

GLOBAL X

by Mirae Asset



Global X Copper Miners ETF (COPX)

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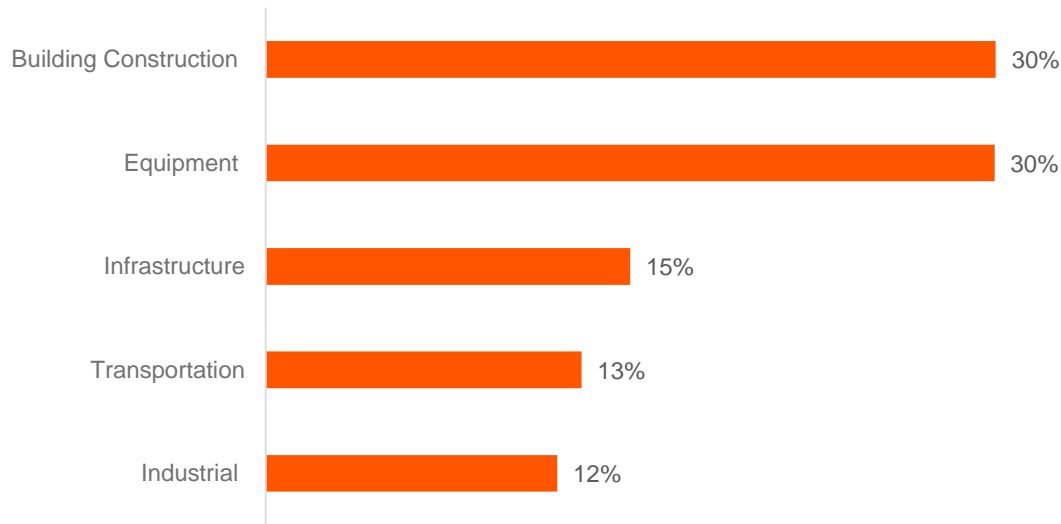


Exploring the Copper Miners Market

Market Outlook: Copper

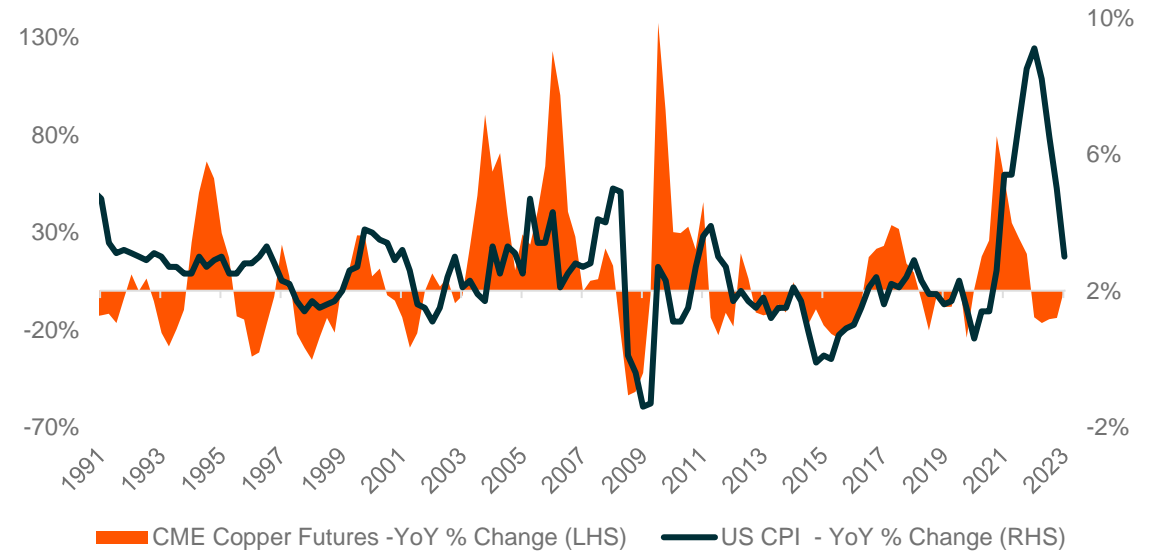
Copper’s credentials come from its wide use in the global economy. Unlike other metal commodities, copper is used in many products, its price increases can be passed down into final consumer products, which will then undergo inflationary pressures. As copper is used across the economy, these pressures can be felt in every sector, once again leading to consumer price rises. Copper futures, a popular way to get exposure to the commodity, tend to rise before general consumer prices rise, thus can be bought as a proactive **potential inflation hedge**.

