# ANNUAL PERFORMANCE REVIEW – SILVER

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

Silver is soft and lustrous metal that is grouped in the category of noble metals. Its brilliant white colour, malleability and resistance to atmospheric oxidation have enhanced its value as a highly desired precious metal which is used in many industrial applications. Apart from its monetary and decorative uses, silver is known to have the highest electrical conductivity amongst all metals that enhances its potential in modern age applications, viz, for printed electric circuits, coating for electronic conductors and in alloys of gold & copper for electrical contacts.

***Source: India Mineral yearbook***

**Value Chain for Silver**

**Various grades of Silver found in India**

The Bureau of Indian Standards (BIS) has formulated the standard for Refined Gold and Silver Bars for Good Delivery — IS 17278: 2019

As per BIS standard IS 2112:2014 silver hallmark consists of following grade: 9999, 9995,999,990,925,900,835,800

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

| Global Silver Scenario | | |
|---|---|---|
| In tonnes | 2020 | 2021 |
| Opening Stock | - | - |
| Production | 29,640 | 31,017 |
| Others | - | - |
| Consumption* | 27,370 | 32,627 |
| Closing Stocks | - | |
| ***Source: World Silver Survey 2022*** | | |
| ****Demand numbers are considered*** | | |

| India Silver Scenario | | |
|---|---|---|
| In tonnes | 2020 | 2021 |
| Opening Stocks | - | - |
| Production* | 671 | 689 |
| Import (Tonnes) | 2,128 | 2,773 |
| Total Supply | 2,799 | 3,462 |
| Exports | 166 | - |
| Domestic Consumption** | 2,166 | 3,049 |
| Closing Supply | - | - |
| ***Source: World Silver Survey 2022*** | | |
| ****mine production numbers are considered*** | | |
| *****Industrial, silverware, electronics and jewellery numbers are considered*** | | |

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**Top 10 Major producing countries**

| Top 10 Major producing countries (in tonnes) | | |
|---|---|---|
| Country | 2020 | 2021 |
| Mexico | 5,605 | 6,118 |
| China | 3,407 | 3,510 |
| Peru | 3,160 | 3,355 |
| Australia | 1,337 | 1,334 |
| Poland | 1,226 | 1,307 |
| Bolivia | 930 | 1,290 |
| Chile | 1,474 | 1,281 |
| Russia | 1,323 | 1,212 |
| United States | 986 | 1,011 |
| Argentina | 707 | 823 |

***Source: World Silver Survey 2022***

**Top 10 Major consuming countries**

| Top 10 Major consuming countries (in tonnes) | | | |
|---|---|---|---|
| Country | 2020 | Country | 2021 |
| China | 6646 | China | 7287 |
| Japan | 5811 | United States | 6280 |
| United States | 5770 | Japan | 5988 |
| India | 2166 | India | 3049 |
| Germany | 1333 | Germany | 1495 |
| Italy | 786 | Italy | 974 |
| South Korea | 770 | South Korea | 829 |
| Thailand | 745 | Thailand | 771 |
| United Kingdom | 632 | United Kingdom | 697 |
| Taiwan | 281 | France | 300 |

***Source: World Silver Survey 2022***
***Industrial, silverware, electronics and jewellery numbers are considered***

**Top 10 Major Exporting countries**

**Not Available**

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**Top 10 Major Importing countries**

**Not Available**

**Top 10 Major producing States in India**

| Top 10 Major producing States in India (in tonnes) | | |
|---|---|---|
| States | 2018 | 2019 |
| Rajasthan | 658 | 633 |
| ***Source: India Mineral Yearbook*** | | |

**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 silver prices in India for financial year 2021-22

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

**Factors which affected bullion prices in FY 2021-22**

- Conflict Between Russia and Ukraine
- Implementation of fresh lock lockdowns in China raised the concerns regarding pandemic
- Rising Inflation in the Major economies across the world
- Hike in US interest rates
- Rise in Crude oil prices
- Rise in demand in major importing countries post pandemic

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## 2. Trading related parameter

### a) Monthly and Annual traded volume (in Kgs)

| Month | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Apr-21 | - | - | - | 70,680 | 12,136 | - |
| May-21 | - | - | - | - | - | - |
| Jun-21 | - | - | - | - | - | - |
| Jul-21 | - | - | - | - | - | - |
| Aug-21 | - | - | - | - | - | - |
| Sep-21 | - | - | - | - | - | - |
| Oct-21 | - | - | - | - | - | - |
| Nov-21 | - | - | - | - | - | - |
| Dec-21 | - | - | - | - | - | - |
| Jan-22 | - | - | - | - | - | - |
| Feb-22 | - | - | - | - | - | - |
| Mar-22 | - | - | - | - | - | - |
| Total | - | - | - | 70,680 | 12,136 | - |

