NUS INVESTMENT SOCIETY

Global Macro Department – Metals

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Basic Information

Global Metals Market Value	~4.23T
Gold Price (USD/oz)	~4,347
Silver Price (USD/oz)	~67.2
Copper Price (USD/t)	~1,121
Iron Ore Price (USD/t)	~107

Source: TradingView

Chart info

Figure 1: Precious Metals Pricing 2025

Source: Capital Exonomics

Overview of Metals Industry

- **Gold, silver, copper, and iron ore** span both precious and industrial metals, deriving value from scarcity, durability, and their roles in monetary systems and real-economy production. Gold remains the dominant metal by market value and investor focus, while silver occupies a hybrid position, and copper and iron ore are primarily driven by industrial and construction demand cycles.

- **Gold** continues to function as a global store of value and monetary hedge, maintaining its role in central bank reserves alongside fiat currencies. By late-2025, central bank gold purchases have remained structurally elevated, reflecting diversification away from U.S. dollar assets amid geopolitical fragmentation, fiscal concerns, and heightened sensitivity to real interest rate dynamics.

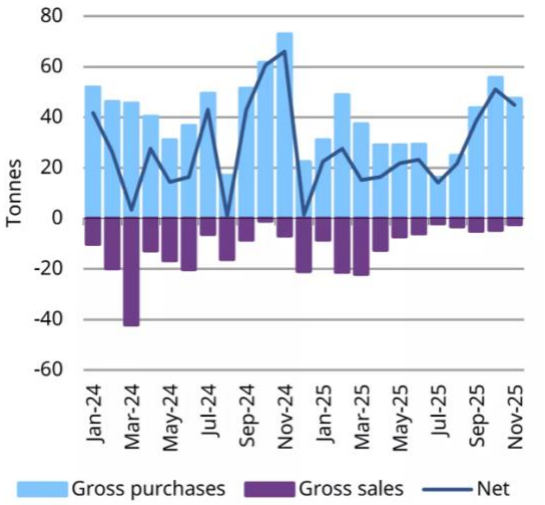
- **Silver** retains its dual character as both a precious and industrial metal. Industrial demand—led by photovoltaics, electronics, and electrical applications—accounts for roughly half of total consumption, while the remainder is driven by jewellery and investment demand. As a result, silver prices have exhibited higher volatility than gold, responding both to macro risk sentiment and fluctuations in global manufacturing activity.

- **Copper and iron ore** are core industrial metals and are closely linked to global growth and construction cycles. Copper demand is increasingly driven by electrification, renewable energy infrastructure, and electric vehicles, reinforcing its strategic importance in the energy transition. Iron ore demand remains predominantly tied to steel production, leaving it highly sensitive to infrastructure spending and China's construction and property sector adjustments.

- The metals market remains global in nature, with **supply concentrated among a small number of producers**. Copper production is led by Chile and Peru, iron ore by Australia and Brazil, and gold by China and Australia. This concentration continues to expose markets to supply-side risks stemming from geopolitical tensions, regulatory changes, and operational disruptions.

- From a macroeconomic perspective, metals prices in late-2025 are primarily influenced by **real interest rates, U.S. dollar trends, global growth expectations, and China's demand trajectory**. Gold remains inversely correlated with real yields, while silver, copper, and iron ore exhibit greater cyclicality due to their exposure to industrial demand and infrastructure investment cycles.

Figure 2. 2025 Central Bank Gold Purchases

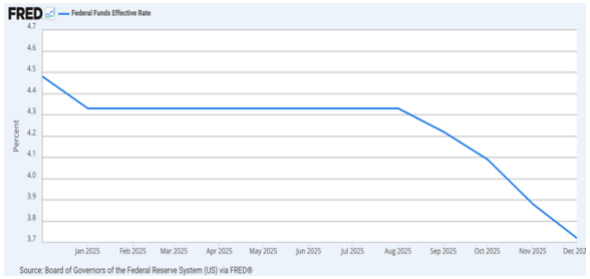


Source: IMF, respective central banks, World Gold Council

Figure 3: Silver expected to continue to outperform Gold in 2026

Source: Capital Economics

Figure 4: US Federal Funds Effective Rate 2025



Source: FRED

Summary of events in the past 6 months

Investment & Demand Dynamics

- **Gold** prices have remained resilient over the past six months despite elevated global interest rates. Strong central bank buying—particularly from emerging market economies seeking to diversify reserves away from the U.S. dollar—has provided a structural demand floor, offsetting headwinds from high nominal and real yields.

- **Investment demand for gold** has been volatile, with ETF flows remaining subdued as investors weighed opportunity costs against gold's defensive properties. However, heightened geopolitical risks and concerns over fiscal sustainability in major economies have continued to support safe-haven demand during periods of market stress.

