

## What's Hot Today:

### ► China Home Appliance - Replacing Copper with Aluminum in Air-conditioners

China’s appliance manufacturing sector is a significant consumer of copper. Air conditioner makers, in particular, are major users, with their annual demand estimated to account for more than 10% of China’s total copper consumption. Although China represents a sizable share of global refined copper output, it still relies heavily on imported copper. Given skyrocketing copper prices, it has become urgent for manufacturers to seek alternatives. One feasible substitute is aluminum, a material China produces in ample supply, with its electrolytic output accounting for roughly 60% of global production. Indeed, China’s air-conditioner industry is accelerating the shift toward “aluminum-for-copper substitution.”

It should be noted that “aluminum-for-copper substitution” does not mean completely replacing copper with aluminum in an air-conditioner unit. In essence, copper-intensive components such as the tubes inside heat exchangers will be replaced by aluminum. A standard unit’s heat exchanger typically uses about 6–8 kg of copper. In practice, thick copper tubes will be replaced with flat, multi-channel aluminum tubes while other interconnecting piping can also be substituted with aluminum through the use of anti-corrosion coatings, better welding and sealing technology to ensure long-term durability.

Putting that into numbers, copper represents 25–30% of the bill of materials (BOM) in typical mass-market air conditioners, and can approach 40% in premium models. For a standard unit using 6–8 kg of copper, the recent increase in copper prices, from around RMB 70,000 per ton early this year to about RMB 92,000 per ton. This translates to a copper cost per unit from roughly RMB 420–560 to RMB 552–736, an increase of about RMB 132–176. It is estimated that a 1% rise in copper prices adds roughly 0.25–0.30% to total unit cost.

Based on AVC’s 2024 global shipment data (Midea: 61.40mn units, Gree: 45.71mn units, Haier: 32.80mn units), the higher copper price implies incremental raw-material costs of approximately RMB9.5bn, RMB7.0bn, and RMB5.1bn, respectively. If “aluminum-for-copper substitution” delivers 5% total cost savings (assuming copper makes up 25–30% of BOM), this would equate to roughly RMB120 per unit or potential savings of RMB7.3bn, RMB5.5bn, and RMB3.9bn for the three companies, respectively.

China & HK Indices	CLOSE	1D	YTD
HSI	25,854	0.9%	28.9%
HSCEI	8,991	1.1%	23.3%
HSCCI	4,046	0.6%	7.0%
CSI300	4,651	0.3%	18.2%
Shanghai A	4,157	-0.0%	-5.0%
Shanghai B	254	0.3%	-5.0%
Shenzhen A	2,656	0.2%	29.7%
Shenzhen B	1,263	0.2%	4.2%

Key Int'l Indices	CLOSE	1D	YTD
Dow Jones	48,367	-0.2%	13.7%
S&P 500	6,896	-0.1%	17.3%
Nasdaq	23,419	-0.2%	21.3%
Nikkei Index	50,339	-0.4%	26.2%
FTSE Index	9,940	0.8%	21.6%
CAC Index	8,168	0.7%	10.7%
DAX Index	24,490	0.6%	23.0%

Commodities	CLOSE	1D	YTD
GOLD (US\$/oz.)	4,339	0.2%	65.4%
STEEL (US\$/oz.)	2,562	-1.5%	43.5%
SILVER (US\$/oz.)	76	5.8%	161.3%
CRUDE OIL (US\$/bbl)	57	-0.2%	-19.2%
COPPER (US\$/oz.)	12,222	1.3%	39.4%
ALUMINIUM (US\$/oz.)	2,952	0.4%	15.7%
PLATINUM (US\$/oz.)	2,180	3.3%	138.3%
ZINC (US\$/oz.)	3,088	-0.2%	3.7%
WHEAT (US\$/bu)	510	-1.6%	-7.4%
CORN (US\$/bu)	440	-2.1%	-3.2%
SUGAR (US\$/lb)	64	-1.3%	-29.8%
SOYBEAN (US\$/bu)	1,062	-1.0%	2.7%
PVC (US\$/t.)	4,789	-0.6%	-18.9%
CRB	301	0.5%	3.0%
BDI		-5.2%	88.3%

Exchange Rates	USD	HKD	EUR	JPY	CHF	RMB
USD		7.781	0.851	156.410	0.792	6.996
HKD	0.129		0.109	20.105	10.177	0.899
EUR	1.175	9.141		183.760	1.075	8.221
JPY	0.006	4.974	0.544		0.508	0.045
CHF	1.263	9.826	1.075	197.550		8.842
RMB	0.143	1.112	0.122	22.360	0.113	

Market Sentiment	CURRENT	5D
CDS Monitor - USD SR 5Y		
Greece	N/A	N/A
Ireland	83	-2.4%
Italy	139	-0.6%
Portugal	207	-0.0%
Spain	108	0.3%
VIX	14	1.8%

Source: Bloomberg

The following table compares the key differences between copper and aluminum.