### b) Annual traded volume as proportion of total deliverable supply

| | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Annual Traded Volume (Kgs) | - | - | - | 70,680 | 12136 | - |
| Deliverable Supply (Kgs) | 34,62,000 | | | | | |
| Ratio | - | - | - | 2.04% | 0.35% | - |

### c) Annual traded volume as proportion of total annual production

| | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Annual Traded Volume (Kgs) | - | - | - | 70,680 | 12136 | - |
| Annual Production 21-22 (Kgs) | 6,89,000 | | | | | |
| Ratio | - | - | - | 10.26% | 1.76% | - |

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### d) Annual average Open interest as proportion of total production

| | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Annual Average OI (Kgs) | - | - | - | - | - | - |
| Annual Production 21-22 (Kgs) | 6,89,000 | | | | | |
| Ratio | - | - | - | - | - | - |

### e) Annual average Open interest as proportion of total deliverable supply

| | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Annual Average OI (Kg) | - | - | - | - | - | - |
| Deliverable Supply (Kg) | 34,62,000 | | | | | |
| Ratio | - | - | - | - | - | - |

### f) Monthly and Annual value of trade (in Crores)

| Month | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Apr-21 | - | - | - | 484.55 | 82.83 | - |
| May-21 | - | - | - | - | - | - |
| Jun-21 | - | - | - | - | - | - |
| Jul-21 | - | - | - | - | - | - |
| Aug-21 | - | - | - | - | - | - |
| Sep-21 | - | - | - | - | - | - |
| Oct-21 | - | - | - | - | - | - |
| Nov-21 | - | - | - | - | - | - |
| Dec-21 | - | - | - | - | - | - |
| Jan-22 | - | - | - | - | - | - |
| Feb-22 | - | - | - | - | - | - |
| Mar-22 | - | - | - | - | - | - |
| **Total** | - | - | - | **484.55** | **82.83** | - |

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### g) Monthly and Annual quantity of delivery (in Kgs)

| Month | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Apr-21 | - | - | - | - | - | - |
| May-21 | - | - | - | - | - | - |
| Jun-21 | - | - | - | - | - | - |
| Jul-21 | - | - | - | - | - | - |
| Aug-21 | - | - | - | - | - | - |
| Sep-21 | - | - | - | - | - | - |
| Oct-21 | - | - | - | - | - | - |
| Nov-21 | - | - | - | - | - | - |
| Dec-21 | - | - | - | - | - | - |
| Jan-22 | - | - | - | - | - | - |
| Feb-22 | - | - | - | - | - | - |
| Mar-22 | - | - | - | - | - | - |
| **Total** | - | - | - | - | - | - |

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

| Month | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Apr-21 | - | - | - | - | - | - |
| May-21 | - | - | - | - | - | - |
| Jun-21 | - | - | - | - | - | - |
| Jul-21 | - | - | - | - | - | - |
| Aug-21 | - | - | - | - | - | - |
| Sep-21 | - | - | - | - | - | - |
| Oct-21 | - | - | - | - | - | - |
| Nov-21 | - | - | - | - | - | - |
| Dec-21 | - | - | - | - | - | - |
| Jan-22 | - | - | - | - | - | - |
| Feb-22 | - | - | - | - | - | - |
| Mar-22 | - | - | - | - | - | - |
| **Total** | - | - | - | - | - | - |

**i) Monthly and Annual Average Open Interest (OI) (in Kgs)**

| Month | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Apr-21 | - | - | - | - | - | - |
| May-21 | - | - | - | - | - | - |
| Jun-21 | - | - | - | - | - | - |
| Jul-21 | - | - | - | - | - | - |
| Aug-21 | - | - | - | - | - | - |
| Sep-21 | - | - | - | - | - | - |
| Oct-21 | - | - | - | - | - | - |
| Nov-21 | - | - | - | - | - | - |
| Dec-21 | - | - | - | - | - | - |
| Jan-22 | - | - | - | - | - | - |
| Feb-22 | - | - | - | - | - | - |
| Mar-22 | - | - | - | - | - | - |
| **Total** | - | - | - | - | - | - |

**j) Annual average volume to open interest ratio**

**Nil**

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

| | Silver Futures | Silver KG Futures | Silver Mini Futures | Silver Options | Silver KG Options | Silver mini-Options |
|---|---|---|---|---|---|---|
| Unique Members | - | - | - | 4 | 4 | - |
| Unique Clients | - | - | - | 6 | 6 | - |

**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 Available**

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n) **Algorithmic trading as percentage of total trading**

**Silver options –** 13.25%

**Silver KG options –** 36.09%

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).