- **Silver** has outperformed gold on a relative basis, benefiting from a recovery in industrial demand alongside its monetary characteristics. Strong growth in solar photovoltaic installations, electrification, and electronics demand has reinforced silver's cyclical upside, while its precious metal attributes have continued to attract investor interest amid declining real rates.

- **Copper** prices have been supported by long-term electrification and energy transition themes, but near-term demand has softened amid slowing global manufacturing and a sluggish recovery in China's property sector. While structural deficits are expected over the medium term, short-term price action has remained sensitive to macro growth signals.

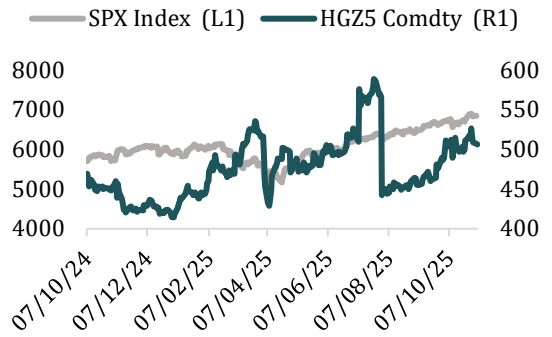
- **Iron ore** has experienced heightened volatility, driven largely by fluctuations in Chinese steel demand and property-sector weakness. While infrastructure support and policy easing provided intermittent price support, oversupply concerns and weak downstream construction activity have capped sustained upside.

Monetary Policy

- By end-2025, monetary policy across developed markets has shifted from restrictive toward **moderately accommodative**, following a multi-year disinflation trend. Policy rates in the U.S. and other major economies have been reduced from their peaks, driving **lower real interest rates** and easing financial conditions. This has reduced the opportunity cost of holding non-yielding assets such as gold, while providing a more supportive macro backdrop for growth-sensitive metals compared to the prior tightening phase. U.S. dollar strength has become less persistent, allowing for improved pricing conditions across the metals complex.

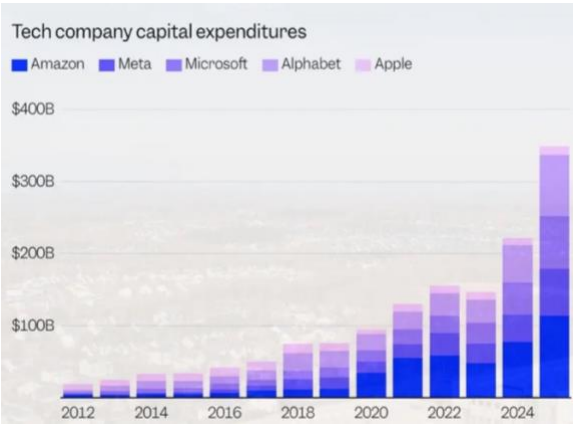
- Looking ahead, metals performance will be shaped by the pace and durability of further policy easing, real rate stabilisation, and the strength of global growth. While short-term price action remains sensitive to macro data and policy communication, structural drivers such as energy transition investment, infrastructure spending, and continued central bank diversification into gold remain supportive for both precious and industrial metals over the medium term.

Figure 5: S&P500 and COMEX Copper Prices in cents per lb. The correlation between these two tickers is 0.75.



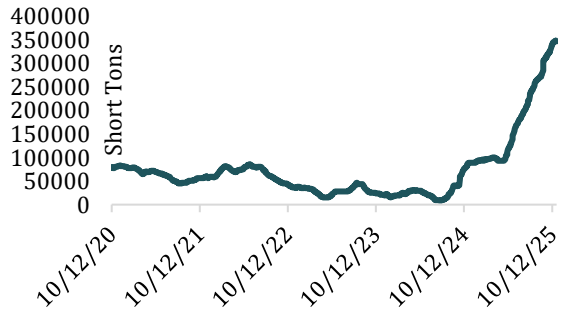
Source: Bloomberg

Figure 6: CAPEX of mega-cap tech companies



Source: Business Insider

Figure 7: COMEX Inventory is currently at elevated levels.



Source: Bloomberg

Figure 8: SHFE Inventory

Source: MacroMicro

Copper

Introduction

Currently, copper demand is driven by two main events: power infrastructure needed for the "AI Boom", and the "green revolution" in which new renewable energy grids are built, and electric vehicles are gaining traction in several markets over internal combustion engine (ICE) vehicles.

AI Boom

Recent fears about the AI bubble have been a headwind for copper prices. For example, COMEX Copper fell from $5.266 (29 Oct) to $4.978 (6 Nov). While tech and chip mega-caps knee-deep in AI have continued to deliver earnings that have generally beat expectations, the AI bubble still lingers.

