NSE LEAD DERIVATIVES

Performance Review

2023-24

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Performance Review of Commodity Derivatives - FY 2023-24

Lead Futures & Lead Mini Futures

1. Background

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

Lead is a heavy metal that is denser than most common materials. Lead is soft and malleable, and also has a relatively low melting point. When freshly cut, lead is silvery with a hint of blue; it tarnishes to a dull grey colour when exposed to air. Production of lead is increasing worldwide due to its use in lead-acid batteries. There are two major categories of production: primary from mined ores, and secondary from scrap. In 2014, 4.58 million metric tons came from primary production and 5.64 million metric tons from secondary production. The top three producers of mined lead concentrate in that year were China, Australia, and the United States. The top three producers of refined lead were China, the United States, and India.

Most lead ores contain a low percentage of lead (rich ores have a typical content of 3–8%) which must be concentrated for extraction. During initial processing, ores typically undergo crushing, dense-medium separation, grinding, froth flotation, and drying. The resulting concentrate, which has a lead content of 30–80% by mass (regularly 50–60%), is then turned into (impure) lead metal

Lead is principally used for manufacturing batteries, especially the ones used in automobiles, motorcycles, electric cars, and bicycles. Its incredible density provides unrivaled protection from radiation and is used in hospitals, dental surgeries, laboratories and nuclear installations. Lead-acid batteries are a vital back-up emergency power supply during power failure in computer installations, banks, telephone exchanges, and aircraft control towers, among others.

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

Table – Fundamentals & Balance Sheet (Thousand metric tons)

Global Scenario	2022	2023
Opening Stocks	-	-
Production	4,460	4,500
Consumption	-	-
Closing Stocks	-	-

Source: MCS USGS 2024

Table - Indian Balance Sheet (In Tonnes)

Indian Scenario	2022-23	2023-24
Lead Concentrate Production	3,76,666	-
Lead Concentrate Export	137	58
Lead Concentrate Import	5,558	4,875

Source: Ministry of Mines, Government of India (mines.gov.in), Ministry of Commerce and Industry

Top 10 major producing countries (in Thousand Tonnes)

Countries	2022	2023 (E)
China	1,950	1,900
Australia	435	440
United States	273	270
Mexico	273	270
Peru	255	250
India	220	220
Russia	210	200
Bolivia	90	90
Sweden	75	70
Turkey	67	70

Source: MCS USGS 2024

Top 10 major consuming countries (Thousand metric tons)

Country wise consumption data is not available in public domain.

Top 10 major exporting countries (in US $ Million)

Name of Country	2022	2023
Australia	773.17	757.60
India	470.84	719.59
United Kingdom	610.71	602.65
Germany	388.94	474.98
China	313.45	471.89
Canada	388.46	400.32
Belgium	342.69	338.05
Malaysia	231.73	302.00
France	245.82	248.18

USA	192.93	235.42

Source: UN Comtrade Database, HS Code: 78

Top 10 major importing countries (in US $ Million)

Countries	2022	2023
USA	1558.43	1302.02
India	763.28	991.35
Germany	654.18	680.19
United Kingdom	449.76	451.87
Italy	252.99	397.08
Türkiye	456.38	385.74
Czechia	393.05	374.39
Spain	281.78	320.27
Poland	210.26	256.12
Greece	166.97	183.27

Source: UN Comtrade Database, HS Code: 78

Top Major Lead Producing Mines in India (in Thousand Tonnes)

Name	Location	2023
Sindesar Khurd Mine	Rajasthan	102.06
Zawar Mine	Rajasthan	62.56
Rampura Agucha Mine	Rajasthan	47.88
Rajpura Dariba Mine	Rajasthan	7.31
Kayad Mine	Rajasthan	3.81

Source: Mining Technology.com

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

India's Foreign Trade Policy (FTP) 2023, launched in 2023-2024, aims to enhance exports and streamline import and trade of commodities, including lead. The policy focuses on four key pillars: Incentive to Remission, Export promotion through collaboration, Ease of doing business, and Emerging Areas, including e-commerce and developing districts as export hubs. The policy aims to boost India's exports to $2 trillion by 2030, reflecting the government's vision to deepen integration with the global value chain and boost economic growth. Following extensive consultations, the FTP 2023 aims to provide a conducive environment for traders by reducing transaction costs and introducing e-initiatives.

