ANNUAL PERFORMANCE REVIEW – COPPER

2021-2022

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1. Background

a) Brief about the commodity such as sample picture, lifecycle and various varieties/grade of the commodity found in India

Copper is a soft, malleable, and ductile metal with very high thermal and electrical conductivity. Copper is one of the few metals that occurs in nature in directly usable metallic form (native metals) and is an important non-ferrous base metal having wide industrial applications, ranging from defence, space programme, railways, power cables, mint, telecommunication cables, etc. India is not self-sufficient in the production of copper ore. In addition to domestic production of ore and concentrates, India imports copper concentrates for its smelters. The domestic demand for copper and its alloys is met through domestic production, recycling of scrap and by imports.

Value Chain for Copper

Various grades of Copper Produced in India

The total reserves/resources of copper ore as on 1.4.2015 as per NMI database based on UNFC system are estimated at 1.51 billion tonnes. Of these, 207.77 million tonnes (13.75%) fall under 'Reserve's category' while the balance 1.30 billion tonnes (86.25%) are placed under 'Remaining resources' category. Gradewide there are no reserves with 1.85% or more copper grade. However, 203.83 million tonnes reserves fall under 1% to below 1.85% Cu grade. Of the total ore resources 8.28 million tonnes (0.55%) comprise ore containing 1.85% Cu or more and 657.92 million tonnes (43.53%) resources fall under 1% to below 1.85% Cu grade.

Source: India Mineral Yearbook

b) Commodity fundamentals and balance sheet as per the following format (to be prepared based on publicly available information on best effort basis

Global Copper Scenario		
000' MT	2020	2021(e)
World Mine production	20,662	21,156
World Refined Copper Production	24,547	24,825
World Refined Copper usage	24,963	25,264
Source: International Copper Study Group		

India Copper Scenario		
000' MT	2020-21 (p)	2021-22 (e)
Production*	3,378	3,386
Imports	415	1,019
Exports	82	35
Total Supply	3,793	4,405
Consumption	3,711	4,370
Ministry Of Mines ****Copper ore and Concentrates Numbers are considered***		

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Top 10 Major producing countries

Top 10 Major producing countries (000' tonnes)		
Country	2020	2021
Chile	5,730	5,600
Peru	2,150	2,200
China	1,720	1,800
Congo (Kinshasa)	1,600	1,800
United States	1,200	1,200
Australia	885	900
Zambia	853	830
Russia	810	820
Indonesia	505	810
Mexico	733	720
Source: U.S. Geological Survey		
mine production numbers are considered		

Top 10 Major consuming countries

Top 10 Major consuming countries (In 000 tonnes)		
Country	2020	2021
China	14,489	13,713
United States	1,749	1,796
Germany	1,051	1,021
Japan	859	903
South Korea	632	609
Italy	460	567
India	421	496
Turkey	433	471
Mexico	380	436
Taiwan	378	430
Source: Bloomberg		
Note: Refined copper demand numbers are considered		

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Top 10 Major Exporting countries

Top 10 Major Exporting countries (In $ Million)			
Country	2020-21	Country	2021-22
Chile	16,268	Chile	26,785
Dem.Rep. of the Congo	6,711	Japan	7,074
Japan	5,002	EU	4,162
EU	3,693	Australia	4,025
Australia	2,651	Germany	3,212
Poland	2,113	Poland	2,932
Philippines	1,641	Indonesia	2,486
Zambia	1,366	Philippines	2,124
Bulgaria	1,349	Belgium	2,002
Indonesia	1,322	China	2,001
Source: UN Comtrade			

Top 10 Major Importing countries

Top 10 Major Importing countries (In $ Million)			
Country	2020-21	Country	2021-22
China	33,097	China	27913.0
USA	4,996	USA	10301.8
EU	4,655	EU	8644.9
Germany	3,880	Italy	6596.0
Italy	3,644	Germany	6341.9
Turkey	2,510	Turkey	4178.8
Thailand	1,461	Brazil	2745.1
Brazil	1,363	Netherlands	1930.2
Malaysia	1,266	Malaysia	1768.8
India	1,072	Mexico	1499.4
Source: UN Comtrade			

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Top 10 Major producing States in India

Not Available

c) Major changes in the polices governing trade in the spot markets of the commodity

There were no major policy changes issues which had any significant on Copper prices in India for financial year 2021-22

d) Geopolitical issues in the commodity and its impact on Indian scenario.