Notwithstanding these fears, planned CAPEX spending is expected to increase, as reported by hyperscalers (e.g. Google, Meta) in various 3Q25 earning calls. Investors are doubting the return of investment on the extraordinary amount of CAPEX, and have raised concerns about concealing debt raised to finance these projects. As expected, stock prices have corrected as free cash flows are lower. However, copper prices shouldn't experience the same magnitude of correction.

Supply of Copper

Inventory in COMEX is currently at record levels. The turning point after clarification regarding tariff exclusion of exchange grade copper. Likely, traders are hoarding copper just in case another tariff pops up, or a policy U-turn: for example, a policy change to include refined copper in Section 232 tariffs. By June 2026, the Secretary of Commerce is to provide the President with an update on the market so that he can determine whether imposing a refined copper tariff of 15% starting in January 2027 is warranted.

Chile's state-owned copper producer Codelco has warned that national copper output may stagnate around 5.5 million tonnes annually due to increasingly difficult mining conditions. Chairman Máximo Pacheco highlighted deeper mining operations, falling ore grades, and rising costs as major challenges.

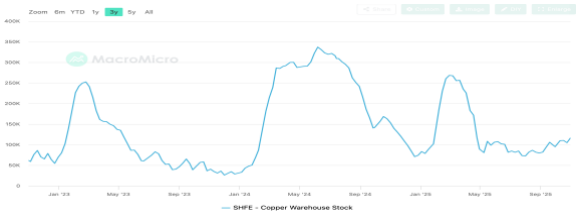
Copper inventory at LME has been dropping possibly due to:

- Operations at Freeport's Grasberg mine (Indonesia), which is the world's second-largest copper mine, were halted after a fatal mudslide killed at least two. The mine accounted for ~4% of world copper production.

- Hudbay Minerals announced a shutdown at its Constancia mill in Peru due to ongoing political protests.

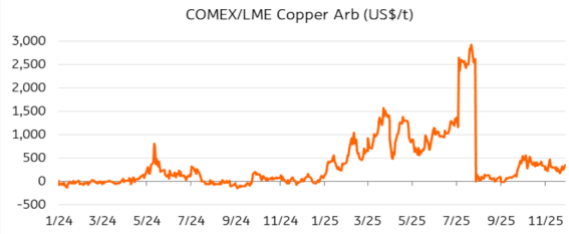
Despite soft demand from China (see next section), copper prices have been increasing off late (Dec 2025), highlighting the persistent supply shortage in non-COMEX exchanges. The persistent COMEX/LME Arbitrage also means that traders are paying a premium for US copper. Following this, producers plan to levy premiums on European and

Figure 9: LME Inventory



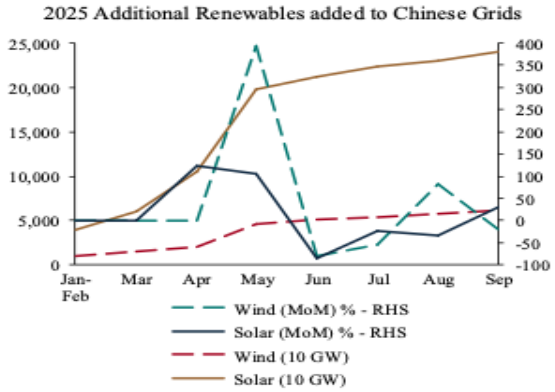
Source: MacroMicro

Figure 10: COMEX/LME Copper Arbitrage



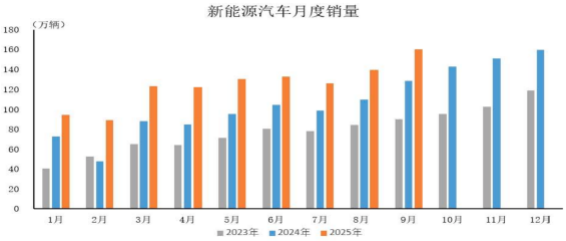
Source: ING Research

Figure 11: Pace of Additional Renewables Capacity added to Chinese grids have slowed



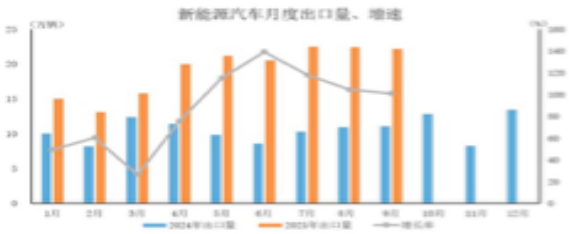
Source: National Energy Administration China

Figure 12: New Energy Vehicles Monthly Sales



Source: China Association of Automobile Manufacturers

Figure 13: New Energy Vehicles Monthly Exports, YoY growth



Source: China Association of Automobile Manufacturers

Asian customers next year to recoup the opportunity cost of not selling to the US.