Key Metric	Copper	Aluminum	Impact on A/Cs
Thermal conductivity (W/m·K)	401	237 (around 60% of copper)	Aluminum relies more on design/process to close the gap
Corrosion behavior	Generally better; mainly uniform corrosion	More prone to pitting in chloride/salt-spray environments	More sensitive to coating and manufacturing consistency
Raw material price	RMB 92,190/ton	RMB 23,200/ton	Copper is almost 4× the cost of aluminum
Typical service life	15–20 years	Around 10 years (with process optimization)	Better fit for 8–10 year replacement cycles

The Government is also supportive to the switch. In March 2025, the MIIT and nine other ministries issued the “Implementation Plan for High-Quality Development of the Aluminum Industry (2025–2027),” which prioritizes “using aluminum to save copper.” In December, leading brands including Midea, Haier, Xiaomi, Hisense, TCL, AUX, Changhong, and Meibo signed an industry self-discipline pledge, affirming that aluminum heat exchangers can be stably applied in selected models while maintaining performance and quality.

However, the industry is not fully aligned. Gree did not sign the pledge, as its chairwoman Dong Mingzhu believes aluminum substitution has yet to match the reliability of copper-tube designs. Under Gree’s 10-year free warranty strategy, a shorter aluminum lifespan (8–10 years versus 15–20 years for copper) could add pressure on brand reputation and after-sales support.

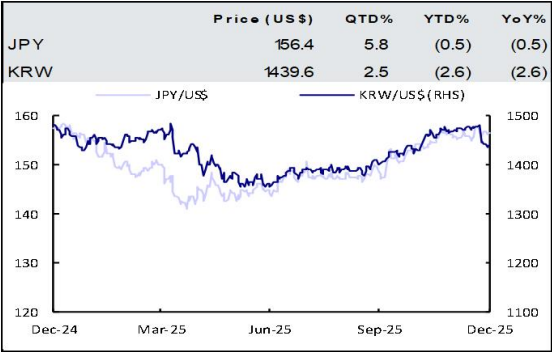
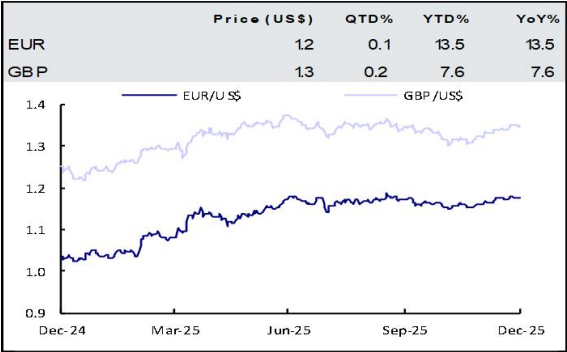
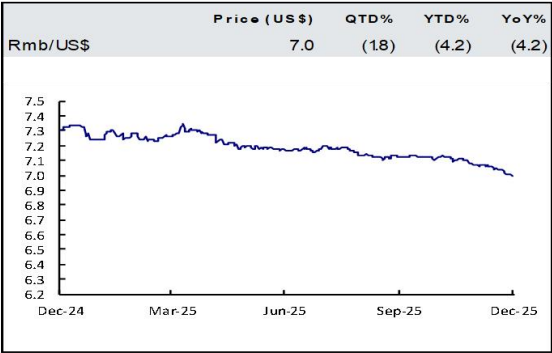
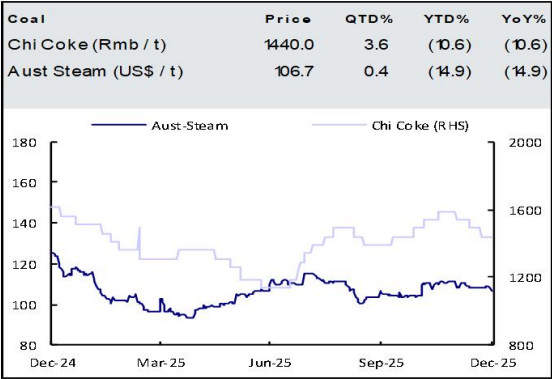
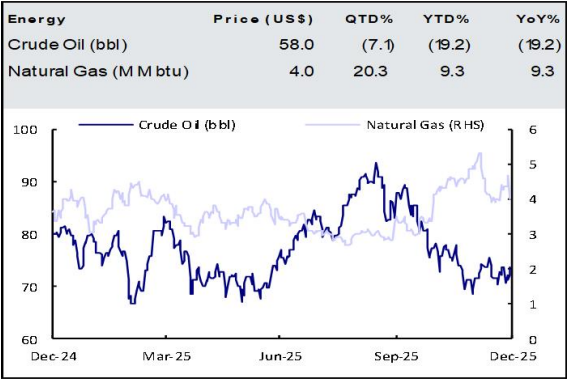
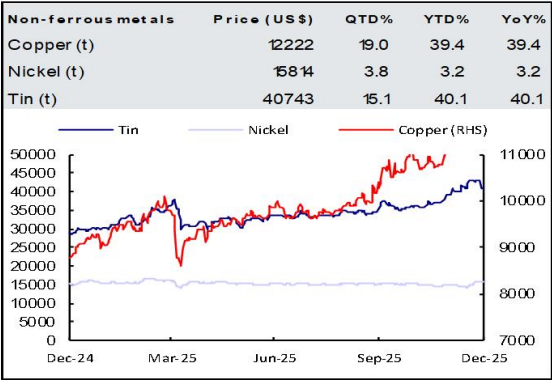
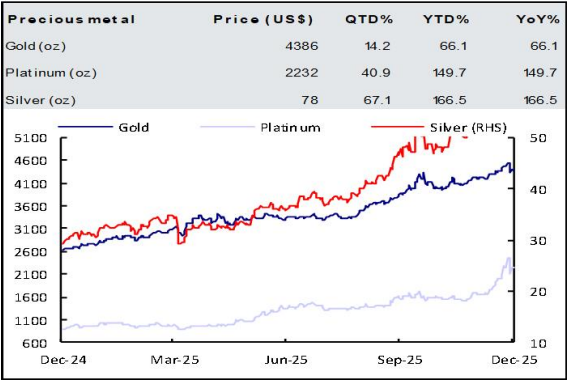
Looking beyond China, overseas adoption offers a useful benchmark for how widely aluminum-based solutions have been accepted. Japanese Daikin’s aluminum-for-copper share reportedly exceeded 50% in 2024, while aluminum heat exchangers are estimated to account for over 30% of the market in Europe and the United States.

