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## Copper Industry: FY18 update and Outlook for FY19

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### Domestic Production, Consumption, Exports and Imports of Copper during FY18

India ranks 5th in global refined copper production and during FY18 refined copper production grew by 6.0% y-o-y compared with 0.9% last year. *Increase in production can be attributed to better operational efficiencies resulting in better capacity utilization.*

Demand for refined copper has risen by 0.9% from its previous year's de-growth on account of use of copper in building and construction activities and in the electrical wiring segment. Development of the SMART cities, metro projects and the construction of renewable energy have augmented the use of copper during FY18 (April-February).

India has been a net exporter of refined copper, exporting 'A grade' copper. Exports during the year (April-February) were 344 thousand tonnes which increased by 14.7% over FY17 (April-Feb). Value-wise refined copper exports during FY18 (April-February) was USD 2,201 million vis-à-vis to the value being USD 1,545 million during FY17. Exports have increased as global markets copper markets were facing a deficit due to low availability of copper ore, which was beneficial to India as we have a low consumption base and surplus production.

China is the main importer of Indian copper.

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**Table 1: Domestic Production, Imports, Exports and Consumption of Refined Copper (KT)**

	Production	% change	Consumption	% change	Exports	% change	Imports	% change
FY16	790	-	456	-	290	-	31	-
FY17	795	0.6%	454	-0.4%	300	3.4%	34	10.1%
FY18	843	6.0%	458	0.9%	344	14.7%	37	8.9%

Source: CMIE

Note: Production data is from April to March whereas Consumption, Exports and Imports are from April to February.

### Domestic Copper Smelter capacity

Hindustan Copper Limited (HCL) in Public Sector, Hindalco Limited and Vedanta Industries Limited in Private Sector are three major players which dominate the copper industry in the Indian Markets. India's total smelting and refining capacity is approximately 999.5 KT\*\*.

**Table 2: Domestic Smelter Capacity (in terms of KT)**

Sr. No	Company	Location	Smelting and Refining Capacity
1.	Hindalco	Dahej	500
2.	Vedanta	Tuticorin	400
3.	Hindustan Copper	Various Locations*	99.5

Source: International Copper Study Group (ICSG)

\*Hindustan Copper Limited (HCL) is a vertically integrated company. The mines owned by HCL have the Smelting facilities located right next to their mines (Khetri Copper Complex which is in Rajasthan and Indian Copper Complex which is located in Jharkand).Gujarat Copper Project (formerly known as Jhagadia Copper Limited, acquired by HCL),is into smelting and refining of secondary copper

\*\*KT kilotonnes

### Vedanta's Tuticorin Smelter controversy

The Tamil Nadu government ordered permanent closure of Sterlite's copper factory in Thoothukudi on 28 May 2018. The government's order follows the Tamil Nadu Pollution Control Board's (TNPCB) directive to close the unit citing constitutional provisions to protect and improve the environment, and 'in larger public interest'.

Vedanta had proposed for the expansion of its Tuticorin smelter from its existing 400 KT capacity to 800 KT which started causing protests from the locals regarding the environmental hazards it posed in the area (contamination of the groundwater and respiratory issues).

Initially the expansion project had been kept on hold but as the protests turned violent which resulted in casualties the 2018-2023 license renewal of the Tuticorin plant was rejected by the Tamil Nadu Pollution Control Board and the Tamil Nadu government has ordered for the permanent closure of the Tuticorin Smelter.

## Global Developments

### Global Supply Demand of Mined Copper

Globally Chile (30%) ranks 1<sup>st</sup> in world mined copper production followed by Peru (11%) and China (10%). Chile contributes to 1/3 of the world's mined copper production.

**Table 3: Global Mined Copper Production (KT)**

	CY15	CY16	CY17
Global Mined Copper Production	19,132	20,217	20,028
% Change (y-o-y)	-	5.7%	-0.9%

Source: ICSG

Global mined copper production had fallen during CY17 on account of the supply disruption caused due to the issues faced in the Chilean (Escondida Copper Mine) and Indonesian (Grasberg UG Copper) copper mines (during Q1CY17). Chilean mine workers had gone on a strike in order to oppose the new labour laws while the Grasberg mine operator, Freeport-McMoRan was facing an issue regarding the renewal of its copper concentrate export permit with the Indonesian government. There had also been an 11% drop in China mined copper production during CY17 compared with CY16.

