3-month contracts in late May. The spot strength was driven by reduced registered warrants and sustained high cancelled warrants.

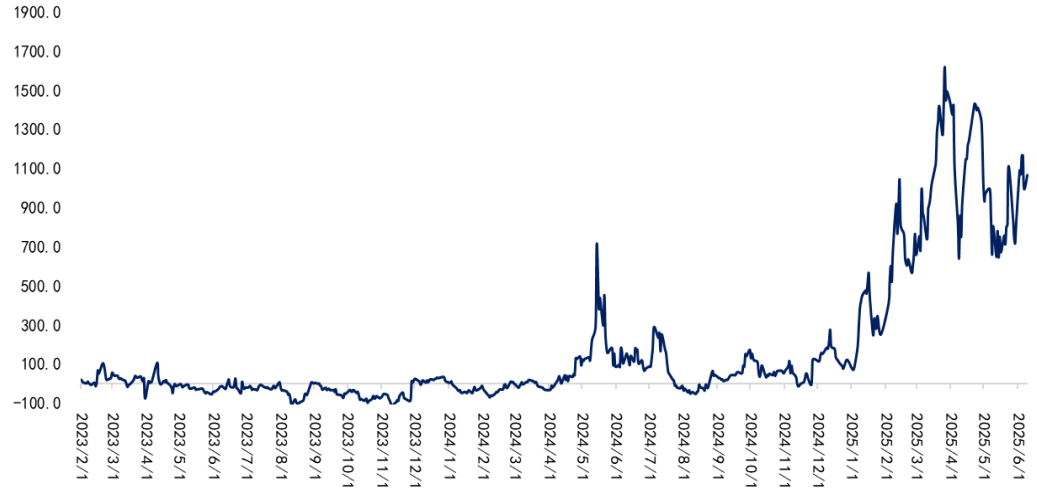
Intermarket Price Spread

Figure 11: Profit and Loss Ratio of Shanghai Copper Spot Relative to LME Copper Imports



Sources: WIND, SMM, Minmetals Futures

Figure 12: COMEX-LME Copper Price Spread (USD/ton)



Sources: WIND, Minmetals Futures

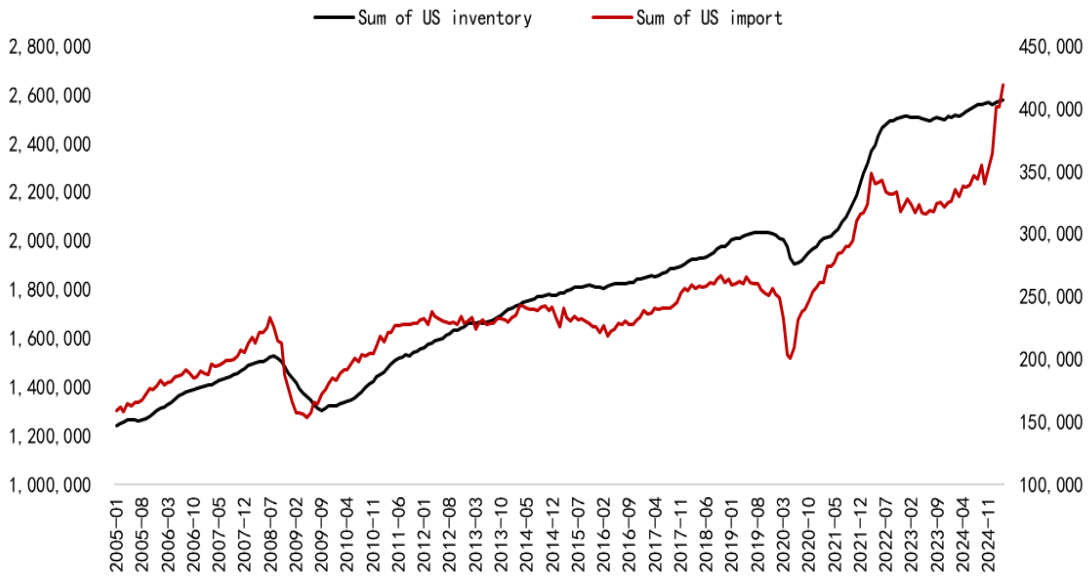
- The SHFE-LME spread first narrowed then widened since the start of the year, with the processing trade export window briefly opening during the period. Recently, spot import losses for SHFE copper have expanded again.
- Under expectations of U.S. tariffs on copper, the COMEX-LME spread has continuously widened since the start of the year, reaching above $1,600/ton at the end of March before falling to around $820/ton by the end of May.

03

Macroanalysis

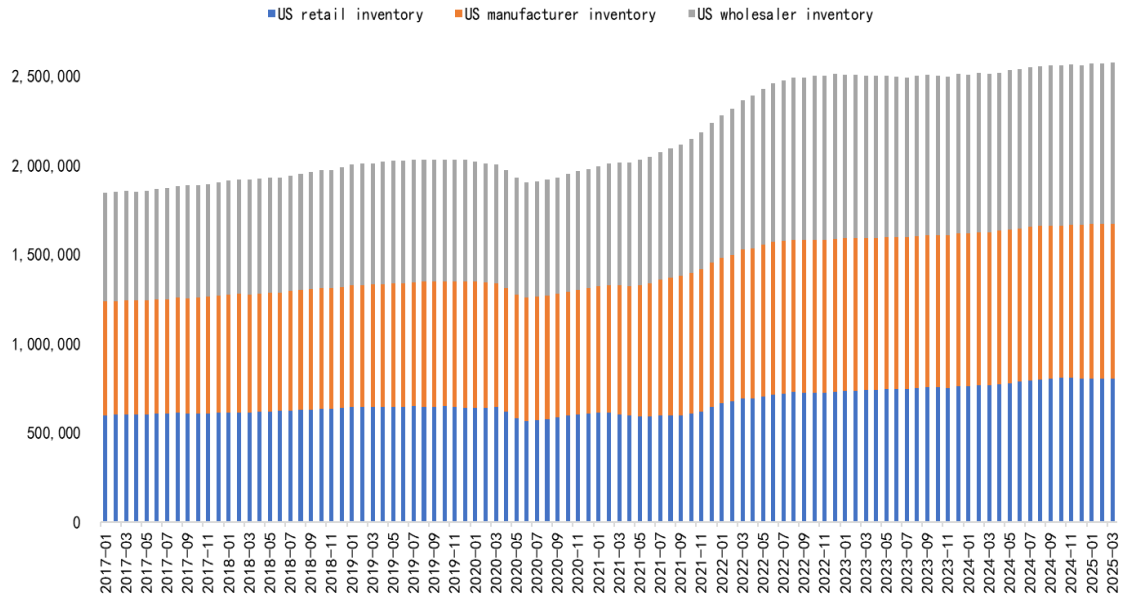
Increased Invisible Inventory Caused by U.S. "Import Rush"

Figure 13: U.S. Monthly Import Value and Total Inventory (Million USD)



Sources: WIND, Minmetals Futures

Figure 14: U.S. Inventory Classification (Million USD)

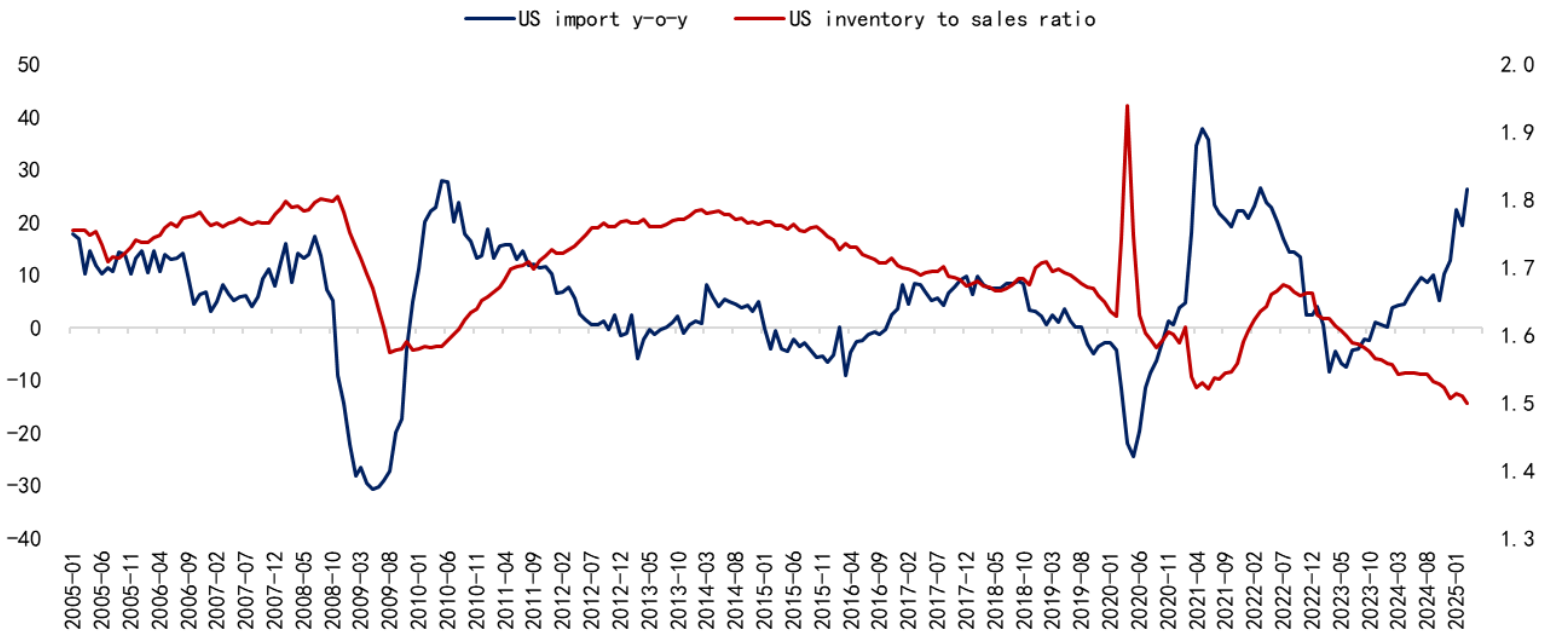


Sources: WIND, Minmetals Futures

- Since November 2024, U.S. import values have grown significantly, with total imports from January to March 2025 reaching $1,221.3 billion—an increase of $230.67 billion (+23.2%) YoY.
- Meanwhile, total U.S. inventories only edged up, with the import surge not being reflected in retailer, manufacturer, or wholesaler stockpiles. This suggests a large amount of hidden inventories exist in the U.S.