Copper End Use



Sources: Global X ETFs with information derived from Bloomberg Intelligence as of June 2023.

Inflation Can Have an Impact on Copper Futures Prices

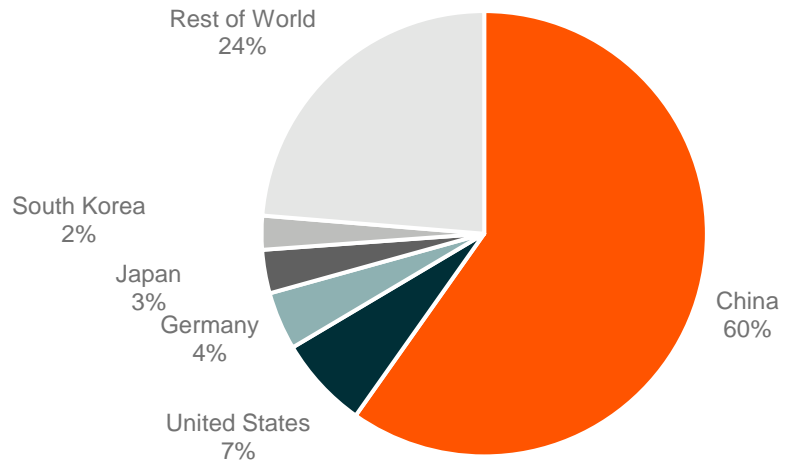


Sources: Global X ETFs with information derived from Bloomberg LP. Data from June 30, 1991 to June 30, 2023

Copper: China as the Key Driver of Demand and Refined Production

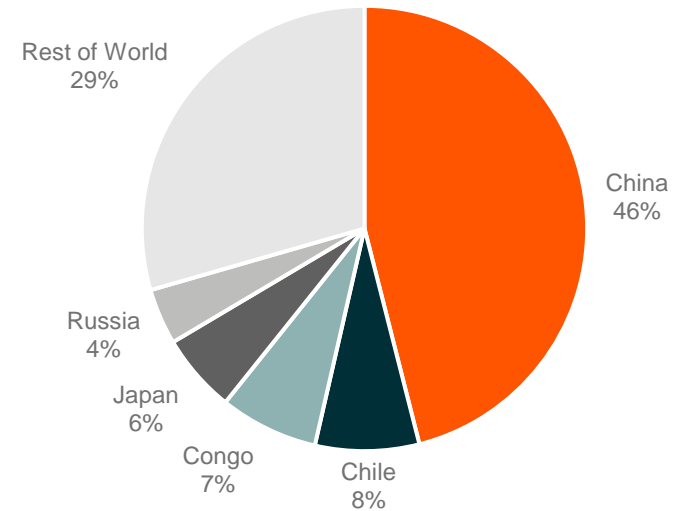
China is a key driver as the world's largest consumer of copper, accounting for more than half of the total demand. China's economic development has triplicated its copper demand in the last decades. Despite China dominating refined copper production, China is typically net short copper as it consumes more than it produces. Indeed, the early stages of industrialisation are very copper intensive as infrastructure, grid investment, and construction drive economic growth.