Factors Affecting Copper prices in FY2021-22

- Fresh Lockdowns in China raised concerns about a slowdown in economic growth
- Conflict Between Russia and Ukraine
- Supply Disruptions due to sanctions against Russia
- Rise in crude oil prices

2. Trading related parameter

Note: There was no trade in copper contracts in FY2021-22

a. Monthly and Annual traded volume

Nil

b. Annual traded volume as proportion of total deliverable supply

Nil

c. Annual traded volume as proportion of total annual production

Nil

d. Annual average Open interest as proportion of total production

Nil

e. Annual average Open interest as proportion of total deliverable supply

Nil

f. f. Monthly and Annual quantity of delivery

Nil

g. Monthly and Annual quantity of delivery

Nil

h. Monthly and Annual value of delivery

Nil

i. Average Monthly and Annual Average Open Interest (OI)

Nil

j. Annual average volume to open interest ratio

Nil

k. Total number of unique members and clients who have traded during the financial year

Nil

l. Ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest (Annual average as well as maximum daily value)

Not Available

m. Number of unique FPOs / farmers and VCPs/hedgers who traded in the financial year

Not Applicable

n. Algorithmic trading as percentage of total trading

Nil

o. Delivery defaults

- Number of instances = Nil
- Quantity involved = Nil
- Value involved = Nil

3. Price movements

a. Comparison, correlation, and ratio of standard deviation of Exchange futures price vis-à-vis international futures price (wherever relevant comparable are available)

Not Available

b. Comparison, correlation, and ratio of standard deviation of Exchange futures price vis-à-vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).

Not Available

c. Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.

Not Available

d. Correlation between international futures & international spot prices along with ratio of standard deviation (wherever relevant comparable are available).

The Correlation was 0.9054

The Ratio of Standard deviation was 0.56

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e. **Comparison of Exchange polled price and mandi price (in case of agricultural commodities) / other relevant price (in case non-agricultural commodities) at basis centre**

f. **Maximum & Minimum value of daily futures price volatility and spot price volatility along with disclosure of methodology adopted for computing the volatility.**

Commodity	Max of Daily Futures Price Volatility %	Min Daily Futures Price Volatility %	Max of Daily Spot Price Volatility %	Min Daily Spot Price Volatility %
Copper	-	-	5%	-3.79%

g. **Number of times the futures contract was in backwardation/contango by more than 4% for the near month contract in the period under review**

Not Applicable

4. Other's parameters

a. **Qualitative and quantitative measure for Hedge effectiveness ratio and basis Risk (Volatility of Basis) along with disclosure of methodology adopted for such calculations**

Not Available

b. Details about major physical markets of the commodity vis-à-vis market reach in terms of availability of delivery centers (information to be provided state-wise and UT-wise)

City	State
Coimbatore	Tamil Nadu
Bhilai	Chattisgarh
Rudrapur	Uttarkhand
Noida	Uttar Pradesh
Kochi	Kerala
Angul	Odisha
Gandhinagar	Gujarat
Vadodara	Gujarat
Mumbai	Maharashtra
Bangalore	Karnataka
Sri City	Andhra Pradesh
Margao	Goa
Aurangabad	Maharashtra
Hyderabad	Andhra Pradesh
Coimbatore	Tamil Nadu
Bhilai	Chattisgarh
Rudrapur	Uttarakhand
Source: Wikipedia	

Note: BSE has a delivery centre at Bhiwandi

c. Details about major physical markets of the commodity and average Open Interest for each month generated from those regions

Same as point (4b)

Information on region wise Open Interest is Not available

d. Details, such as number and target audience, of stakeholders' awareness programs carried out by the exchange

Not Available

e. Steps taken / to be undertaken to improve hedging effectiveness of the contracts as well as to improve the performance of illiquid contracts

Not Available

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