Invisible Inventory Leads to Decline in U.S. Import Demand Expectations

Figure 15: U.S. Import Value YoY and U.S. Inventory-Sales Ratio

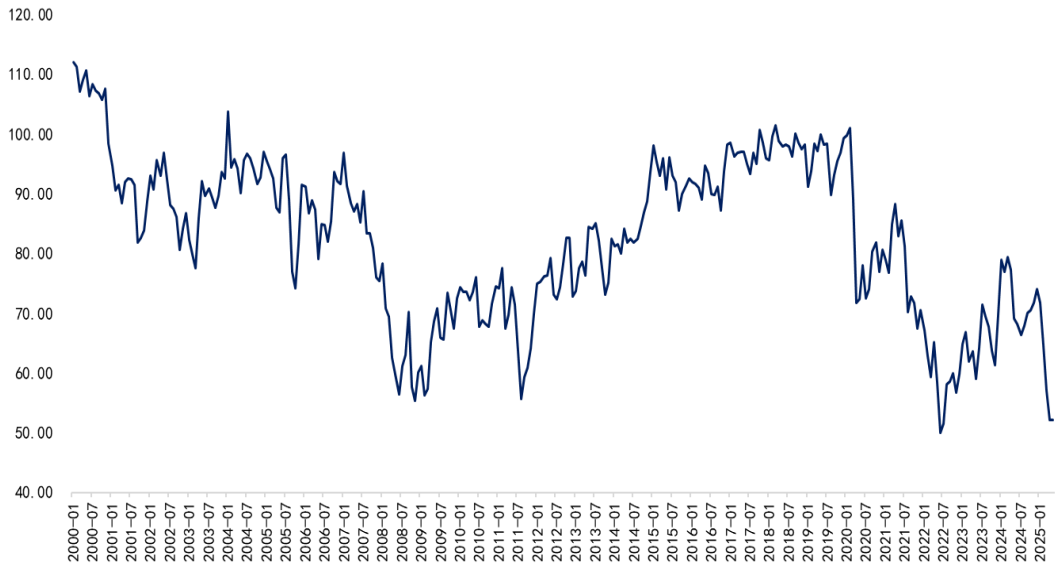


Sources: WIND, Minmetals Futures

- Due to the presence of hidden inventories, the inventory-to-sales ratio (measured by inventory/U.S. personal consumption expenditure) is underestimated.
- This ratio is typically regarded as a leading indicator for imports—both an upward trend (above a certain level) and historically high ratios have triggered slowdowns in import growth. Going forward, as the U.S. inventory-to-sales ratio rebounds, pressure for declining imports will intensify (despite expectations of stable imports in May-June due to the postponement of "reciprocal tariffs"), exerting significant downward pressure on extra-U.S. demand and posing risks to copper prices.

Increased Risk of U.S. Economic Slowdown

Figure 16: U.S. Consumer Confidence Index



Sources: WIND, Minmetals Futures

Figure 17: Fed 1st Interest Rate Cut Highly Likely in September 2025

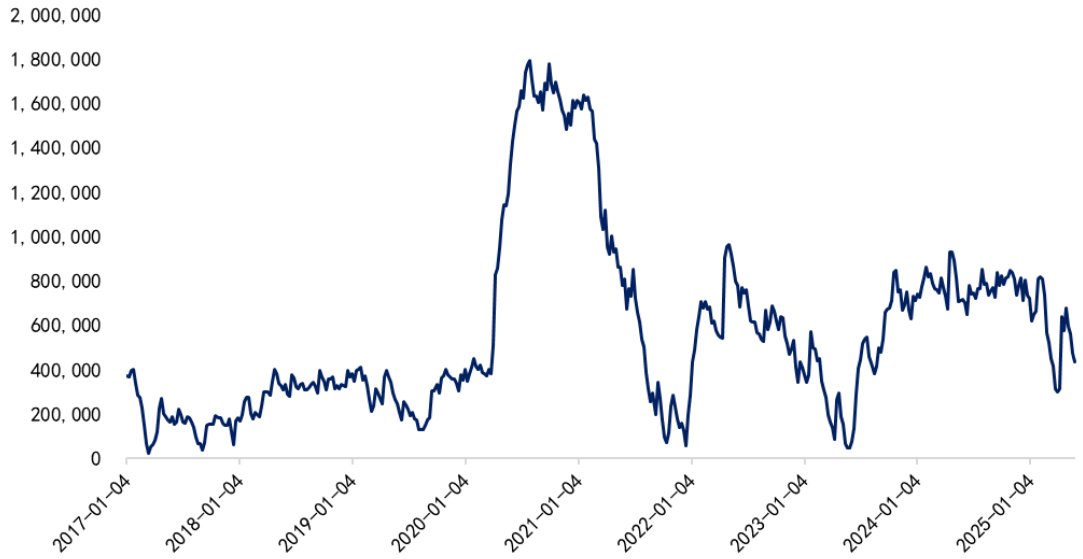
MEETING DATE	200-225	225-250	250-275	275-300	300-325	325-350	350-375	375-400	400-425	425-450
2025/6/18					0.0%	0.0%	0.0%	0.0%	5.4%	94.6%
2025/7/30	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	25.7%	73.1%
2025/9/17	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	17.3%	56.9%	25.0%
2025/10/29	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	8.9%	36.8%	41.2%	12.7%
2025/12/10	0.0%	0.0%	0.0%	0.0%	0.3%	6.8%	30.0%	40.1%	19.7%	3.1%
2026/1/28	0.0%	0.0%	0.0%	0.1%	2.7%	15.3%	33.7%	32.6%	13.6%	2.0%
2026/3/18	0.0%	0.0%	0.1%	1.7%	10.3%	26.3%	33.0%	21.2%	6.6%	0.8%
2026/4/29	0.0%	0.0%	0.4%	3.7%	14.1%	27.9%	30.2%	17.7%	5.2%	0.6%
2026/6/17	0.0%	0.2%	1.9%	8.5%	20.4%	29.0%	24.5%	12.0%	3.1%	0.3%
2026/7/29	0.0%	0.5%	3.1%	10.6%	22.0%	28.2%	22.2%	10.4%	2.6%	0.3%
2026/9/16	0.2%	1.2%	4.9%	13.4%	23.5%	26.7%	19.4%	8.5%	2.0%	0.2%

Sources: CME, Minmetals Futures

- The current U.S. consumer confidence index is near a historical low, with personal consumption expenditure likely to weaken below expectations and risks of economic slowdown increasing.
- On monetary policy, the impact of tariffs on inflation prospects remains uncertain. Combined with the backdrop of non-obvious weakening in U.S. employment data, the expected timing of the Fed's first rate cut this year is September. The medium-to-short-term high-interest-rate environment will continue to hurt the U.S. economy.

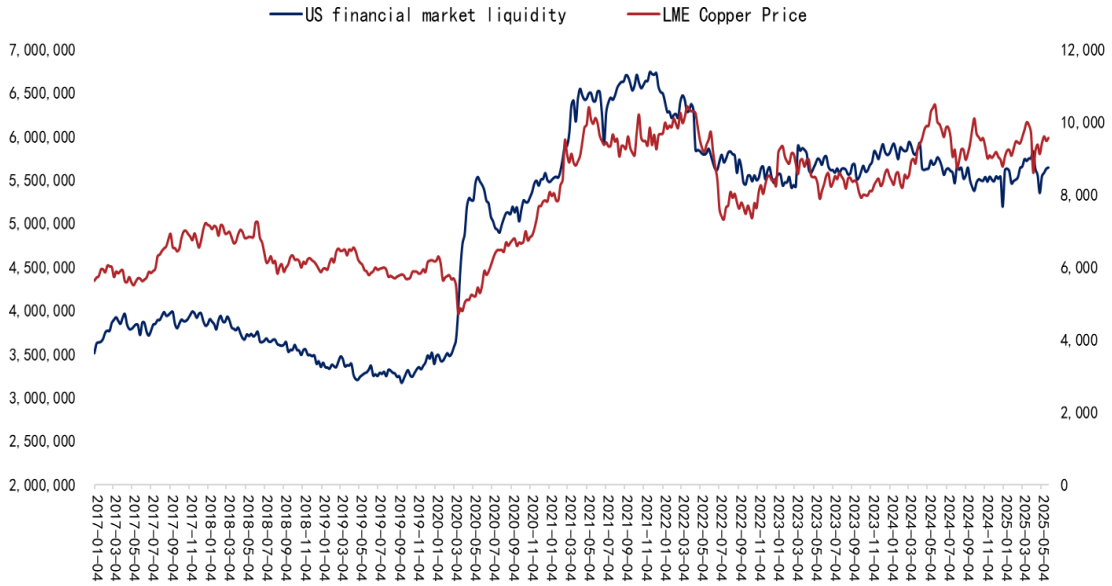
Shrinking Pressure on U.S. Financial Market Liquidity

Figure 18: Federal Reserve TGA Account Balance (Million USD)



Sources: WIND, Minmetals Futures

Figure 19: U.S. Financial Market Liquidity and LME Copper Price

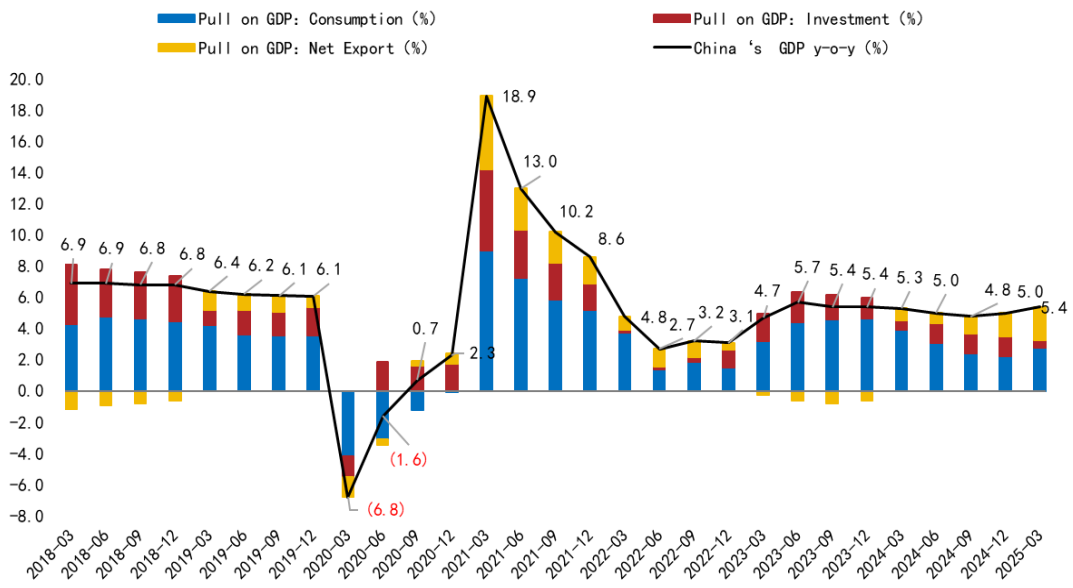


Sources: WIND, Minmetals Futures

- After Trump's re-inauguration, the U.S. fiscal deficit situation has not improved, and the U.S. Treasury issuance remains difficult.
- The Fed's TGA (Treasury General Account) has been continuously drawn down recently, with the risk of gradual depletion. Once the TGA is exhausted, U.S. financial market liquidity will face significant "drainage" pressure, serving as another risk source for copper prices.