Copper Demand Share
Percent



Sources: Global X ETFs with information derived from Bloomberg LP. Data as of May 31, 2023

Copper Refined Production Share
Percent

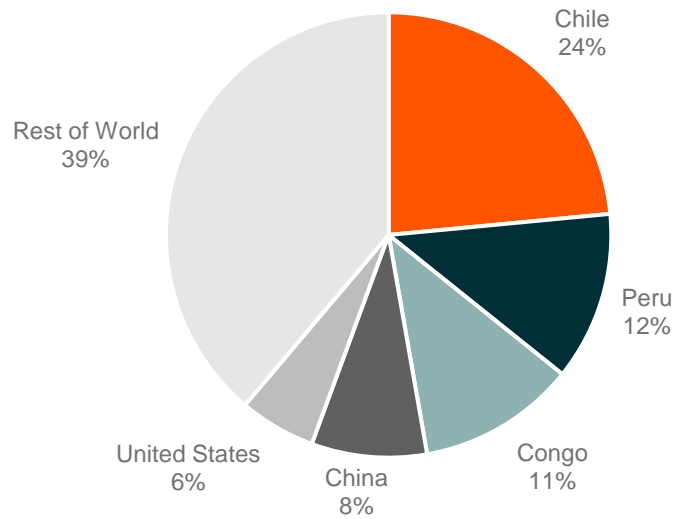


Sources: Global X ETFs with information derived from Bloomberg LP. Data as of May 31, 2023

Copper: Chile as the Main Player in Mine Production & Reserves

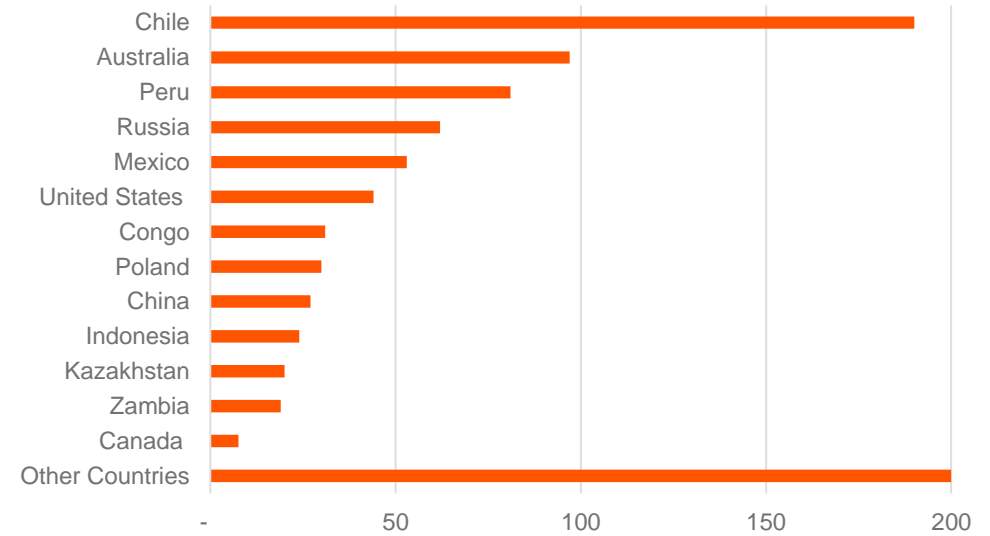
- In the past few decades, South America has emerged as the key region in terms of copper mine production. (**Chile and Peru alone provide 36% of the global copper supply**). Chile, Peru and Australia have the most copper deposits. Reserves refer to the minerals base that is economically mineable, but its extraction has not started yet. Typically, reserves grow as demand grows up to the point of geological limitations.
- Although supplies are plentiful, disruptions sometimes arise due to labour strikes, grade issues or natural disasters, for example, pit wall slides. Due to its importance in construction and power transmission, **the economic impact of any copper supply disruption can be high and support copper prices**. As these disruptions can impact local mine profits, these disruptions can have a positive impact on non-local mining operations as global supply slows.