**Our view:** “Aluminum-for-copper substitution” has moved from a niche trial to a broader substitution trend, driven by both copper-cost pressure and a strategic need to strengthen supply-chain resilience. This is not a simple “product downgrade,” but a re-optimization of materials and processes for key components, subject to meeting required safety, efficiency, and reliability standards.

The price war in China’s air-conditioner sector has been intensifying recently. In 1Q–3Q 2025, the market share of products below RMB2.2k exceeded 30%, from single-digit last year. It is believed that an effective “Aluminum-for-copper substitution” can reduce low-end models’ exposure to copper inflation and help protect profit margins. However, domestic demand is increasingly replacement-led; subsidy impact is fading and weak property limits new installations. Therefore, incremental growth should come mainly from overseas.

We prefer Haier Group (6690 HK, HK\$24.76, HK\$232bn) in the home-appliance sector, supported by stronger overseas localization, 20%+ market share in North America and Europe, and production capability that can cover around 90% of its overseas demand, which should help offset softer domestic sales. The company is trading at 9x FY26E P/E respectively. (Research Department)

Market Watch – Major Commodities and Currencies



Source: Bloomberg

US Economic Calendar

Indicators	Freq	Obs Date	Expected Release Date
Initial Jobless Claims	WoW		31-Dec-25
Factory Orders	MoM		7-Jan-26
Wholesale Inventories	MoM		8-Jan-26
Housing Starts / Building Permits	MoM		9-Jan-26
New home Sales	MoM		13-Jan-26
CPI	MoM		13-Jan-26
Business Inventories	MoM		14-Jan-26
PPI	MoM		14-Jan-26
Existing Home Sales	MoM		14-Jan-26
Industrial Production	MoM		16-Jan-26
GDP	QoQ		22-Jan-26
Consumer Confidence	MoM		27-Jan-26
Durable Goods Orders	MoM		7-Jan-26
ISM Manufacturing PMI	MoM		5-Jan-26
Trade Balance	MoM		8-Jan-26
Employment Report	MoM		9-Jan-26
Retail Sales	MoM		14-Jan-26
Personal Income & Spending	MoM		5-Jan-26
Auto Sales	MoM		

China Economic Calendar

Indicators	Freq	Obs Date	Expected Release Date
PMI Manufacturing	MoM		31-Dec-25
Foreign Exchange Reserves	QoQ		7-Jan-26
Money Supply - M2	MoM		9-Jan-26
PPI	MoM		9-Jan-26
CPI	MoM		9-Jan-26
Trade Balance	MoM		14-Jan-26
Retail Sales	MoM		19-Jan-26
Industrial Production	MoM		19-Jan-26
GDP	YoY		19-Jan-26

Hong Kong Economic Calendar

Indicators	Freq	Obs Date	Expected Release Date
Money Supply - M2	MoM		31-Dec-25
Retail Sales	MoM		2-Jan-26
PMI	MoM		6-Jan-26
Foreign Currency Reserve	MoM		7-Jan-26
Unemployment Rate	MoM		20-Jan-26
CPI	MoM		22-Jan-26
Trade Balance	MoM		27-Jan-26
GDP	QoQ		30-Jan-26
Producer Prices Index	QoQ		13-Mar-26
Industrial Production	QoQ		13-Mar-26
Composite Interest Rate	MoM		

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