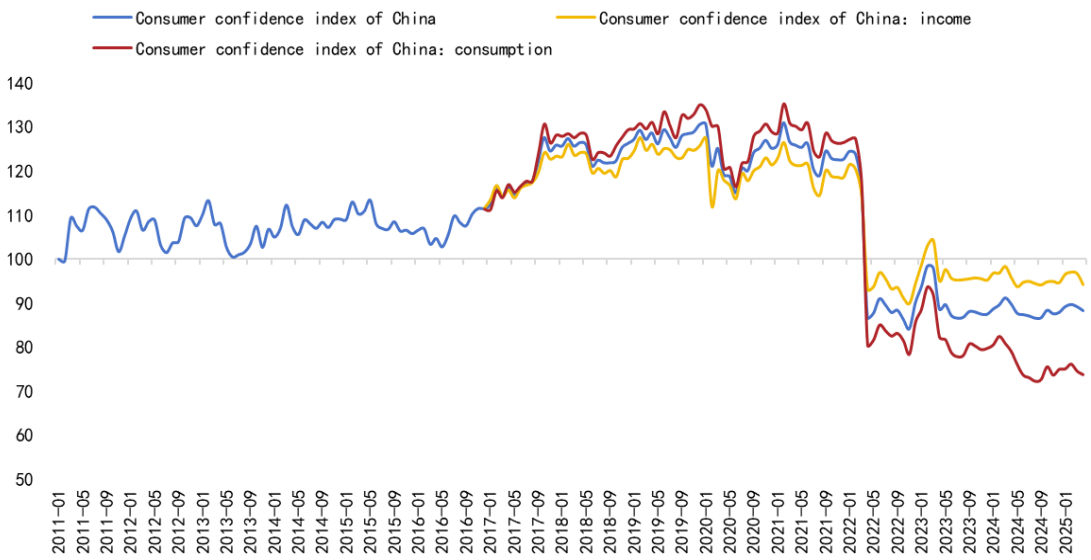
Domestic Economic Growth Is More Driven by Government-Led Efforts

Figure 20: Composition of China's GDP Growth



Sources: WIND, Minmetals Futures

Figure 21: China Consumer Confidence Index



Sources: WIND, Minmetals Futures

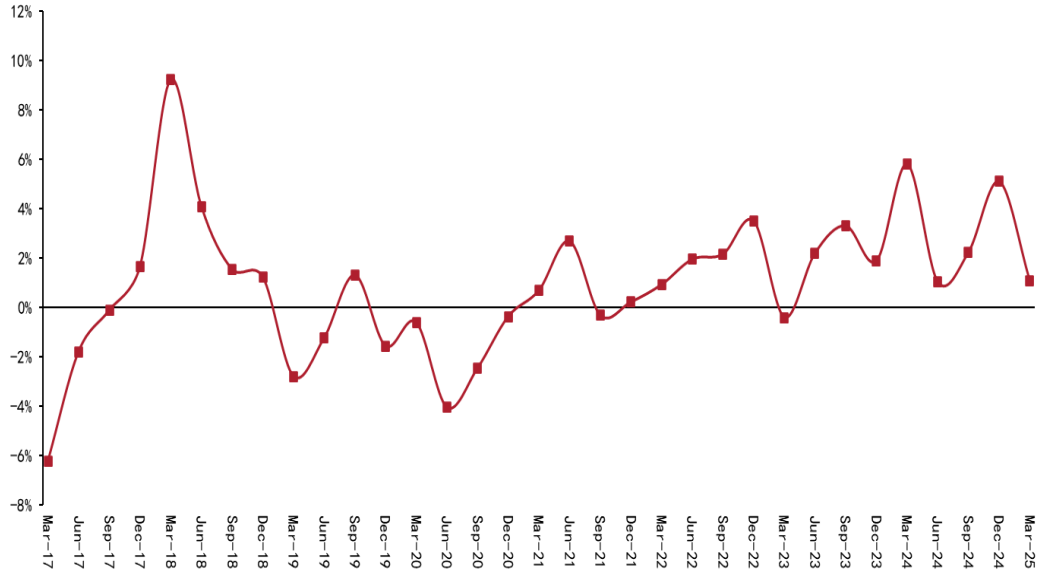
- In Q1 2025, China's GDP growth exceeded expectations, with net exports and consumption contributing significantly to the expansion. Looking ahead, starting from Q3, fluctuations in global trade dynamics are expected to add pressure on exports' contribution to economic growth.
- Consumption and employment expectations require further domestic policy stimulus, with economic growth momentum in H2 likely to rely more on government-led stimulus.

04

Supply

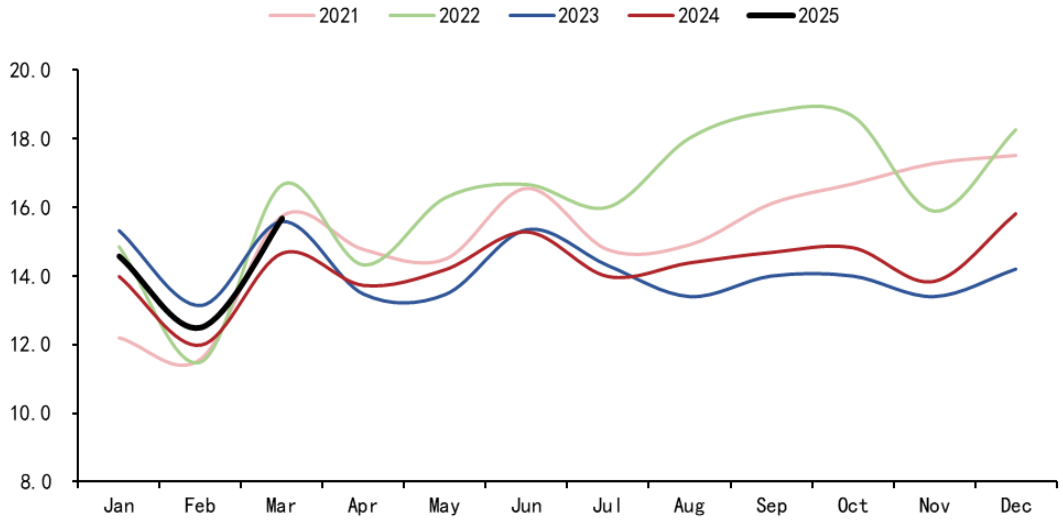
Copper Mines

Figure 22: Copper Mine Output from Overseas Sample Mines YoY Growth Rate



Sources: Press Release, Minmetals Futures

Figure 23: China's Copper Concentrate Output

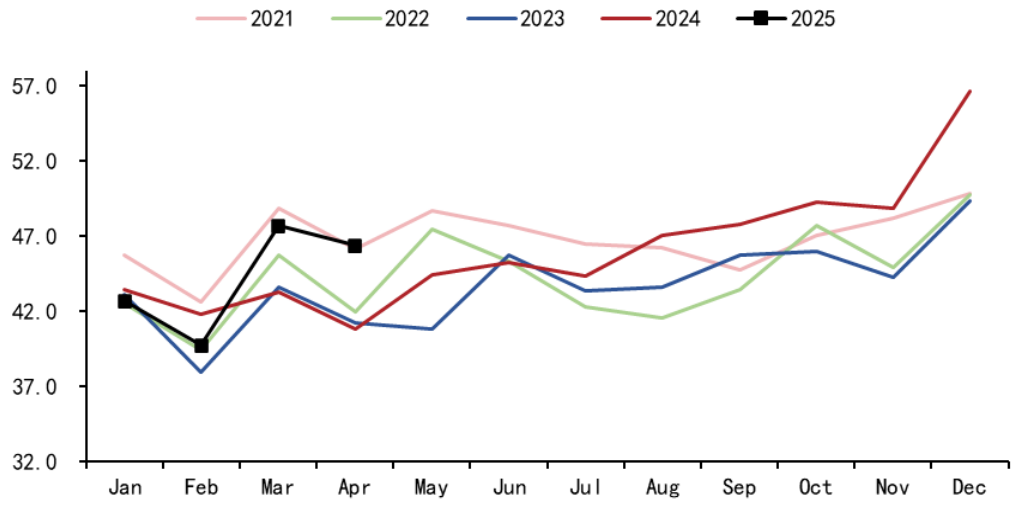


Sources: SMM, Minmetals Futures

- In Q1 2025, copper ore output from sampled overseas mines grew by approximately 1.1% YoY, an absolute increase of about 50,000 tons. Annual production guidance from major miners has been slightly raised, with copper ore supply increments expected to accelerate in H2. Full-year increments are estimated at 350,000 to 400,000 tons.
- China's Q1 copper concentrate output increased by about 21,000 tons YoY, with modest full-year growth expected.

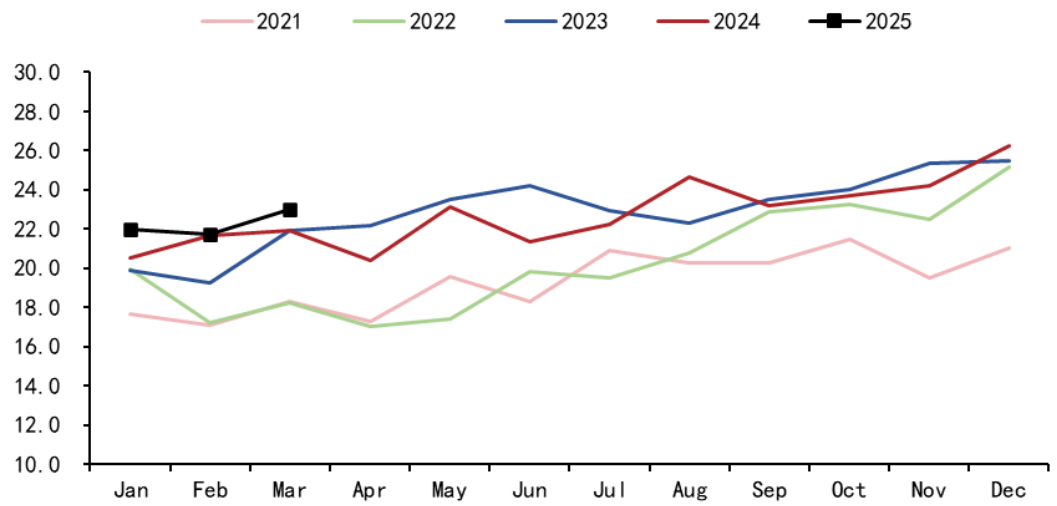
Copper Mines

Figure 24: Copper Output in Chile



Sources: Cochilco, Minmetals Futures

Figure 25: Copper Output in Peru

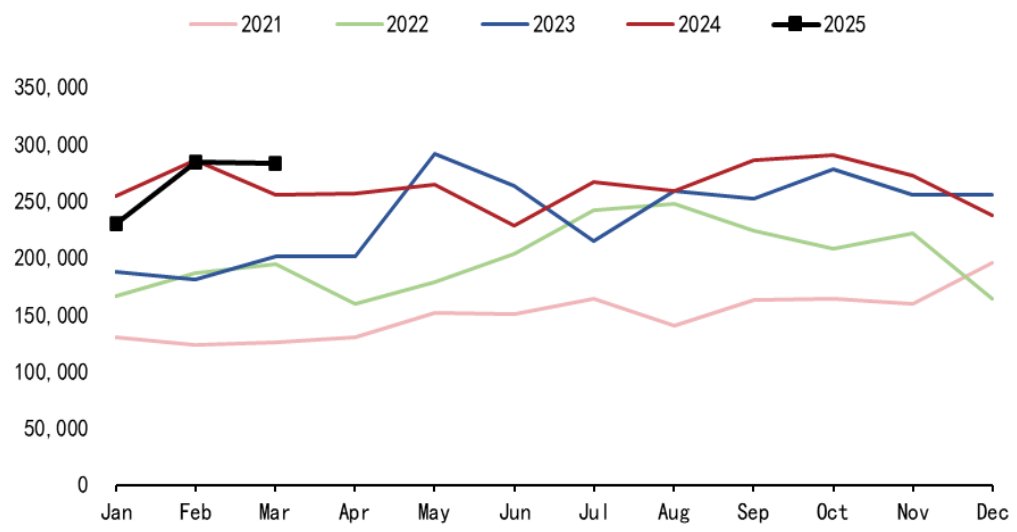


Sources: Ministry of Mines of Peru, Minmetals Futures

- Chile, the world's largest copper producer, has returned to growth, with cumulative output from January to April 2025 reaching 1.765 million tons—up 61,000 tons YoY. The growth was primarily driven by higher output from Codelco and increased production at mines such as Escondida.
- From January to March 2025, Peru's copper ore output totaled approximately 667,000 tons, an increase of about 26,000 tons YoY, including 96,000 tons from Las Bambas copper mine under Minmetals Resources—up 71% YoY.