Copper Mine Production Share
Percent



Sources: Global X ETFs with information derived from Bloomberg LP. Data as of May 31, 2023

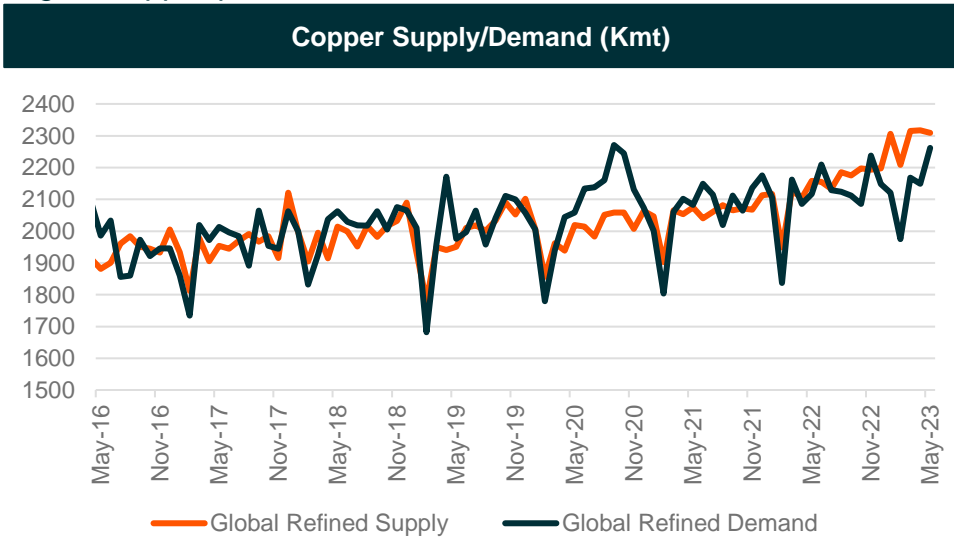
Copper Reserves
Million metric tonnes



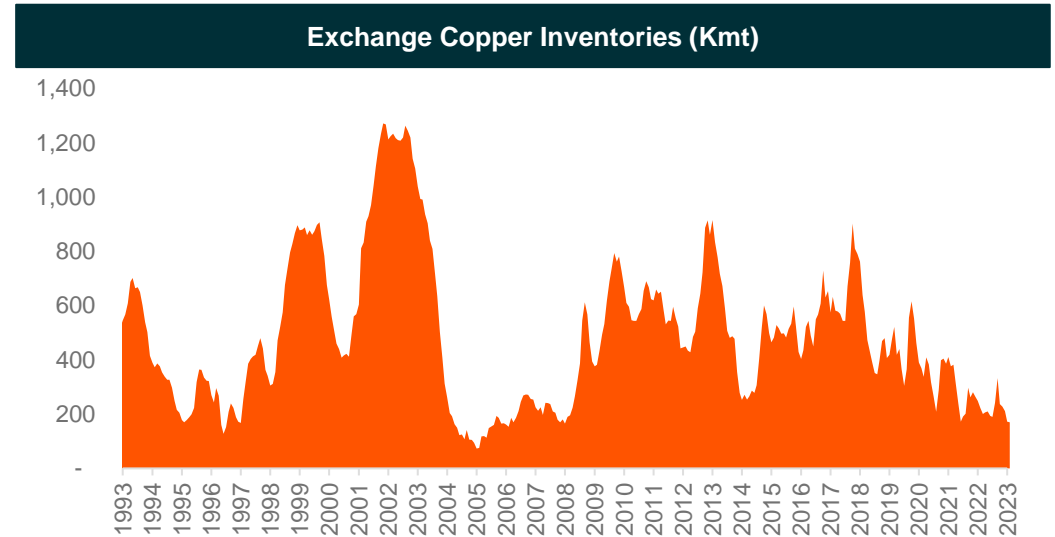
Sources: U.S. Geological Surveys, January 2023.

Copper Market Balance

- Considering the time and resources needed for the discovery and infrastructure buildout of new mines, **long lead times result in a timing mismatch between a pickup in demand and the consequent response in supply, accentuating the price dynamics.** The development stage of new copper mining capacity typically takes 4-12+ years, with brownfield projects on the quicker end of the spectrum and new greenfield projects taking significantly longer. Lead times can be considerably longer in countries where permitting is more complex.
- Exchange inventories reflect stockpiles that are tracked via COMEX¹, LME² and SHFE³ exchanges. They are not necessarily a representation of the entire universe. However, they provide a valid proxy, closely watched by the markets. Exchange stocks falling to critically low levels can contribute to higher copper prices.