- The correlation was 0.9326
- The ratio of Standard Deviation was 0.99

### 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 correlation between Exchange futures and International Spot Prices is 0.9800 for period FY 2021-22
- The ratio of Standard Deviation was 0.99

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

- The correlation was 0.9820
- The ratio of Standard Deviation was 1.09

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

- The correlation was 0.9600
- The ratio of Standard Deviation was 1

**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 % |
|---|---|---|---|---|
| Silver | 3.82% | -5.41% | 6.34% | -4.53% |

**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**

**Nil**

## 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

**Hedge Effectiveness for FY 2021-22**

| Commodity | Hedge Efficiency |
|---|---|
| Silver | 96.32% |

***Note: Hedging efficiency is the 'R Square' value of the regression equation between BSE futures prices and BSE polled spot prices during the financial year.***

**Basis Risk for FY 2021-22**

| Commodity | Unit | Average Return of Basis (Unit) | Standard deviation |
|---|---|---|---|
| Silver | Rs/kg | -0.82 | 25.20 |

***Note: Basis Risk is computed as the Standard deviation of daily normal return in Basis, which is excess of Spot over Futures price.***

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

BSE has its Delivery Centre as Ahmedabad. Physical Marketwise OI data is not available

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

Physical Marketwise OI data is not available

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

| Sr. No. | Program Type | Location | Participants |
|---|---|---|---|
| 1 | Ratnagiri Sarafa Association | Webinar | 114 |
| 2 | Kolhapur Jilla Sarafa Sangh | Webinar | 92 |
| 3 | Bulldana Jilla Srafa | Webinar | 67 |
| 4 | Pune Sarafa Association, Sholapur Sarafa Vyapari Sangh | Webinar | 88 |
| 5 | Ghatchiroli Maharashtra Sarafa Association | Webinar | 90 |

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| | | | |
|---|---|---|---|
| 6 | Gems And Jewellery Trade Council Of India (Gjtci) | Webinar | 120 |
| 7 | The Bullion Jewellers Association | Webinar | 117 |
| 8 | Nashik Sarafa Association | Webinar | 114 |
| 9 | Nanded Sarafa Association | Webinar | 100 |
| 10 | Sindhudurg ,Kanakavli, Kudal & Malvan Jewellers Association | Webinar | 130 |
| 11 | Chalisgaon & Jalgaon | Webinar | 106 |
| 12 | Midc Jewellers Association | Hingna (MH) | 125 |
| 13 | Yavatmal Jila Sarafa Association | Yavatmal | 86 |

**Apart from the above awareness sessions we had also conducted several awareness sessions in association with IMC Chamber of Commerce and Industry.**

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

Exchange has conducted 150 webinars for Commodity derivates Segment. The discussion for awareness program included the following points:

- About BSE's trading platform for Commodity Derivatives Segment, commodities available for trading on Exchange platform, Hedging Opportunities.
- Benefits of trading in commodities and price risk mechanism.
- Newly launched Commodities.

Apart from the above BSE has also signed Memorandum of Understanding (MoU) with premier bullion trade and industry associations, and they include:

1. Akola Sarafa Association
2. Akola Sarafa Va Suvarnkar Yuva Sang
3. Sangli Sarafa Association
4. Yavatmal Sarafa Association
5. Amritsar Sarafa Association
6. Patliputra Sarafa Association
7. Amravati Sarafa Association
8. Shree Choksi Mahajan Association
9. Gems and Jewellery Trade Council of India (GJTCI)
10. The Bullion Jewellers Association
11. South Tamilnadu Jewellers Guild

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12. Telangana Bullion Merchants Association
13. Dhamangaon Railway Sarafa Suvankar Association
14. Madurai Diamond, Gold and Silver Merchant Association
15. Nashik Sarafa Association
16. Thirunelveli Gold Silver Diamond Jewellery Traders Association
17. Nanded Sarafa Association
18. Saraf Suvarnkar Sabghthan Pusad
19. Ghadchiroli Zila Sarafa Association
20. Jamshedpur Jewellers association

We have organized multiple awareness sessions in association with IMC Chamber of Commerce and Industry exclusively for Bullion segment.

**We propose to have the following to improve effectiveness in the contract.**

- One to one meeting with corporate clients.
- Exclusive Events for Bullion
- MOU with Associations for more networking and extensive reach .