It also addresses the strategic control of exports of dual-use items and technologies (SCOMET), potentially including lead (Pb). The policy's approach to emerging areas suggests a forward-looking stance that could impact lead trade, considering its applications in various

industries and increasing emphasis on environmental standards. The overall trade deficit for India is estimated to have improved by 35.77% from the previous fiscal year, indicating a more balanced trade scenario that could affect import policies for commodities like lead. The Interest Equalization Scheme on pre and post-shipment rupee export credit has also been extended, potentially influencing lead trade financial aspects. Stakeholders in the lead industry should review the policy details and stay informed about any updates or changes directly affecting lead trade. The policy's open-ended nature allows for adjustments and refinements over time, requiring traders and businesses to remain agile and responsive to new regulations or opportunities.

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

The trade of lead in India between April 2023 and March 2024 was influenced by a complex interplay of geopolitical factors. The ongoing Russia-Ukraine conflict continued to disrupt global supply chains, causing volatility in commodity markets and impacting the availability and pricing of lead. India's strategic position as G20 Chair and its role in the UN Security Council allowed it to navigate these challenges while advocating for stability in trade policies. Additionally, the tension between India and China, particularly after the skirmish in Arunachal Pradesh, had a ripple effect on trade, with India seeking to reduce its dependence on Chinese imports, including those of lead and lead-based products.

The economic downturn, partly fueled by the war and the spread of a new Covid-19 variant in China, further complicated the situation, as it led to a decrease in demand for lead, used extensively in batteries and other industrial applications. India's engagement with the Taliban in Afghanistan also had indirect implications for the lead trade, as it affected regional stability and thus, the confidence of international investors and trade partners.

India's response to its neighbourhood crises, particularly in providing aid to Sri Lanka, showcased its commitment to regional stability, which is crucial for maintaining smooth trade flows. The signing of the 10-year Chabahar Port pact with Iran was a significant move to secure India's trade routes and access to markets bypassing Pakistan, which could potentially streamline the import and export of commodities like lead.

Furthermore, the decline in interdependence between China and the United States presented both challenges and opportunities for India's lead trade. The re-rating of defence stocks and the capacity crunch in the global defence industry, where lead is a key material, underscored the need for India to step up its production capabilities. The private sector's expected expansion in capital expenditure indicated a positive outlook for the lead industry, despite the global trade challenges. However, through strategic diplomatic engagements and policy decisions, India navigated these complexities to maintain and secure its lead trade interests. The country's efforts to diversify its trade partners and invest in alternative routes like the Chabahar Port, along with its active role in regional stability and global forums, helped mitigate some of the adverse effects of the geopolitical issues on its lead trade. The situation underscored the interconnectedness of global events and their impact on trade, highlighting the importance of agile and forward-thinking strategies in the face of geopolitical uncertainties.

2. Trading related parameter

NSE had the following Lead derivatives available for trading on its Commodity Derivatives Segment in FY 2023-24.

- Lead Futures
- Lead Mini Futures

a. Monthly and Annual traded volume (quantity in appropriate units)

The traded volume for Lead derivatives in FY 23-24 was NIL.

b. Annual traded volume as proportion of total deliverable supply (quantity in appropriate units)

The traded volume for Lead derivatives in FY 23-24 was NIL.

c. Annual traded volume as proportion of total annual production (quantity in appropriate units)

The traded volume for Lead derivatives in FY 23-24 was NIL.

d. Annual average Open interest as proportion of total production

The traded volume for Lead derivatives in FY 23-24 was NIL.