Consumption-wise, China (50%) is the largest consumer of refined copper as well where 46% of the refined copper is used in the power sector followed by its usage in making of household appliances and manufacturing of automobiles.

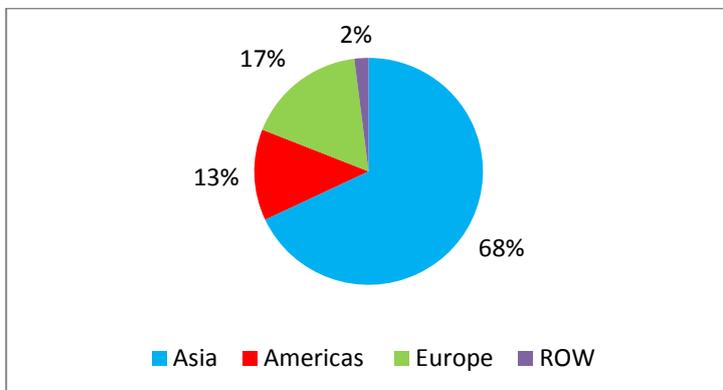
### Global Supply Demand of Refined Copper

**Table 4: Global Refined Copper Production and Demand (KT)**

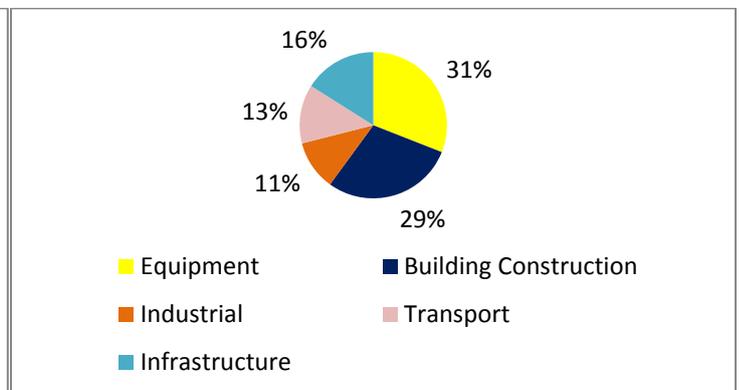
	CY15	CY16	CY17
Global Refined Copper Production	22,870	23,309	23,503
% Change (y-o-y)	-	1.9%	0.8%
Global Refined Copper Demand	23,041	23,429	23,758
% Change (y-o-y)	-	1.7%	1.4%
Surplus/Deficit	-171	-120	-255

Source: ICSG

**Chart 1: Region- Wise Total Copper Demand during CY17.**



**Chart 2: World End use demand of Refined Copper**



Source: ICSG

Globally the production of refined copper has remained subdued (0.7% growth) due to the low availability of mined copper. Chile has reported a decline of 7% of refined copper and Japan has also registered a drop of 4.2% during CY17 as compared with its CY16 production levels. The main contributors to the increase in production were China and India.

Demand for copper has registered a marginal growth rate of only 1.4% during CY17 due to the fall in demand from the Chinese economy during the start of CY17 and also because demand of copper from the Eurozone was still recovering. Globally the demand of copper is to rise from the transportation segment due to impetus given for the manufacturing of electric vehicles and from capacity additions in the renewable energy segment. Demand from the equipment, building construction and infrastructure sectors have also supplemented to the refined copper usage.