Chinese Copper Demand

Overcapacity, price wars have caused the market to overheat, resulting in a reduction in addition of new solar and wind power in the Chinese grid. The move toward market-based pricing for renewables, effective June 2025, has triggered an investment drawback in several key projects. This change signals a shift to a more competitive renewable energy sector, where new projects must now enter provincial auctions and operate with shorter 10-year contracts instead of the previous 18-year terms. This new structure increases developers' financial risks, specifically their exposure to price fluctuations and potential revenue losses if their power generation is curtailed.

This impact was clearly seen in 2025 when central state-owned developers like State Power and China Datang cancelled more than 1.3 GW of distributed solar (PV) projects because the expected returns fell below company minimums. The heightened competition is further exemplified in Shandong, where winning auction bids for wind and solar projects were priced 9% and 32% lower than current average settlement prices, underscoring the more difficult environment developers face as China transitions to full market pricing for renewable power.

Supporting copper demand is Chinese NEV sales: slowing domestic momentum but international demand remains strong.

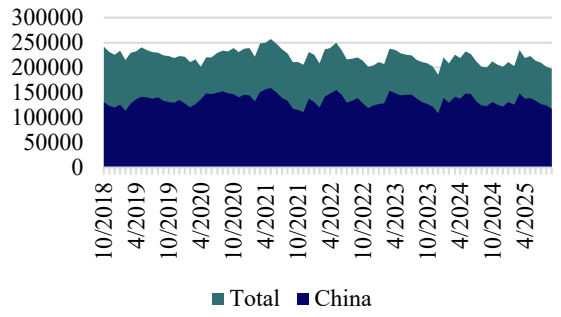
Again, the saturated EV market in China is hit by price wars, driving up the sales of vehicles and the price of copper in the first half of the year. Record sales of major EV makers were reported his year. However, Chinese officials cracked down on excessive discounting. Domestic demand for EVs will likely drop. The playbook for Chinese EV makers is to export worldwide to capture revenue.

- **Exports to EU:** Despite the tariffs, Chinese EVs still hold a significant share of the market. EU and China will discuss moving away from a tariff model to a "minimum price" model, potentially opening more room for exports.

- **Exports to Asia (SEA):** Chinese FDI transaction in EVs at $22.3B. For example, the Indonesian government has set ambitious targets to deploy 2 million electric cars and 12 million electric two-wheelers by 2030. Chinese players are not just bringing products but also helping to build and integrate their products the domestic supply chain.

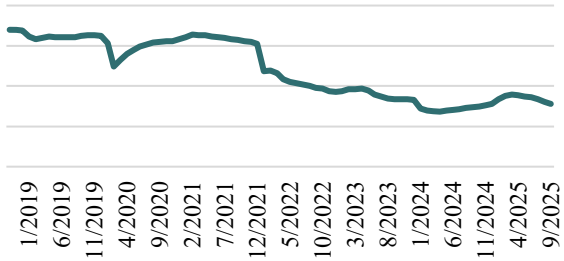
Overall, while near-term copper demand from China's renewable energy buildout is facing headwinds from policy reform, overcapacity, and increased pricing discipline, these pressures are partially offset by sustained growth in the electric vehicle value chain. As domestic EV competition compresses margins, Chinese manufacturers are increasingly shifting production and sales overseas, effectively externalising copper demand through global markets. Taken together, this suggests that Chinese copper demand growth is likely to become more structurally driven by electrification and export-led channels rather than domestic policy support, reinforcing copper's medium-term demand resilience despite short-term volatility.

Figure 14: Demand for Iron Ore in '000 MT



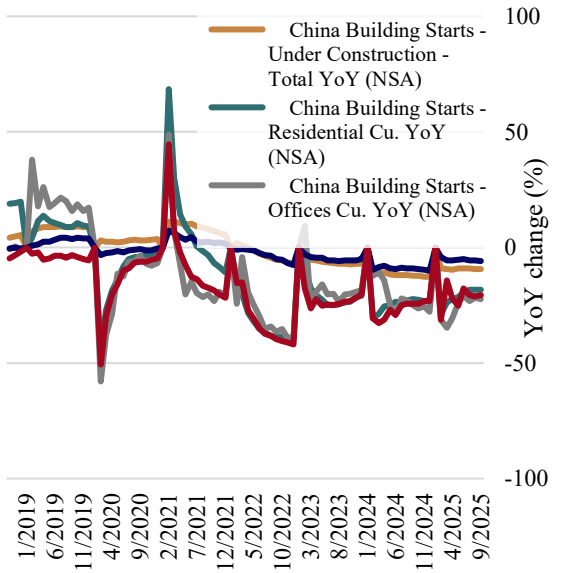
Source: Bloomberg

Figure 15: Real Estate Climate (China)