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

The traded volume for Lead derivatives in FY 23-24 was NIL.

f. Monthly and Annual value of trade (in Rs. Crores)

The traded volume for Lead derivatives in FY 23-24 was NIL.

g. Monthly and Annual quantity of delivery (in appropriate units)

The deliveries for Lead derivatives in FY 23-24 were NIL.

h. Monthly and Annual value of delivery (in Rs. Crores)

The deliveries for Lead derivatives in FY 23-24 were NIL.

i. Monthly and Annual Average Open Interest (OI) (in appropriate units)

The traded volume for Lead derivatives in FY 23-24 was NIL.

j. Annual average volume to open interest ratio

The traded volume for Lead derivatives in FY 23-24 was NIL.

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

The traded volume for Lead derivatives in FY 23-24 was NIL.

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

The traded volume for Lead derivatives in FY 23-24 was NIL.

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

The traded volume for Lead derivatives in FY 23-24 was NIL.

n. Algorithmic trading as percentage of total trading

The traded volume for Lead derivatives in FY 23-24 was NIL.

o. Delivery defaults
i. Number of instances
ii. Quantity involved
iii. Value involved

The deliveries for Lead derivatives in FY 23-24 were 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)

The traded volume for Lead derivatives in FY 23-24 was NIL.

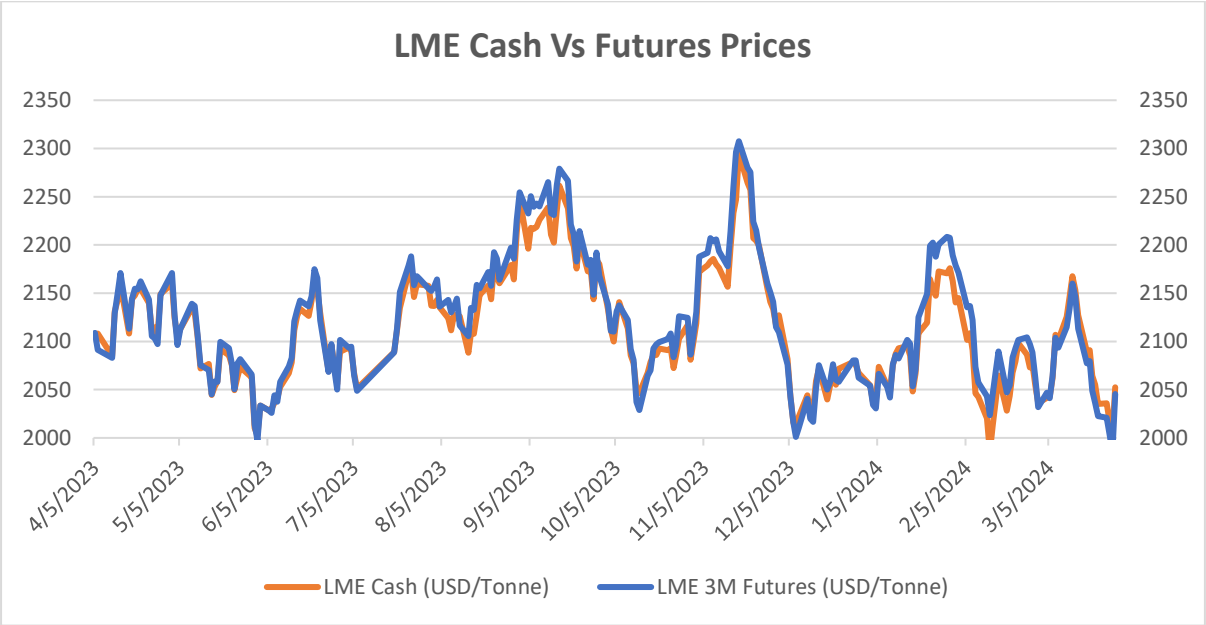
b. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).

The traded volume for Lead derivatives in FY 23-24 was NIL.