Sources: Global X ETFs with information derived from Bloomberg LP. Data from May 30, 2016 to May 30 2023.



Sources: Global X ETFs with information derived from Bloomberg LP. Data from June 30, 1993, to June 30, 2023.

1. COMEX (The Commodity Exchange Inc.) is a Designated Contract Market (DCM) for CME Group, offering benchmark metals products. 2. LME (The London Metal Exchange) is a futures and forwards exchange with the world's largest market in standardized forward contracts, futures contracts and options on base metals. 3. SHFE (The Shanghai Futures Exchange) was formed from the amalgamation of the national level futures exchanges of China, the Shanghai Metal Exchange, Shanghai Foodstuffs Commodity Exchange, and the Shanghai Commodity Exchange in December 1999.

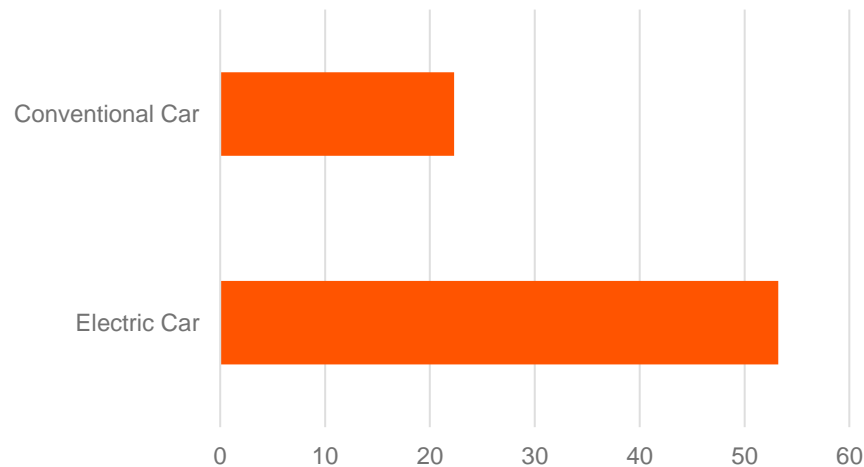
Copper: Decarbonisation

Copper is considered one of the core material building blocks for **clean energy technologies** because it has the highest conductivity of all non-precious metals. Copper’s key characteristics—conductivity, ductility, efficiency, and recyclability—make copper omnipresent in renewables, from solar panels and EV batteries to thermal energy and wind turbines. Not only is copper used within vehicle production but is also considered a vital commodity for various aspects of EV infrastructure, giving copper a strong growth tilt.

Beyond EVs and charging infrastructure, renewable energy sources like solar panels and offshore wind turbines require a relevant quantity of copper.

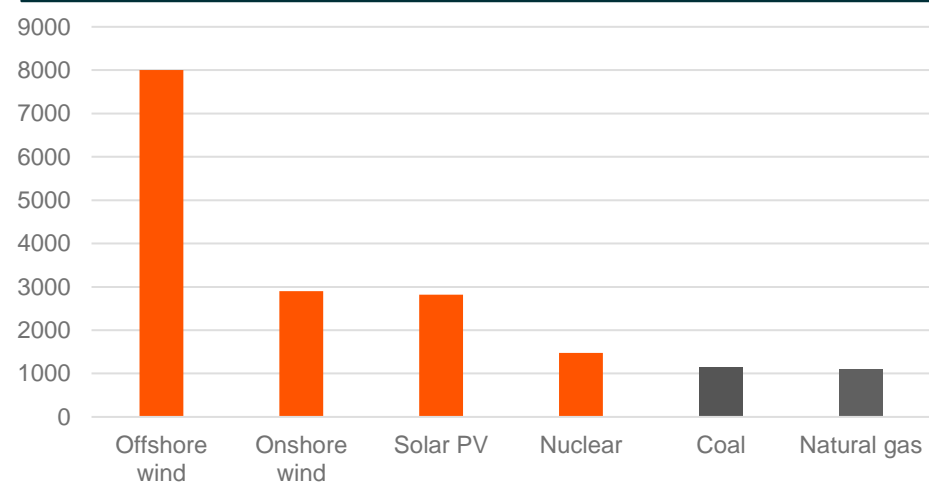
1. **Solar Power:** PV solar systems require a heavier amount of copper compared to traditional energy systems.
2. **Wind Farms:** In a wind farm, copper is used for generators, wiring, cable and step-up transformers.
3. **Electric Grid:** The surrounding infrastructure that connects these technologies to the electrical grid also uses copper to run reliably and efficiently.