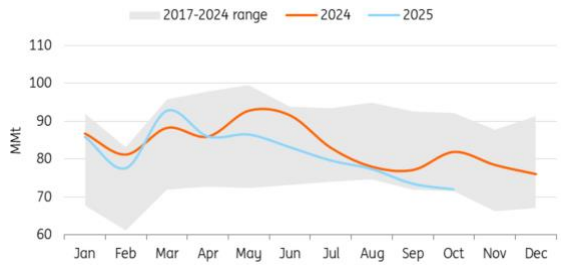
Source: Bloomberg

Figure 16: Various indicators of Chinese Real Estate: Chinese Property Slump Drags On



Source: Bloomberg

Figure 17: Chinese steel output is declining



Iron Ore

Introduction

Iron is the core ingredient of steel. The analysis of iron ore demand will focus on the construction industry, with a heavy focus on China since China is the main consumer of iron. A new mine in Guinea is set to open to 2026, thereby increasing its supply too.

Chinese demand for iron

Chinese PMI has dropped unexpectedly to 49.0 in Oct (down from 49.8), while property market has been easing for a while. Both are headwinds to iron ore spot price.

Sentiment in the real estate industry has been declining. Most recently, New World and Vanke's inability to repay their distressed debt has, once again, shaken up the property sector.

YoY growth indicators for Chinese real estate remain negative, despite stimulus from the government. This is possibly due to ever-declining property prices. In other words, it points towards oversupply of property in the market.

Chinese steel production declined in October due to output cuts at mills amid an anti-involution crackdown. Compared to 2024, October 2025 saw a ~10% decline in production, and a consecutively declining trend since May.

This points towards a headwind for Chinese demand for iron ore in the future.

Chinese self-reliance on iron ore

In September, Beijing has ordered steelmakers not to order iron from BHP Group (based on Australia) due to a pricing dispute.

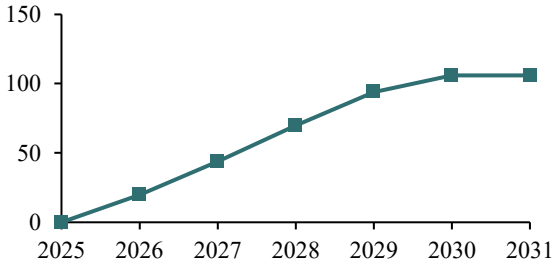
Iron scrap from Chinese steel producers have also become a major source of iron. This is a consequence from the steel boom in the past two decades.

Simandou (in Guinea) is expected to ramp up production and deliver iron into the market in 2026, but not so soon. The mine offers high-grade iron ore (averaging above 65% Fe), on par with iron mined from Australia and Brazil. I expect Chinese demand for iron from overseas producers is likely to drop. The question remains whether the rest of the world can absorb the excess supply arising from weakening Chinese of steel/iron.

Currently, the Simandou project is helmed by Winning Consortium Simandou (WCS) and Rio Tinto, with WCS seemingly having a bigger ownership. WCS has had history in Guinea, where one of her sister companies built bauxite mines and constructed a railway to a port, making the country the world's top supplier of the ore used to make aluminium. Their experience allowed them to be a key player in this project, as the same engineering feats were required to link Simandou to the rest of the world through the use of railways.

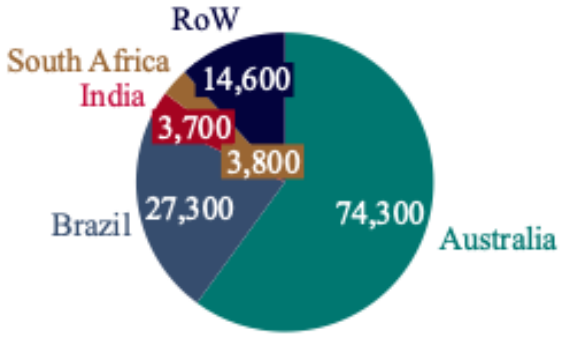
Source: ING Research

Figure 18: Projections of Simandou's extra production in million MT by Bloomberg Intelligence