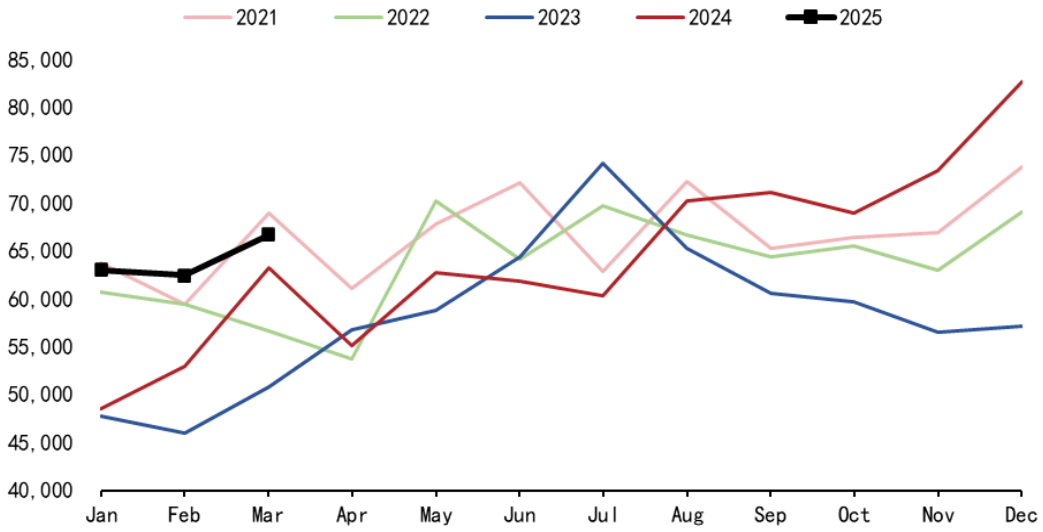
Copper Mines

Figure 26: Copper Output in DRC



Sources: DRC Official Website, Minmetals Futures

Figure 27: Copper Output in Zambia

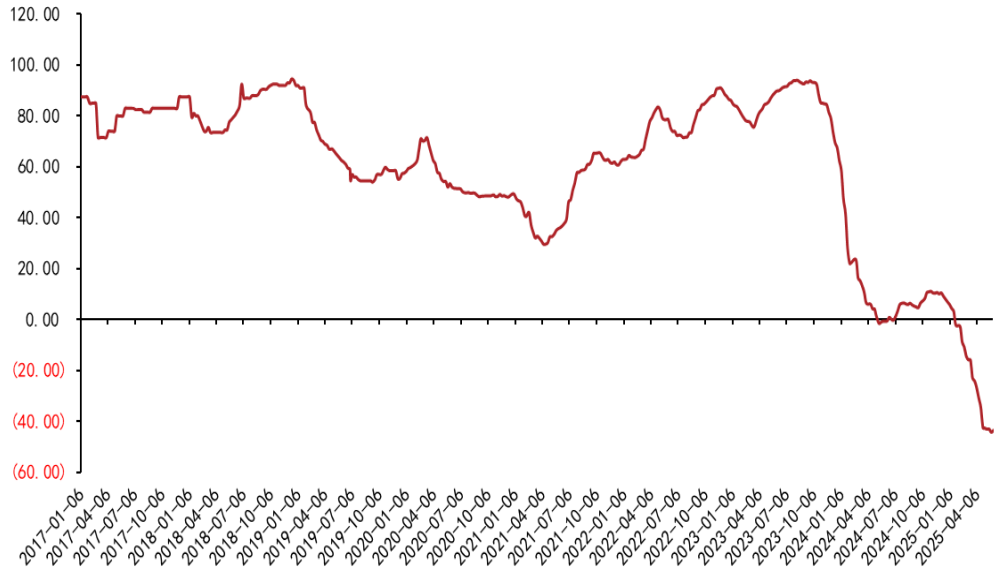


Sources: Zambia Official Website, Minmetals Futures

- From January to March 2025, copper ore output in the Democratic Republic of Congo (DRC) saw only marginal growth, with annual output growth expected to decline significantly compared to previous years. Meanwhile, the impact of mine seismic issues at Zijin Mining's Kamoa-Kakula copper mine on production remains uncertain.
- Copper output in Zambia has rebounded since H2 2024, with growth continuing from January to March this year driven by increased production at small mines.

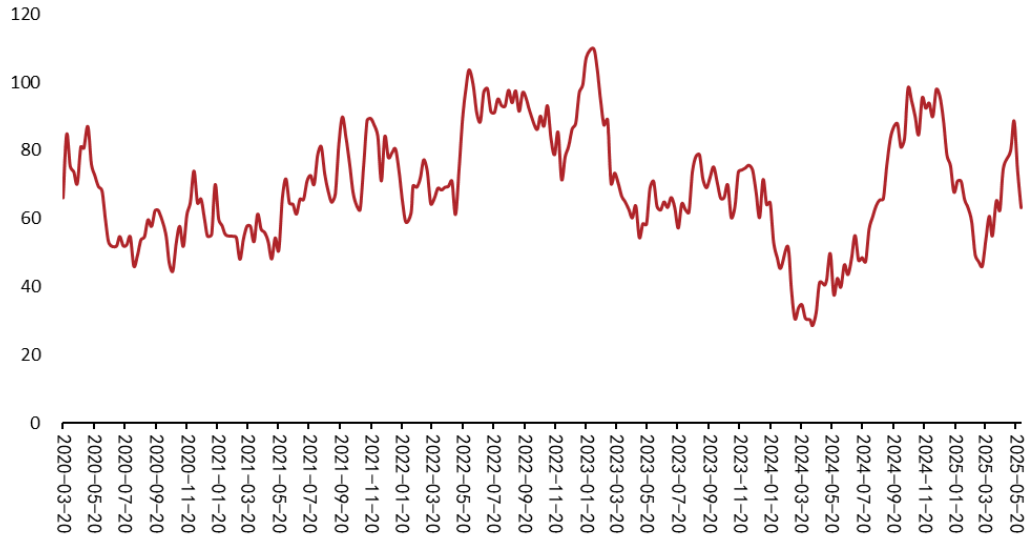
Copper Mines

Figure 28: Spot Treatment Charge (TC) for China's Imported Copper Concentrate (USD/ton)



Sources: SMM, Minmetals Futures

Figure 29: Copper Concentrate Inventory at China's Major Ports (10k tons)

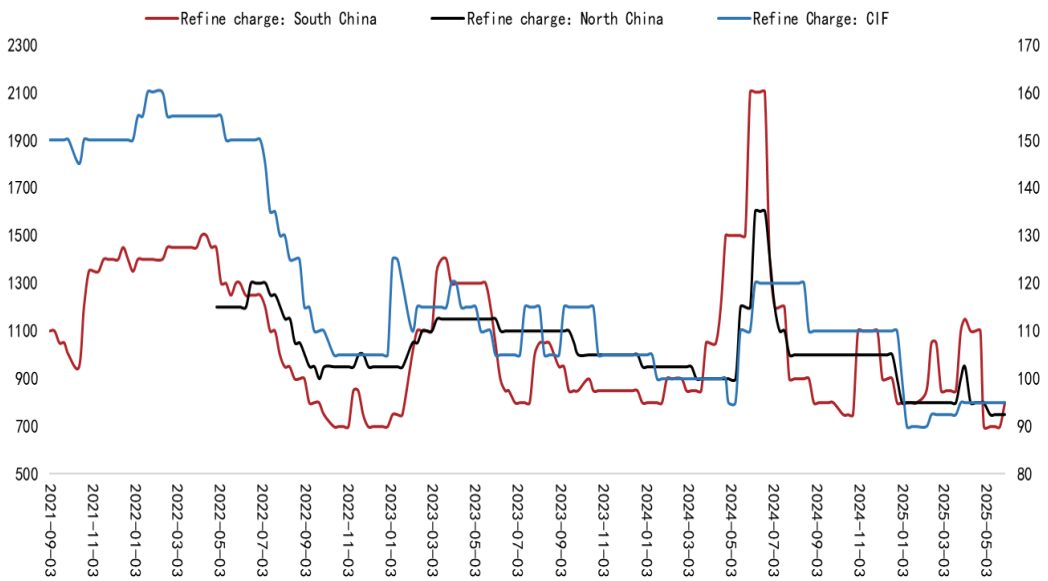


Sources: MYSTEEL, Minmetals Futures

- Against the backdrop of slow copper ore supply growth and robust smelting demand, the supply-demand relationship for copper concentrates remained tight in H1, with spot TC (treatment charges) hitting new lows—quoting at $43.6/ton by the end of May.
- While TC shows signs of stabilization in the short run, it is still expected to face pressure from annual perspective.
- Since the start of the year, domestic port copper concentrate inventories first rose then fell, with spot supply at ports slightly improving, though sustainability remains to be seen.

Copper Smelting

Figure 32: Processing Charges for Domestic and Imported Blister Copper (yuan/ton, USD/ton)



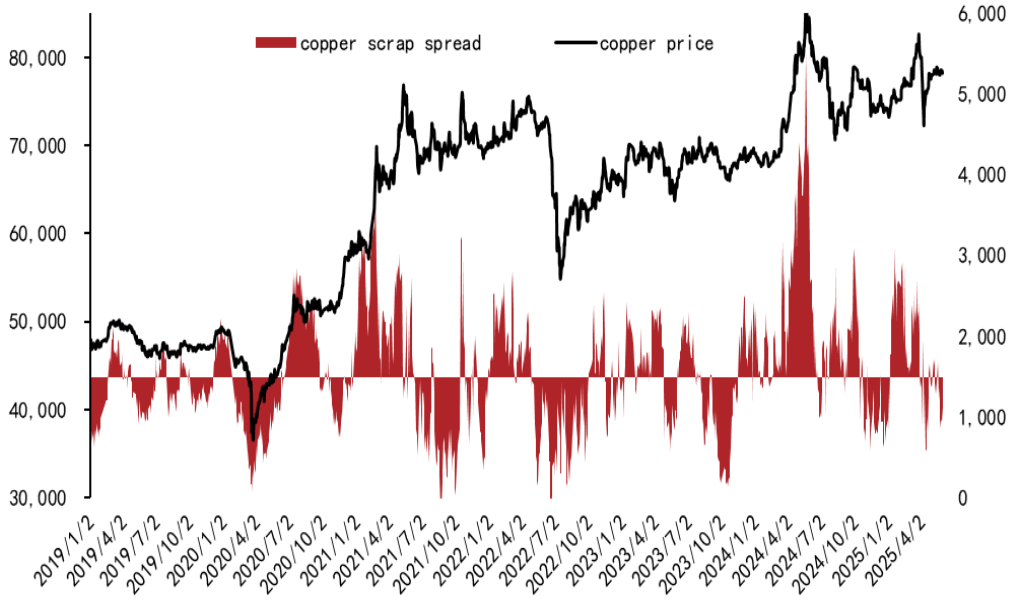
Sources: SMM, Minmetals Futures

Figure 33: Smelting Acid Price in East China Region (yuan/ton)

Sources: WIND, Minmetals Futures

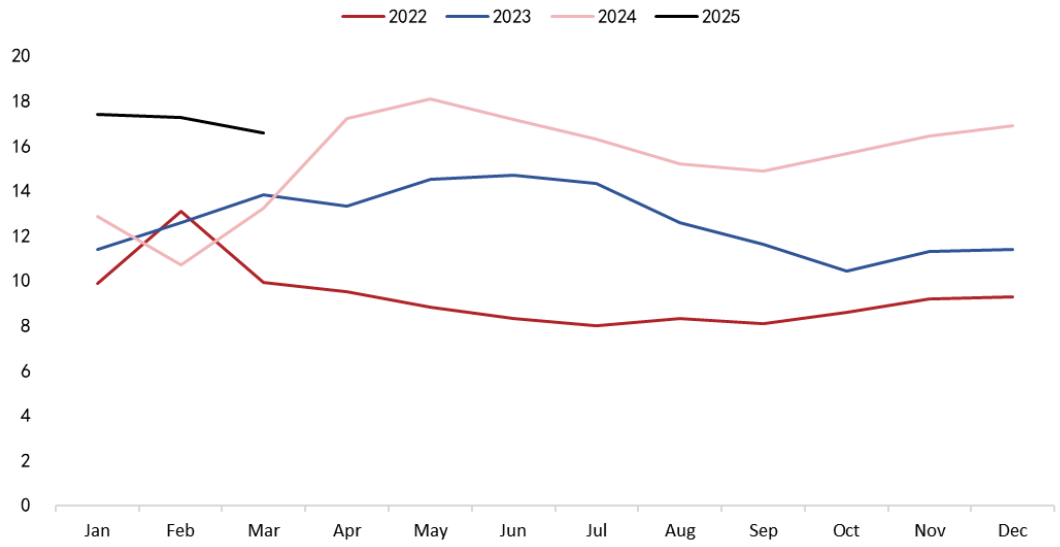
- Domestic and imported crude copper processing fees have remained stable at relatively low levels since the start of the year. Cold material supply is neither loose nor obviously tight.
- The price of sulfuric acid, a smelting by-product, has risen from the beginning of the year, providing better revenue support for smelters and enabling them to maintain high operating rates.