Copper usage in EVs vs. ICE VEHICLES (kg/vehicle)



Sources: International Energy Agency, 2022. Minerals used in electric cars compared to conventional cars.

Copper usage in clean energy technologies compared to other power generation sources(kg/MW)



Sources: International Energy Agency, 2022. Minerals used in clean energy technologies compared to other power generation sources.

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Global X Copper Miners ETF (COPX)

COPX: Copper Miners ETF

Different ways to access Copper:

1 Physical Ownership

- Directly tracks spot prices in Copper

2 Options and Futures

- Closely tracks spot prices in Copper but can be susceptible to contango¹

3 Copper Mining Companies

- Leveraged plays on Copper prices, owing to the high fixed costs of extracting the metal
- Indirect exposure to copper given that miners can have revenues from other metals

4 Copper Mining ETF

- Invests in a diverse basket of companies involved in Copper mining

Index Methodology – Solactive Global Copper Miners Total Return Index

1 Security Selection Criteria

- Minimum AUM level of \$200 million non-current constituents and at least \$100 million if they are current constituents
- Average daily turnover of \geq \$ 0.5 million over the last three months for non-current constituents, and \$0.25 million for current constituents.
- Average monthly trading volume of at least 75,000 shares in each of the last six months (“Liquidity Criterion”)

2 Security Selection Process

- The index seeks to include companies that have or are expected to have significant exposure to the copper mining industry, this includes constituents that have:
 1. 50 < of revenue derived from copper mining and/or closely related activities (e.g., exploration or refining of copper)
 2. A the constituent is expected to generate a significant part of its revenues in copper mining and/or closely related activities in the future
- The minimum number of constituents is 20 and the maximum number of constituents is 40.

3 Weighting Scheme

- Index components are weighted according to their free float market capitalization.
 - Each component has a max weight of 4.75%
 - The aggregate weight of companies that do not fulfil the liquidity criterion cannot exceed 10% of the index weight.

4 Rebalance/Reviews

- The index follows a semi-annual reconstitution and rebalancing schedule. Rebalances are made on the last trading day of April and October
- Listing Standard Review: The index follows a quarterly continuous listing standard review, made on the last trading day of January, April, July, and October.

Source: 1. Contango is when the spot price of a commodity trades below its future price.

COPX: Copper Miners ETF

COPX invests in a broad basket of companies involved in copper mining.



Targeted Exposure
COPX is a targeted play on copper mining.



ETF Efficiency
In a single trade, COPX delivers efficient access to a basket of companies involved in the mining of copper.



Long-Term Potential
Copper is an essential input in electric vehicles, renewable energy storage, and other forms of next-generation infrastructure that we expect to gain popularity.

Key Facts	Inception Date: 04/19/10	Stats & Fees	Total Expense Ratio: 0.65%
	Ticker: COPX		Number of Stock Holdings: 38 ¹
	Tracking-Index: Solactive Global Copper Miners Total Return Index		

COPX SECTOR BREAKDOWN¹

Sector	Percentage
Materials	99.11%
Industrials	0.51%
Other	0.39%
Energy	0.00%

COPX TOP 10 HOLDINGS¹

Name	Ticker	Weight
Lundin Mining Corp	LUN US	5.53%
Ivanhoe Mines Ltd	IVN US	5.43%
BHP Group Ltd	BHP US	5.29%
Grupo Mexico SAB de CV	GMEXICOB US	5.23%
Teck Resources Ltd	TECK/B US	5.13%
Freeport-McMoRan Inc	FCX US	5.10%
KGHM Polska Miedz SA	KGH US	5.10%
Glencore PLC	GLEN US	5.09%
Antofagasta PLC	ANTO US	5.06%
First Quantum Minerals Ltd	FM US	5.06%