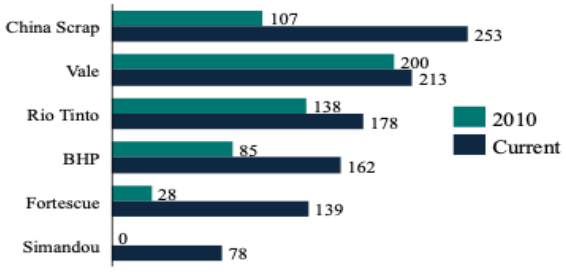
Source: Bloomberg

Figure 19: Sources of Chinese demand for Iron Ore, million MT



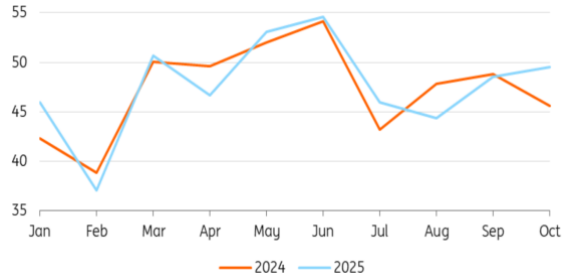
Source: Bloomberg

Figure 20: Sources of iron in million MT, adjusted for iron content



Source: Bloomberg

Figure 21: Iron Ore Shipments from Australia's Port Hedland, in million tonnes



Source: ING Research

In 2024, state-owned China Baowu Steel Group Ltd., the world's biggest steelmaker and likely the project's top customer, also acquired the largest shareholding in WCS.

In September, China Mineral Resources Group, China's state-run iron ore trader, has ordered steelmakers not to order iron from BHP Group (based on Australia) due to a pricing dispute. While this may only materialise as a negotiating tactic, it may undermine confidence in China's procurement approach.

It seems that iron ore buying from China will be rerouted from Australia to Simandou. Considering the above factors, China may use their self-reliance on iron supply as leverage in Australia-China relations—a similar tactic they used in negotiating tariffs with the US when it came to rare-earth metals.

Taken together, these developments underscore China's strategic push to reduce dependence on traditional iron ore suppliers and increase control over upstream resources. By securing equity stakes in projects such as Simandou and consolidating procurement under state-directed entities, China enhances bargaining power over pricing and supply terms while mitigating geopolitical and trade risks. While complete self-sufficiency remains unlikely in the near term, greater diversification and upstream integration position China to exert stronger influence over global iron ore markets, reinforcing resource security as a key component of its broader industrial and geopolitical strategy.

Supply of Iron

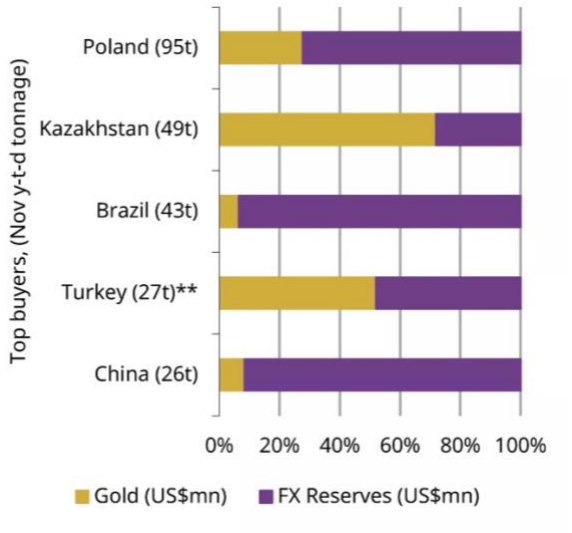
Global seaborne iron ore supply is expected to continue growing, with Australia and Brazil set to increase shipments.

Iron ore shipments from Australia's Port Hedland, a major Australian export terminal, rose to a record high in October at 49.5 million tonnes, up almost 8% from October 2024. Another major exporter, Brazil, shipped an average of 1.85 million tonnes per day in October. The country has hit record export volumes this year.

Vale (Brazil) recently announced in Dec 2025 that production next year would be between 335 and 345 million tonnes, below its earlier range of 340 to 360 million tonnes. This is in light of cooling demand from China, although demand from India and SEA is likely to stay.

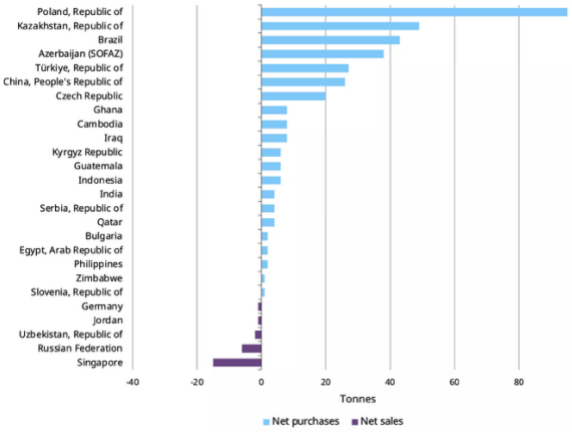
Beyond volume growth, the expanding seaborne supply also reflects improving logistics efficiency and the ramp-up of brownfield capacity rather than large-scale greenfield projects. While Australia and Brazil remain the dominant exporters, supply growth is increasingly front-loaded against a backdrop of uncertain demand, particularly from China's property sector. This imbalance raises the risk of episodic oversupply, increasing price volatility and limiting upside for iron ore prices unless demand from infrastructure spending, India, and Southeast Asia meaningfully accelerates.