Figure 34: Refined-Scrap Copper Price Spread in China (yuan/ton)



Sources: SMM, WIND, Minmetals Futures

Figure 35: Blister Copper Produced from Scrap in China (10k tons)

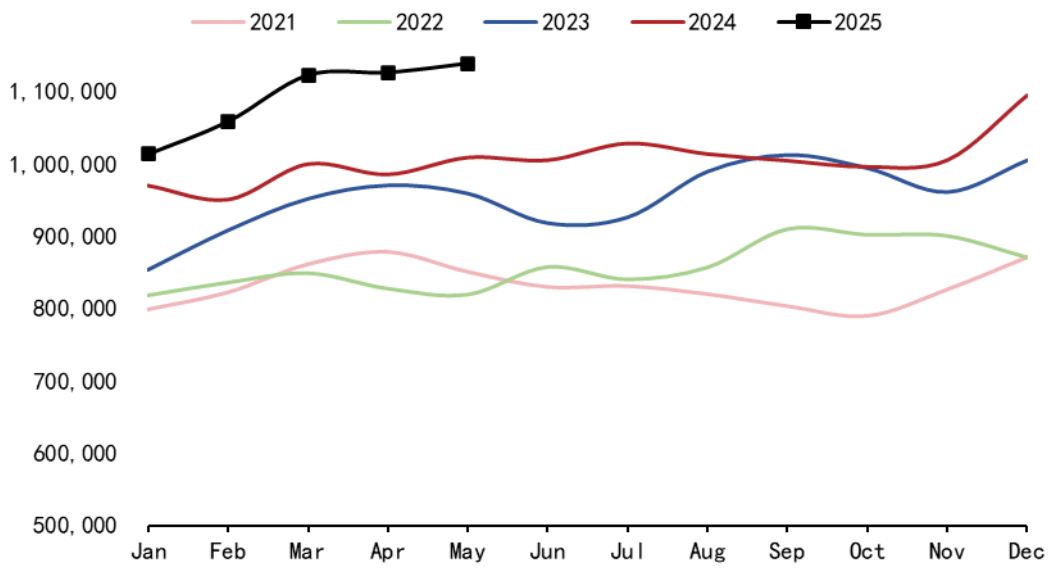


Sources: SMM, Minmetals Futures

- The volume of crude copper produced from domestic scrap copper in the first few months of 2025 was significantly higher YoY. Meanwhile, due to rising copper prices and increased imports, scrap raw material supply was not extremely tight.
- For H2, scrap raw material imports are expected to decline MoM amid uncertainties in Sino-U.S. trade dynamics, with scrap supply projected to tighten marginally and restrict domestic scrap availability to some extent.

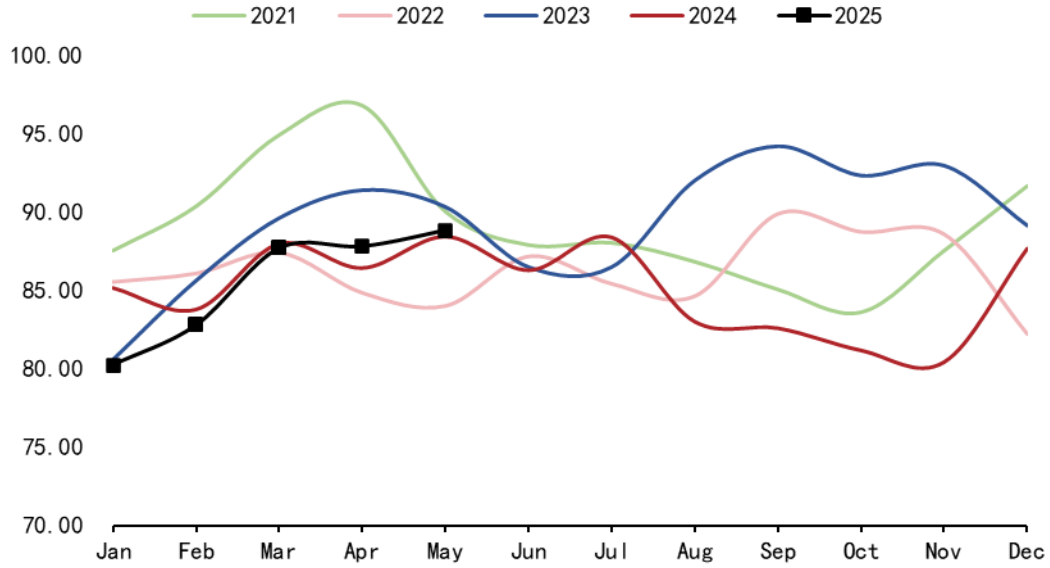
Refined Copper - Domestic

Figure 36: China Refined Copper Output



Sources: SMM, Minmetals Futures

Figure 37: China Copper Smelters' Operating Rates

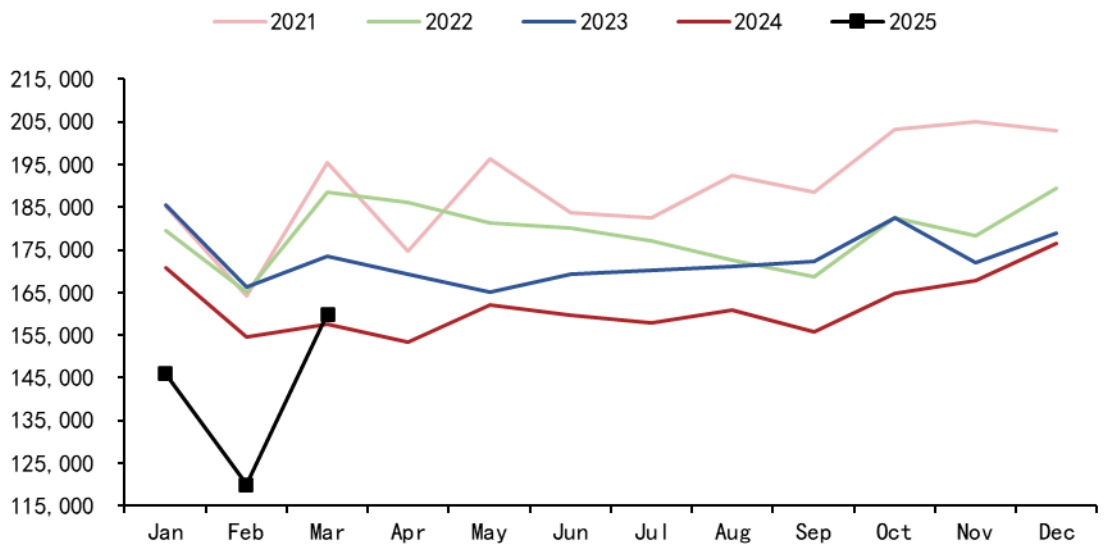


Sources: SMM, Minmetals Futures

- As per SMM data, China's refined copper output from January to May 2025 increased by approximately 545,000 tons YoY (+11.1%), with H1 increments around 670,000 tons. The main reasons for refined copper output exceeding expectations include no obvious shortage of smelting raw materials (more scrap copper flowing to smelters), less-than-expected smelter maintenance, and new capacity release.
- Copper smelters have maintained relatively high operating rates. In H2, as overseas copper smelting capacity comes on stream, domestic raw material availability is expected to decline, causing refined copper output growth to slow—though full-year growth remains projected at a high level.

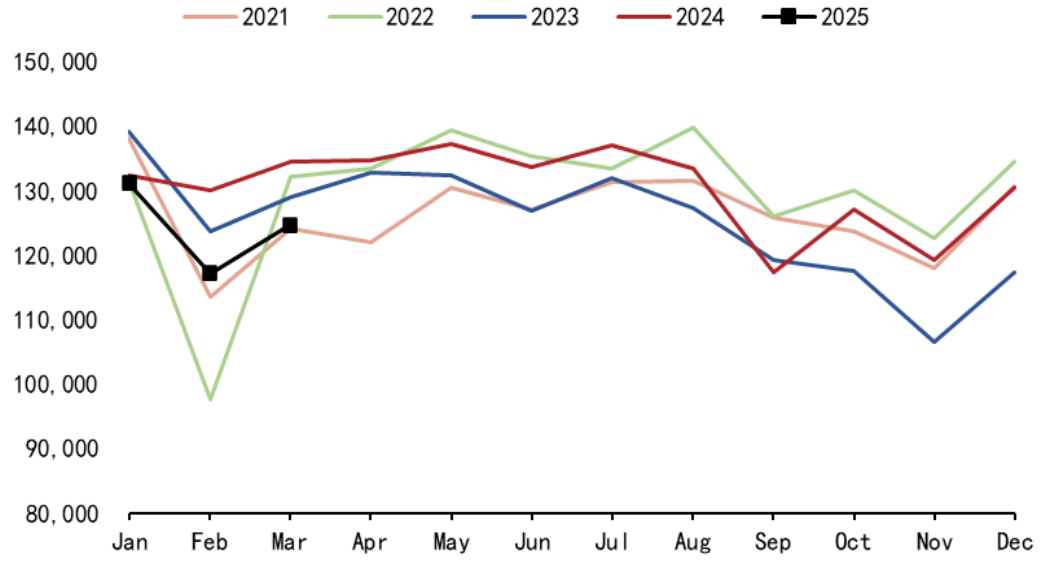
Refined Copper - Overseas

Figure 38: Chile Refined Copper Output (ton)



Sources: Cochilco, Minmetals Futures

Figure 39: Japan Refined Copper Output (ton)



Sources: Japanese Official Website, Minmetals Futures

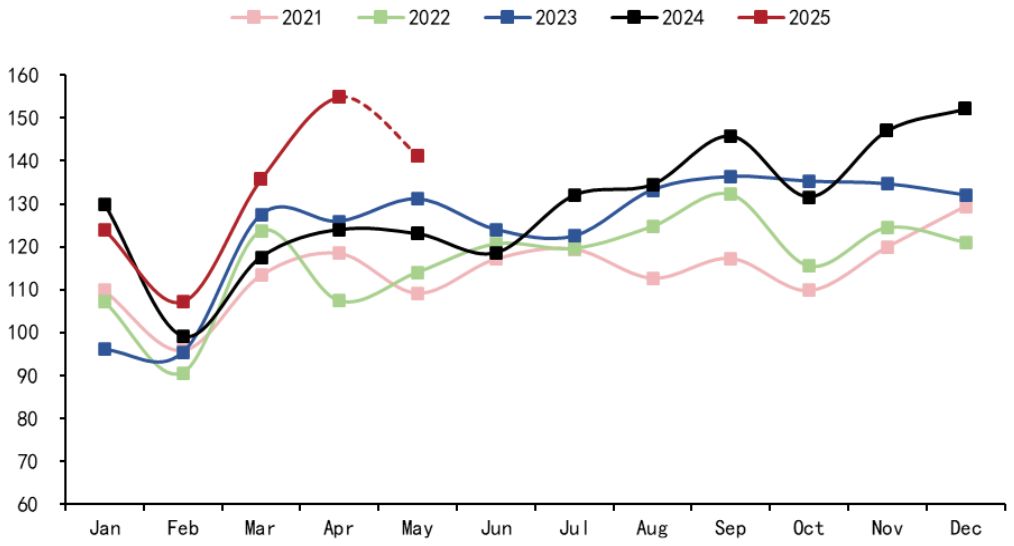
- Refined copper output in major overseas countries and regions has declined since the start of the year, with some smelters choosing maintenance or shutdown due to extremely low processing fees. Output has decreased in Chile, Japan, Europe, the Philippines, and other regions.
- With the resumption of Freeport's Maynar copper smelter in Indonesia and the commissioning of Adani's copper smelter in India, overseas refined copper output is expected to rebound in H2.