1. Source: Bloomberg, as of 6/30/2023. Holdings are subject to change. "Other" classifies a company as one that does not primarily fit into any of the other sectors. It can include companies with diverse range of business activities or not primarily focused on a specific industry, "Other" may also include cash positions and/or allocations outside of equities such as currency positions.

Global X ETFs

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GLOBAL X ETFS RESEARCH

Copper Update: China's Demand and Renewed Supply Risks to Be Supportive of a Market Rebound

Authored by
Rohan Reddy
Director of Research

Date: April 12, 2023
Topic: **Thematic**

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Related ETFs
Please click below for fund holdings and important performance information.
COPX - Copper Miners ETF

Copper is a workhorse metal in the global economy given its high ductility, conductivity, and corrosion-resistant properties. Today, clean energy initiatives are catalysts that could lead to higher secular demand. Another major demand factor is the possibility of a quicker-than-expected economic recovery in China, driven by the recovery in its influential property sector. Demand is only one side of the story, though, as production disruptions in key South and Central American regions add to concerns that the copper market may be heading into a deficit. In this piece, we discuss these factors and more, including how investors may want to consider exposure to copper.

Key Takeaways

- The recovery of China's property market is a critical component of the trajectory for global copper demand. In our view, the Chinese government's latest rescue package can lead to a robust rebound in China's building and construction.
- Supply and inventory risks are a consideration with copper being a core material building block for renewable power grid and electric vehicle (EV) infrastructure.
- We believe copper presents compelling investment opportunities, including through leveraged plays like copper miners.

China's Property Market Recovery to Support Copper Demand

China is the biggest consumer in the world, using more than half of the world's supply.¹ At the center of China's consumption is its building and construction sector, which accounts for about 30% of total copper end use.² How China's property sector bounces back from COVID-induced slowdowns is a key factor in the trajectory for copper demand. The massive property sector rescue package that the government unveiled in November 2022 should help.³ This rescue package is more pragmatic and comprehensive than earlier measures, signaling the central government's determination to support developer financing and manage the spillover risks.

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Appendix: Copper

Market Outlook: Copper

- Bloomberg Intelligence. (2023, June). Bloomberg Terminal Function BI COPPG. Downstream. Total Copper Demand by End Use Sector.
- Global X ETFs with information derived from Bloomberg LP. (n.d.). YoY% price change graph of CME Copper Futures and US CPI Index. Data from June 30, 1991 to June 30, 2023

Copper: China as the Key Driver of Demand and Refined Production

- Global X ETFs with information derived from Bloomberg, L. P. (n.d.). Copper demand share [Data set]. Data as of May 31, 2023.
- Global X ETFs with information derived from Bloomberg, L. P. (n.d.). Copper refined production share [Data set]. Data as of May 31, 2023.

Copper: Chile as the Main Player in Mine production & Reserves

- Global X ETFs with information derived from Bloomberg, L. P. (n.d.). Copper mine production share [Data set]. Data as of May 31, 2023.
- U.S. Geological Surveys. (2023, January 31). Mineral Commodity Summaries: Copper.

Copper Market Balance

- Global X ETFs with information derived from Bloomberg LP. (n.d.). Graph of Global Refined Supply and Demand of Copper. Data from May 2016 to May 2023.
- Sources: Global X ETFs with information derived from Bloomberg LP. (n.d.). Graph of exchange inventories, calculated as the sum of COMEX, LME and SHFE Copper Inventories. Data from June 30, 1993 to June 30, 2023.

Copper: Decarbonisation

- International Energy Agency (2022, October). Minerals used in electric cars compared to conventional cars.
- International Energy Agency (2022, October). Minerals used in clean energy technologies compared to other power generation sources