Figure 22: Total gold holdings for top buyers in 2025



Source: IMF, respective central banks, World Gold Council

Figure 23: Purchases remains robust with Poland leading the pack



Source: IMF, respective central banks, World Gold Council

Figure 24: US Federal Funds Effective Rate 2025

Source: FRED

Gold

Introduction

Gold is a precious metal with both monetary and investment significance, widely regarded as a store of value and hedge against macroeconomic uncertainty. Unlike industrial metals, gold demand is not primarily driven by economic growth but by real interest rates, currency dynamics, geopolitical risk, and central bank reserve management. As such, gold often performs counter-cyclically relative to global growth and risk assets.

What Is Driving Global Demand for Gold?

Global gold demand is composed of four main segments: central bank purchases, investment demand, jewellery consumption, and technology use. Over the past year, central bank demand has remained structurally elevated, providing a key support pillar for prices. Investment demand has been more volatile, responding to changes in real yields and risk sentiment, while jewellery demand has been sensitive to price levels and regional income conditions.

Emerging markets, particularly China and India, remain the largest sources of physical gold demand. While higher prices have intermittently dampened jewellery consumption, cultural and savings-driven demand has remained resilient, especially during periods of currency weakness or financial stress.

How Do Monetary Conditions and Real Rates Affect Gold Prices?

Real interest rates remain the most important macro driver of gold prices. As inflation has moderated and major central banks have shifted toward policy easing by late-2025, real yields have declined from prior peaks, reducing the opportunity cost of holding non-yielding assets such as gold. This has supported renewed investment interest, particularly during episodes of equity market volatility.

U.S. dollar dynamics have also played a significant role. Periods of dollar weakness—driven by easing monetary policy and fiscal concerns—have tended to coincide with stronger gold performance, while dollar strength has capped upside during risk-on phases.

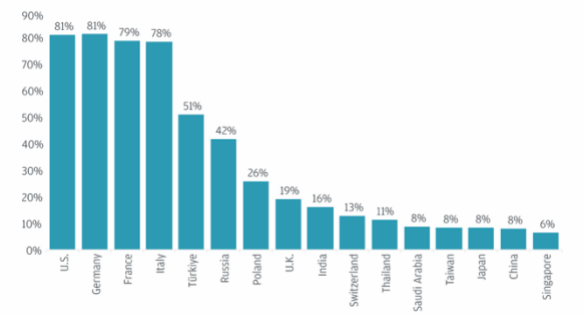
Growing Central Bank Demand

Central bank gold purchases have remained a defining feature of the gold market. Over the past few years, net purchases have been led by emerging market central banks seeking to diversify reserves away from U.S. dollar-denominated assets. This trend reflects concerns over geopolitical fragmentation, sanctions risk, and long-term fiscal sustainability in developed markets.

Weakening U.S. Dollar Supports Gold Demand

Alongside sustained central bank buying, a gradual weakening in the U.S. dollar has provided additional support for gold prices. By late-2025, monetary easing across developed markets, particularly in the U.S., has narrowed interest rate differentials and reduced the dollar's yield advantage, weighing on broad dollar strength. As gold is priced in U.S. dollars, periods of dollar softness have mechanically supported prices while improving affordability for non-U.S. buyers.

Figure 25: Gold as a percentage of total reserve holdings across select central banks



Source: World Gold Council, IMF, J.P. Morgan Commodities Research

Figure 26: Investors are increasing their AUM in gold as a %

Source: World Gold Council, IMF, J.P. Morgan Commodities Research

Figure 27: Investment Demand expected to continue to drive growth

Source: ICE Benchmark Administration, Metals Focus, World Gold Council

Beyond cyclical rate effects, structural diversification away from the U.S. dollar has become more pronounced. Growing use of local currencies in trade settlement, expanded bilateral swap agreements, and increased reserve diversification by emerging market central banks have incrementally reduced reliance on dollar assets. While the U.S. dollar remains the dominant global reserve currency, these trends reinforce gold's role as an alternative reserve asset, strengthening demand in an environment of declining dollar dominance and accommodative monetary policy.

Supply of Gold

Global gold supply remains structurally constrained, with annual mine production averaging ~3,100–3,200 tonnes in recent years and growing at <1% per annum. This limited growth reflects long project lead times, often 10–15 years from discovery to production, alongside declining ore grades and rising input costs. Average global gold ore grades have fallen from over 10 g/t in the 1970s to below 1.5 g/t today, materially increasing capital intensity and operating costs. Major producers continue to be concentrated in China, Australia, Russia, and Canada, which together account for roughly 40–45% of global output, underscoring limited geographic diversification.