05

Demand

Demand - China

Figure 40: Seasonality of Apparent Consumption Growth Rate of China's Electrolytic Copper



Sources: Customs, SMM, WIND, MYSTEEL, Minmetals Futures

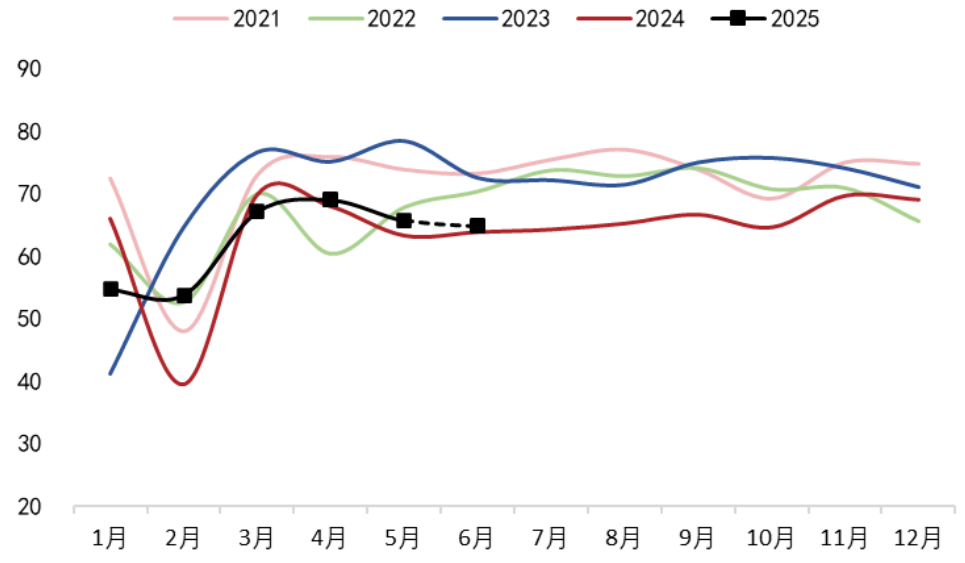
Figure 41: Cumulative Output of China's Copper Products & YoY Growth Rate (10k tons)

Sources: WIND, Minmetals Futures

- Driven by factors such as export rushes, photovoltaic pre-installation surges, and reduced scrap copper substitution, domestic electrolytic copper apparent consumption from March to May 2025 significantly exceeded expectations, with January-May apparent consumption reaching about 6.63 million tons (+11.7% YoY). China's copper product output from January to April increased by about 5.2% YoY as per NBS data.
- Domestic copper consumption this year has seen partial front-loading, and H2 consumption growth is likely to decelerate.

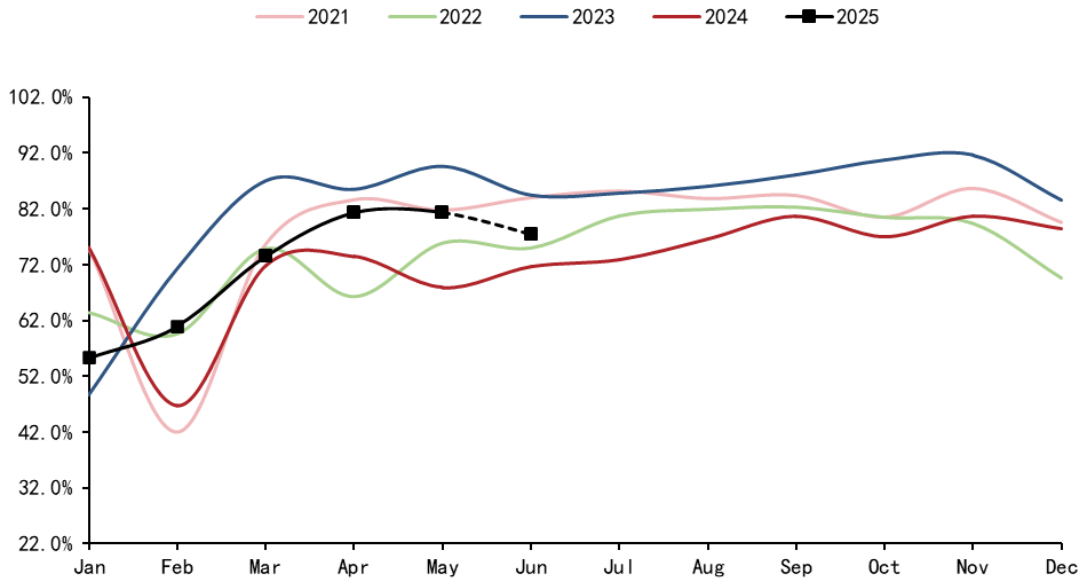
Demand - China

Figure 42: Average Capacity Utilization Rate of China's Copper Products Enterprises (%)



Sources: SMM, Minmetals Futures

Figure 43: Capacity Utilization Rate of China's Wire and Cable Enterprises

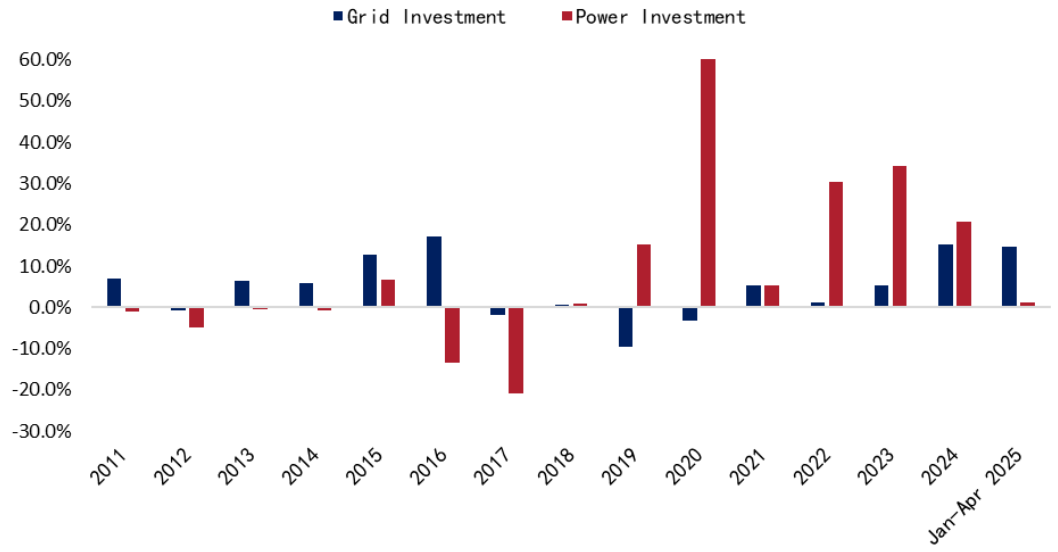


Sources: SMM, Minmetals Futures

- In terms of operating rates, domestic copper product enterprises' operating rates gradually increased from January to April, with May expected to see a seasonal decline.
- Since February, the operating rates of wire and cable enterprises have continued to rise and outperformed the same period last year, expected to remain strong in May—though weekly data show signs of weakening.

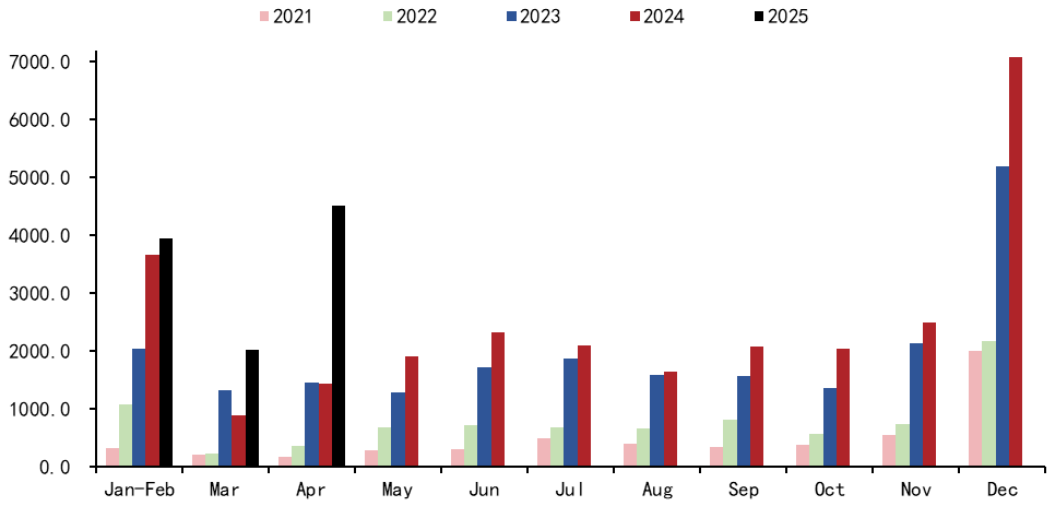
Demand - China

Figure 44: Growth Rate of China's Power Grid Investment & Power Source Investment



Sources: NEA, Minmetals Futures

Figure 45: Monthly New Installed Capacity of Solar Energy in China (10k kWh)

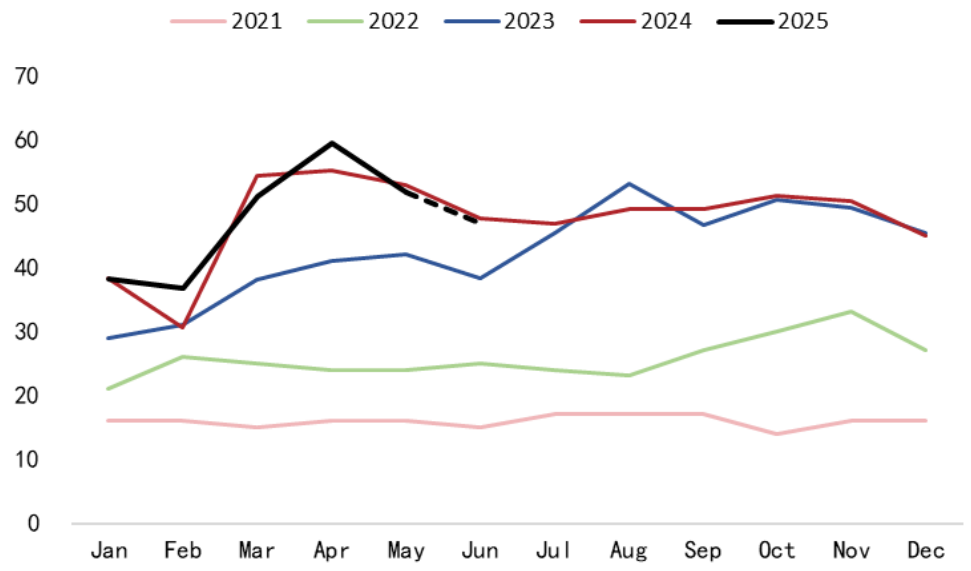


Sources: NEA, Minmetals Futures

- China's grid investment and power generation investment grew by 14.6% and 1.1% respectively from January to April 2025, providing strong support for copper demand in the power sector.
- New photovoltaic installations in China significantly increased from March to April, adding 65.5 GW in two months—42.1 GW more YoY—one of the factors driving copper demand above expectations.