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

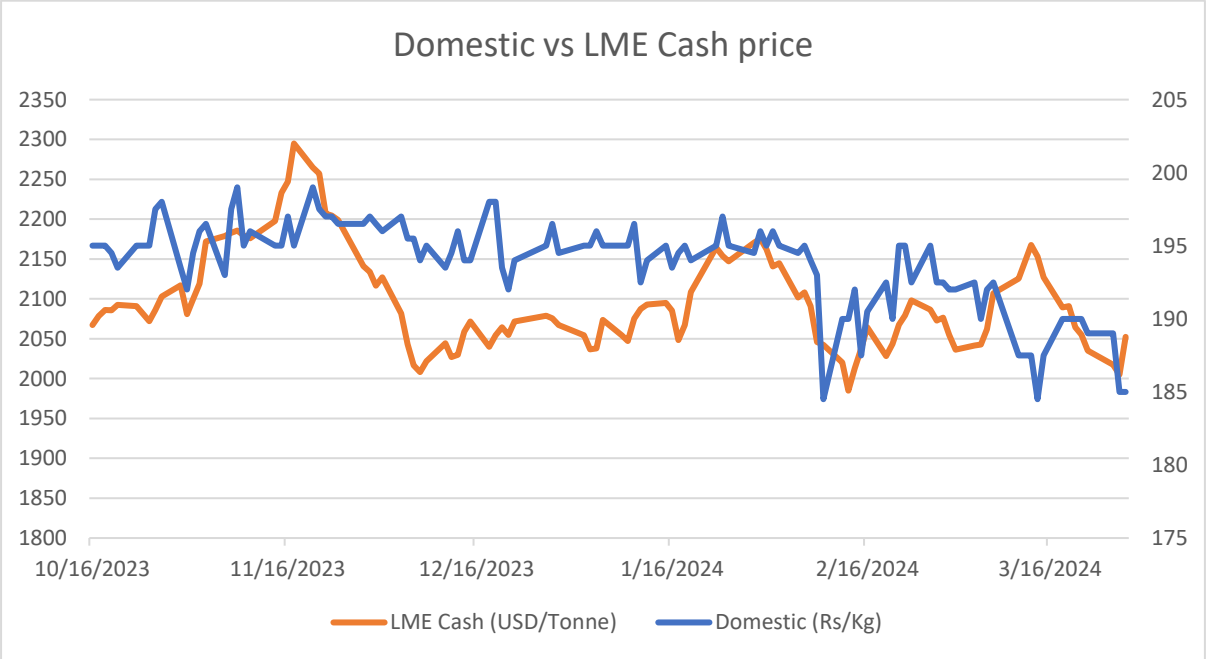
The traded volume for Lead derivatives in FY 23-24 was NIL.

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



Correlation: 0.98% | Ratio of Std Deviation: 0.89

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.



Correlation: 35% | Ratio of Std Deviation: 0.99

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

The traded volume for Lead derivatives in FY 23-24 was NIL

Commodity	Max Volatility in Futures Prices (%)	Min Volatility in Futures Prices (%)	Max Volatility in Spot Prices (%)	Min Volatility in Spot Prices (%)
Lead	NA	NA	4.40	0

Volatility calculation: (Day – Previous day's price)/Previous day's price

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.

The traded volume for Lead derivatives in FY 23-24 was NIL.

4. Other 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.

The traded volume for Lead derivatives in FY 23-24 was NIL.

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).

The largest single use of lead worldwide today is in the manufacture of lead-acid storage batteries which is about 74%, while the single largest use for zinc is in the Galvanising Industry which is about 50%. Entire production of lead concentrate was reported from Rajasthan. However, the commodity is consumed throughout the country with major centres being in Chennai, Kolkata, Panvel, Jalandhar, Rourkela, Vadodara, etc. Chennai is the primary delivery center for NSE Lead derivatives contracts.

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

Major physical markets data provided in the point 4b. The traded volume for Lead derivatives in FY 23-24 was NIL

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

For education initiatives, the exchange has conducted 411 awareness campaigns across INDIA covering all the commodities available on the NSE platform. These programs were attended by more than 15,000 stakeholders.

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

NSE is constantly striving to encourage hedgers to participate in the Lead contracts. We have value chain participants and associations such as Bombay Metal Exchange, Hindalco Ltd, Vedanta, Rashtriya Metal industries, etc. as part of our Base Metals PAC, who guide us on how to get more participation from physical market participants.

5. Any other information to be disclosed as deemed important by the exchange or as suggested by the PAC.