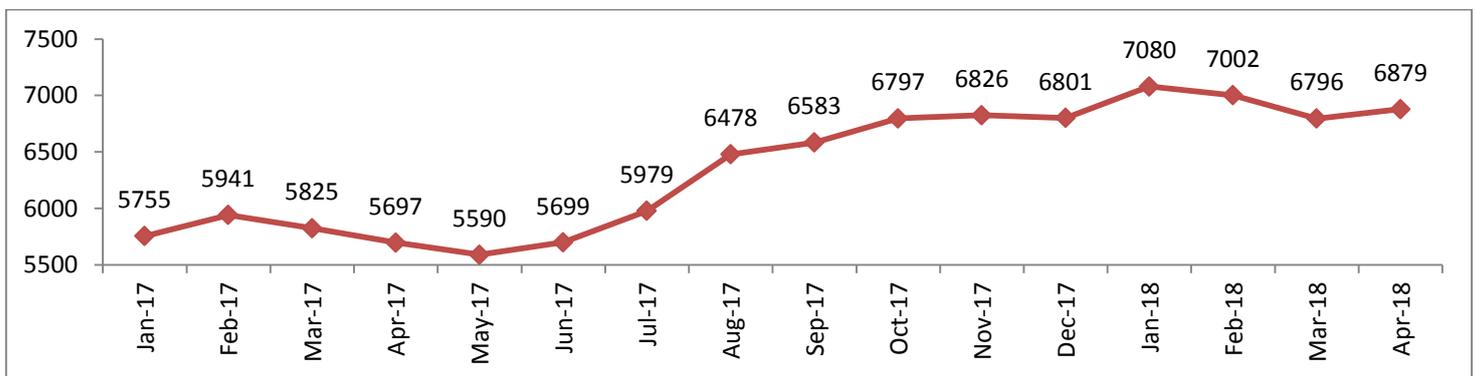
**Global Copper Trade Movements**

Chile, Japan, Russia, Australia, Zambia, China, Kazakhstan, Netherlands, India and Peru are the major exporters of refined copper where as China, Germany, United States, Italy, Taiwan, South Korea, Turkey, Thailand, Malaysia and United Arab Emirates are the major importing countries of refined copper.

Chile (36%) is the major exporter of mined copper and China is a major importer of mined (65%) and refined copper (36%). There has been an increase of refined copper imports from the North American and South American regions particularly from the United States.

**Global Copper Price Movements**

**Chart 3: Price movements of LME Copper during FY18 (USD/tonne)**



Source: LME

**Table 5: LME Copper price trends (USD/tonne)**

	FY16	FY17	FY18
LME Copper	5,276	5,159	6,447
Growth (%) y-o-y		-2.2%	25.0%

Source: LME

Global copper prices have risen by 25% during FY18. Prices had risen on account of supply side distortions due to the disruptions in the Chilean and Indonesian mines. Price of copper started rallying from December 2017 onwards due to pick-up of refined copper demand in China and also because of the shutdown of polluting smelters in China, which have not been following the efficiency norms. The Chinese government has taken a stance to improve the air quality and reduce pollution in the country.

## CARE Ratings Views and Opinion: Outlook for Copper Industry for FY19

*In light of the order of the permanent closure of the Tuticorin smelter, the production of domestic refined copper is expected to be around **510 KT during FY19 resulting in 40% drop from the FY18 production levels.** India's refined copper production during FY18 was 843 KT.*

- *India has been a net exporter of refined copper (A 'grade quality) as there has been excess production in the domestic markets.*
- *The Tuticorin smelter accounts for 40% of the country's copper smelting capacity, and has contributed to 48% of the refined copper production during FY18.*
- *Given that refined copper consumption is to increase in the given backdrop of robust infrastructure activities undertaken by the government, closure of smelter will impact the trade dynamics, of India leading us to resort to additional imports changing the country from a net exporter to a net importer. India exported 344 KT and imported 37 KT of refined copper during FY18 (April-February)*
- *Even if the two existing producers (Hindalco and HCL) increase their utilisation rate it will not be sufficient to meet the domestic demand. The industry's current utilisation level is well over 80% and even if they raise their utilisation levels to 100% they cannot meet the shortfall.*
- *Hindalco will not be able to divert its production to the domestic market due to its long-term export contracts.*

*Demand for the domestic copper market is dependent largely on the electrical (34%), building & construction (8%), automobiles (11%) and the consumer durables segments (8%). We estimate **domestic demand of refined copper to be around 530-535 KT during FY19.***

- *The SMART City development, impetus on increase of renewable energy, demand from the automobile segment and capex activities related in the railways and defense sector is likely to further support the domestic demand for the metal.*

*Global copper prices to hover around USD 6,800-7,000 per tonne during the short to medium term period on a monthly basis.*

- *LME Copper prices are to rise in the coming few months as there has been a pick up Chinese Demand for refined copper since the start of the CY18.*
- *China's decision to place a ban on copper scrap imports may also play a role in keeping copper prices high as demand for refined copper is expected to increase in the world markets*
- *It is expected that the copper supply will still be facing a deficit in the near future as copper concentrates are high in demand and supply is limited.*