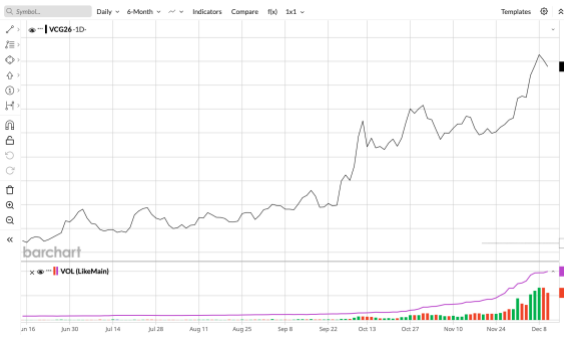
Recycling supply, primarily from jewellery and electronic scrap, contributes approximately 1,200–1,300 tonnes per year, or around 25–30% of total supply. While higher gold prices have encouraged incremental recycling, supply elasticity remains low, as recycling volumes respond slowly to price signals and are constrained by consumer behaviour. As a result, total gold supply has remained relatively inelastic even during periods of elevated prices. This structural rigidity limits the market's ability to respond quickly to demand shocks, reinforcing gold's price sensitivity to changes in real interest rates, currency movements, and central bank demand, and contributing to outsized price responses during shifts in macro and financial conditions.

Gold Outlook

Looking ahead, the outlook for gold remains structurally supportive amid a macro environment characterised by lower real interest rates, elevated sovereign debt levels, and persistent geopolitical uncertainty. While the transition to a more accommodative monetary policy stance has reduced the defensive urgency that dominated earlier tightening cycles, declining real yields continue to underpin gold's relative attractiveness as a non-yielding asset. At the same time, central bank purchases—particularly from emerging market economies—are expected to remain a key pillar of demand, providing a price-insensitive floor that limits downside risk.

That said, gold's upside may be moderated by periods of stronger global growth and risk-on sentiment, during which capital may rotate toward higher-yielding or growth-sensitive assets. As such, gold is likely to trade within a macro-driven range rather than enter a sustained parabolic phase. Over the medium term, its role as a strategic portfolio hedge against monetary debasement, fiscal slippage, and geopolitical fragmentation remains intact, positioning gold as a stabilising asset rather than a pure return driver in diversified portfolios.

Figure 28: 6 month chart, SHFE Feb 2026 Futures



Source: Trading View

Trade Idea: Bullish Chinese Copper: Long 2026 Feb SHFE Copper

Narrative

China's 15th Five-Year Plan reinforces a strategic pivot toward higher-value industrial production, technological self-reliance, and sustainable growth, all of which are structurally copper-intensive. Policy emphasis on advanced manufacturing, grid modernisation, data centres, and electrification is expected to drive steady demand for copper across power transmission, semiconductors, and industrial automation. Unlike prior cycles driven predominantly by property and construction, this phase of growth is more capital-efficient and technology-led.

At the same time, China's accelerating push into artificial intelligence and electric vehicles adds a second layer of demand support. AI infrastructure, requires significant copper usage for power delivery, cooling systems, and connectivity. As Chinese AI models gain global traction and domestic tech firms scale compute capacity to close the gap with U.S. peers, copper intensity across the digital economy is set to rise. Combined with resilient EV demand across Asia and policy-supported demand in Europe, these dynamics position Chinese copper demand to remain robust into 2026, supporting a constructive outlook.

Catalysts

China steps up AI game to level with the US, Asia EV demand rise due to strong growth, while Europe EV demand supported by fiscal stimulus and easing trade tensions

Chinese AI models are slowly gaining popularity, while tech firms are eyeing to be on par with the US in AI capabilities. For example, Chinese open-source models account for 30% of global AI use. Alibaba's Qwen is set to rival ChatGPT, with usage increasing 149% MoM from October 2025 to November. The tech firm announced plans to invest at least RMB 380B in three core areas of its AI strategy over the next three years: infrastructure for AI and cloud computing, development of foundational models and AI-native applications, and AI integration across existing businesses.

Risks

Slow increase in renewables capacity continue to weigh down on copper prices, surprise US exemption on tariffs for exchange-grade copper results in large flows of inventory from COMEX to SHFE and LME
The downside risk of an AI bubble is more contained with longing SHFE copper instead of COMEX or LME copper, since LME copper is a proxy for worldwide supply, and COMEX copper primarily serves the US market. SHFE, however, serves the Chinese market, which is more shielded from an AI bubble since the Chinese AI scene is not as developed as the US.

Take Profit: 94000
Stop Loss: 91000
Risk-reward: 7.3

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