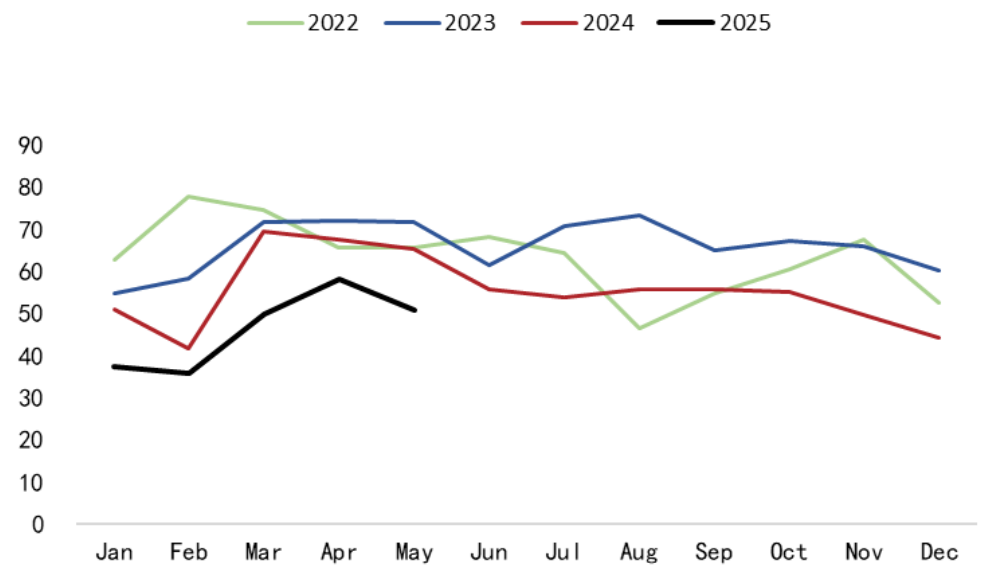
Demand - China

Figure 46: China's Photovoltaic Module Output



Sources: SMM, Minmetals Futures

Figure 47: China's Photovoltaic Module Operation Rates

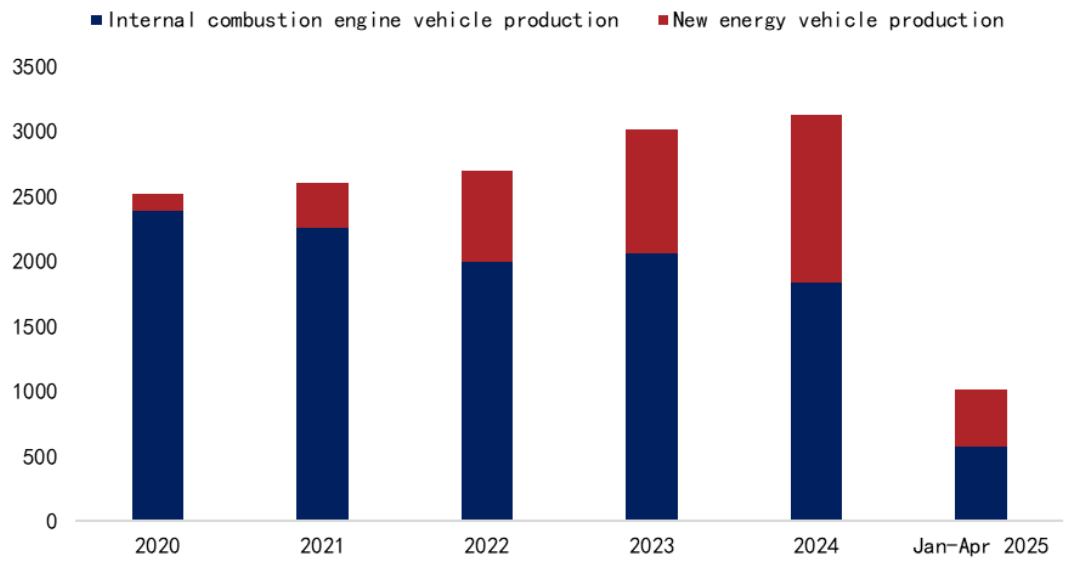


Sources: SMM, Minmetals Futures

- With the expiry of certain policies after May 31 (Circular No. 136), photovoltaic pre-installation activities are expected to drop sharply, and domestic photovoltaic module output has peaked and declined already—May output fell 13% MoM, with June scheduling expected to decrease by about 10%, which will adversely impact subsequent copper consumption.

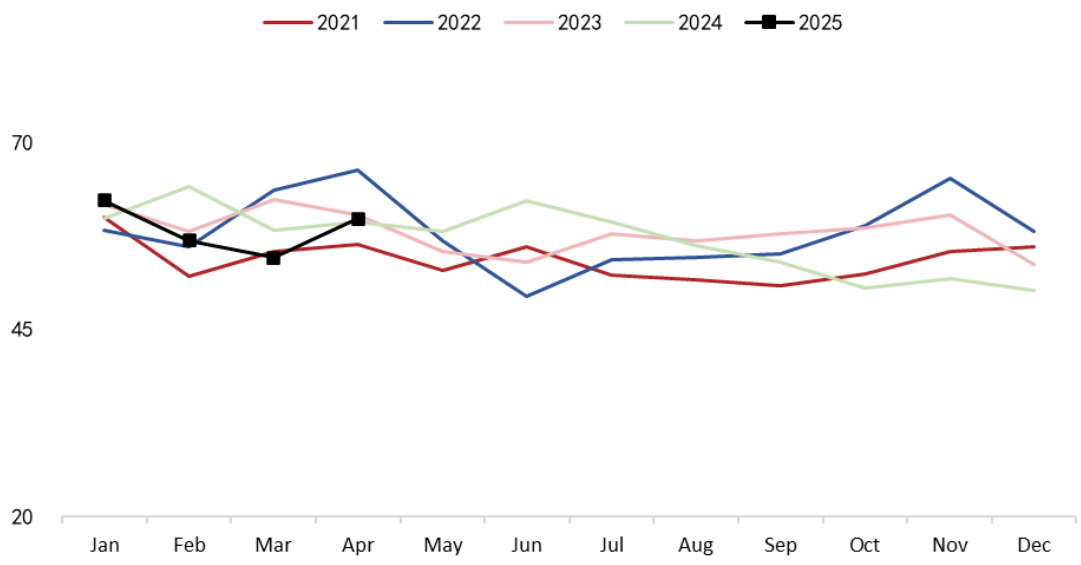
Demand - China

Figure 48: Automotive Output in China (10k units)



Sources: CAAM, Minmetals Futures

Figure 49: China Automobile Dealers Inventory Warning Index - Seasonality

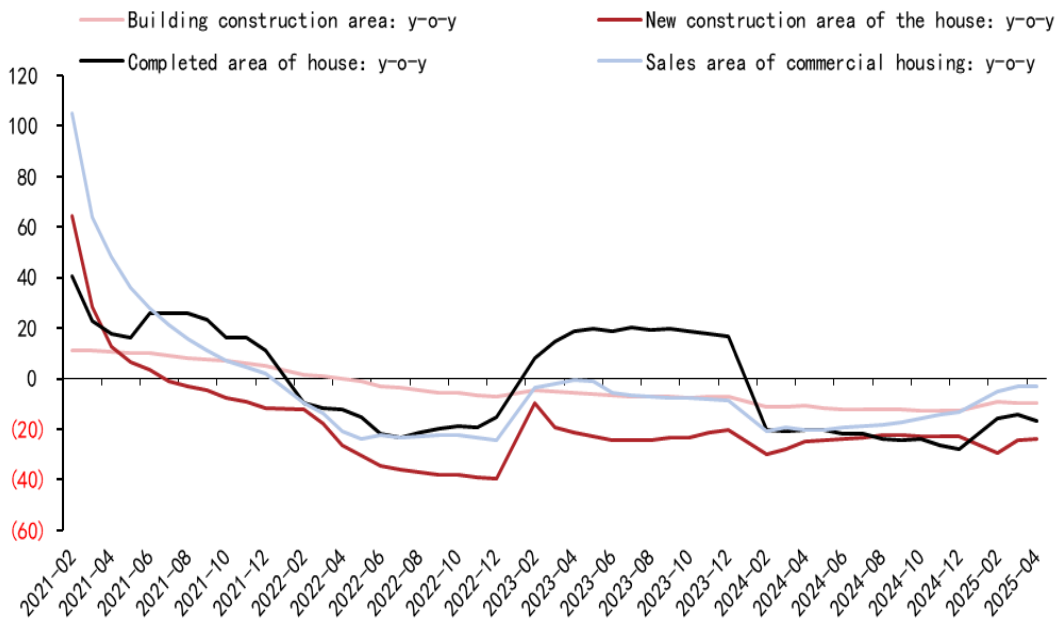


Sources: WIND, Minmetals Futures

- From January to April 2025, China's automotive production and sales increased by 12.9% and 10.8% YoY respectively, with new energy vehicle (NEV) production and sales both growing by over 40% YoY—making them the primary drivers of overall growth.
- However, it should be noted that China's automotive inventory alert index rose significantly in April, possibly indicating weakening follow-through in demand. H2 automobile production and sales may underperform seasonal norms.

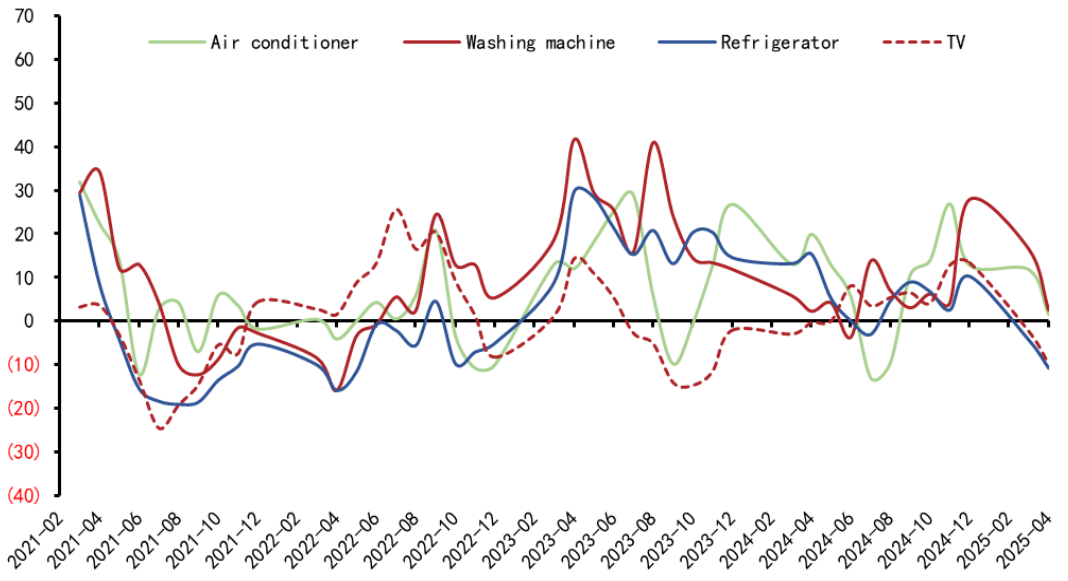
Demand - China

Figure 50: Key Real Estate YoY Growth Rate in China (%)



Sources: WIND, Minmetals Futures

Figure 51: Major Home Appliances Output Growth Rate in China (%)

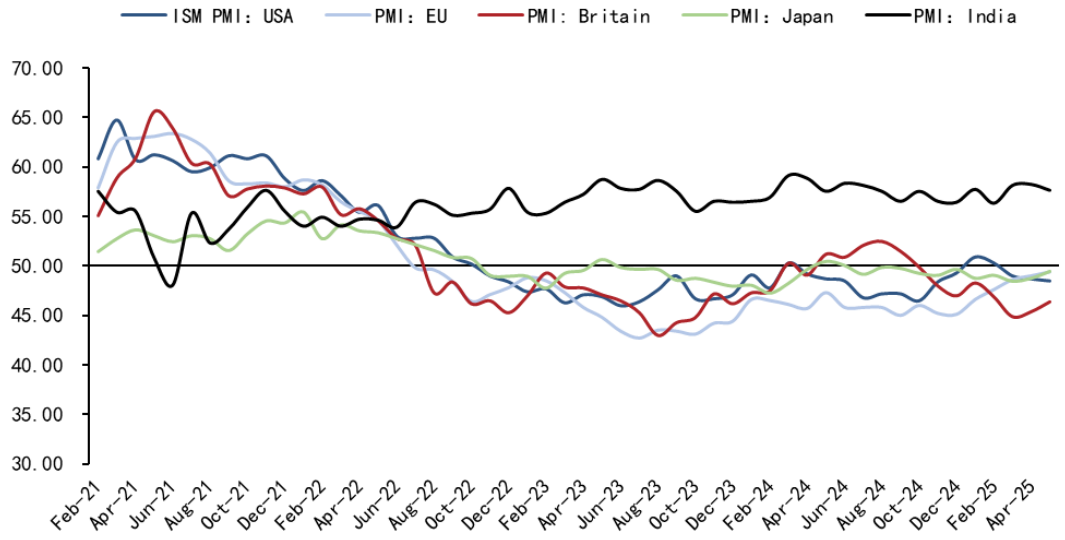


Sources: WIND, Minmetals Futures

- From January to April 2025, China's real estate data continued to be weak, but output of major home appliances grew YoY. The continuation of domestic trade-in policies and strong exports drove high production scheduling of home appliances.
- Due to the erratic U.S. tariff policies, demand for home appliance exports is expected to weaken in the second half of the year, which will exert pressure on copper demand in related sectors.

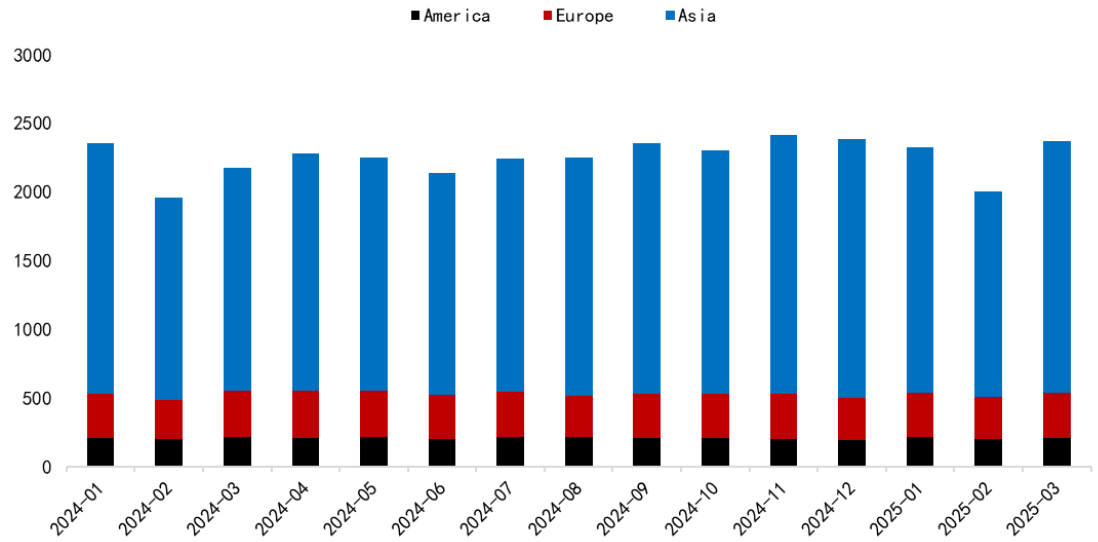
Demand - Overseas

Figure 52: Manufacturing PMI of Overseas Major Economies



Sources: WIND, Minmetals Futures

Figure 53: Global Refined Copper Consumption by Region (k tons)



Sources: ICSG, WIND, Minmetals Futures

- Among major overseas economies since the start of the year, manufacturing business climate has been robust in the Eurozone and emerging markets, while weakening in the U.S., UK, and Japan.
- According to the International Copper Study Group (ICSG), global copper consumption growth from January to March 2025 was primarily from Asia, with consumption in the Americas and Europe remaining relatively stable. Against the backdrop of uncertain global trade dynamics in H2, overseas copper consumption is expected to face certain pressure.

06

Balance and Outlook

Estimates of Global Supply-Demand Balance

Figure 54: Forecast of Copper Concentrate Supply-Demand Balance (10k tons)

	2022	2023E	2024E	2025E	2025H1E	2025H2E
Concentrate						
Supply	1,945	1,985	2,010	2,045	990	1,055
Demand	1,930	1,975	2,022	2,082	1,018	1,064
Balance	15	10	(12)	(37)	(28)	(9)

Sources: ICSG, Minmetals Futures

Figure 55: Global Forecast of Refined Copper Supply-Demand Balance (10k tons)

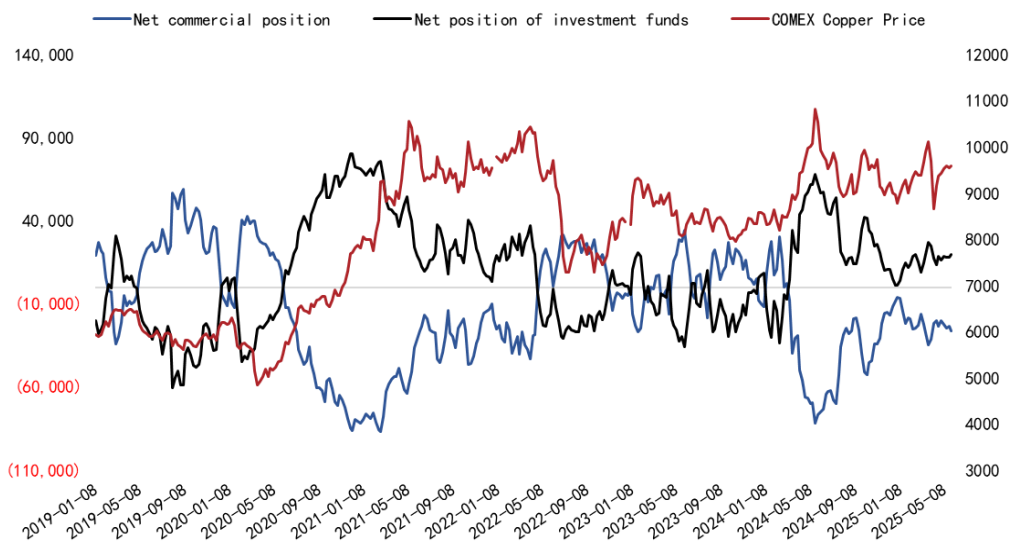
	2022	2023E	2024E	2025E	2025Q1	2025Q2E	2025Q3E	2025Q4E
China								
Supply	1,028	1,144	1,203	1,295	316	333	322	324
Demand	1,400	1,497	1,556	1,642	367	432	415	428
Adjustment	0	0	0	0	0	0	0	0
Net import	365	350	358	350	84	76	85	105
Balance	(7)	(3)	5	3	33	(23)	(8)	1
Outside China								
Supply	1,365	1,355	1,370	1,375	335	340	348	352
Demand	1,020	1,010	1,000	1,002	252	256	248	246
Net import	365	350	358	350	84	76	85	105
Adjustment	0	12	5	0	0	0	0	0
Balance	(20)	7	17	23	(1)	8	15	1
World								
Supply	2,393	2,499	2,573	2,670	651	673	670	676
Demand	2,420	2,507	2,556	2,644	619	688	663	674
Balance	(27)	4	22	26	32	(15)	7	2

Sources: Customs, NBS, SMM, WIND, MYSTEEL, Minmetals Futures

- As copper ore supply rebounds in H2 2025, the shortage of copper concentrates is expected to narrow.
- Both refined copper supply and demand are projected to decline in H2 2025 compared to Q2, keeping global copper supply and demand relatively balanced. However, considering macro-level pressures, the probability of demand falling short of expectations is higher.

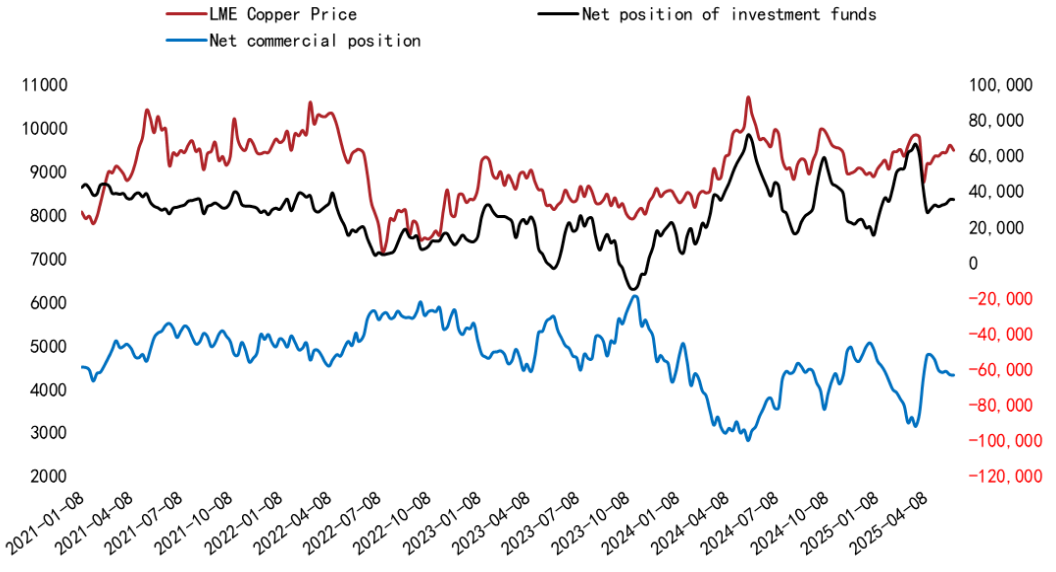
Copper Price Outlook

Figure 56: COMEX Copper OI and Price



Sources: WIND, Minmetals Futures

Figure 57: LME Copper OI and Price



Sources: WIND, Minmetals Futures

- With unstable global trade dynamics in H2, intensified demand-side pressure after the U.S. "import rush", and delayed expectations for U.S. monetary policy easing combined with tightening financial market liquidity, copper prices will face shocks. The tension in copper ore raw material supply may ease in H2, and slowing downstream consumption growth will weaken price support. As overall macro risks may amplify, vigilance is needed against the risk of sharper-than-expected copper price corrections. Capital flows also indicate that overseas market bullish sentiment on copper has significantly cooled by mid-year.
- Trading Advice: Increase the proportion of sell hedging after rallies (above $9,700/ton), and take calendar spread long positions after price declines.

Disclaimer

Please refer to international@minfutures.com for any comment or suggestion.

All information in this report is based on reliable sources. We strive to provide you with accurate data, objective analysis, and comprehensive point of view. However, we must state that we are not responsible for any loss that may be incurred by those information. This report does not provide customized investment recommendations, nor consider the specific financial situation and objectives of the readers. The Research Team of Minmetals Futures suggests that investors should independently evaluate specific investments and strategies, and it is recommended that investors should seek the advice of professional financial advisers. Whether a specific investment or strategy is appropriate or not depends on the investors' own situation and goals. Any views mentioned in this report are for reference only and do not constitute a trading advice.

Expert in Finance-Industry Integration
Reliable Choice of Wealth Management

Website www.wkqh.cn www.minfutures.com/english/index

Hotline 400-888-5398

Headquarter 13-16/F, Minmetals Financial Center, No. 3165 Binhai Ave., Nanshan District, Shenzhen, China

Wechat Account

Weibo Account