Parameters for Performance Review of Commodity for the Financial year 2019-20

Silver

1. Background

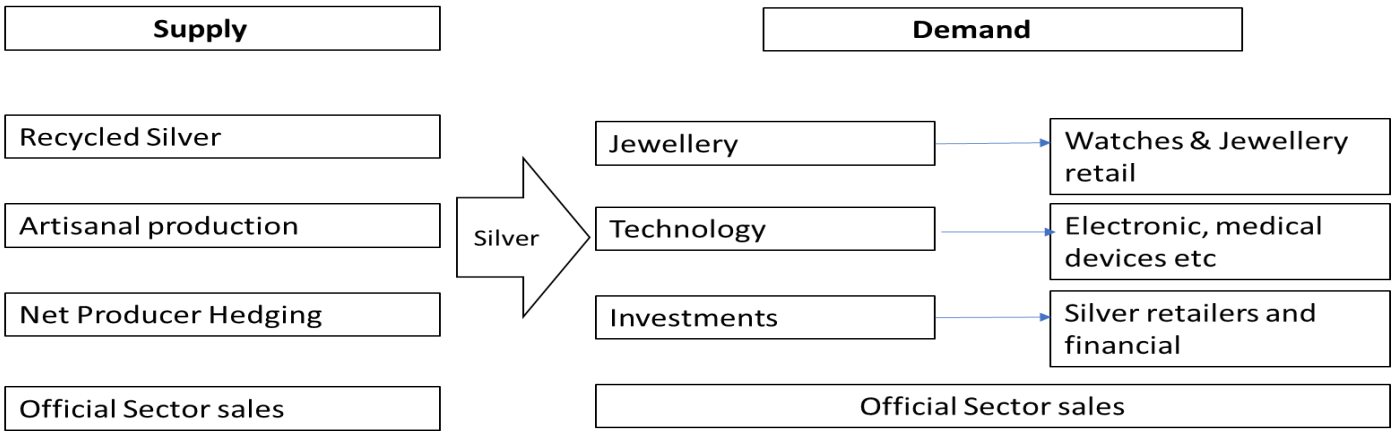
a) Brief about the commodity such as sample picture, lifecycle and various varieties/grade of the commodity found in India

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

The Silver Value Chain



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

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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	2018	2019
Opening Stock	-	-
Production	27,511	26,893
Others	-	-
Consumption	33,227	31,886
Closing Stocks	-	-
Soource: Silver Institute		

India Silver Scenario		
In tonnes	2018	2019
Opening Stocks	-	-
Production*	658	633
Import (Tonnes)	6,693	5,805
Total Supply	7,740	6,330
Exports	171	166
Domestic Consumption**	3,609	3,554
Closing Supply	-	-
Source: World Gold Council, News report ****mine production numbers are considered*** *****Consumer Demand Numbers are considered***		

Top 10 Major producing countries

Top 10 Major producing countries (in tonnes)		
Country	2018	2019
Mexico	6321	6118
Peru	4659	4353
China	3694	3559
Russia	1395	1379
Chile	1354	1363
Bolivia	1283	1298
Poland	1273	1228
Australia	1138	1196
United States	900	1119
Argentina	852	1013
Source: Metal Focus		

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Top 10 Major consuming countries

Not Available

Top 10 Major Exporting countries

Not Available

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: Silver Institute		

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

As per the circular No. 40-3/2020-DM-I (A) Dated 24th March 2020 of Government of India Ministry of Home Affairs, the gold spot market was closed pan India due to the lockdown

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

- Bullion witnessed periodic as well as steep price fluctuations with bias towards the higher side
- 14 central banks including the RBI, have added more than one tonne to their gold reserves.
- Concerns around trade wars between US and China
- Brexit negotiations

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2. **Trading related parameter**

a) **Monthly and Annual traded volume**

Month	Silver (In Kg	Silver Kg (in Kg)	Silver mini (in Kg)
Apr-19	1,04,040	-	-
May-19	1,14,060	-	-
Jun-19	26,970	5	5
Jul-19	1,22,850	5	5
Aug-19	62,400	-	-
Sep-19	38,610	-	-
Oct-19	5,850	-	-
Nov-19	930	-	-
Dec-19	-	-	-
Jan-20	-	-	-
Feb-20	-	-	-
Mar-20	-	-	-
Total	**4,75,710**	**10**	**10**

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

Silver: 7.51%

- Annual Traded Volume (kgs): 4,75,710
- Deliverable Supply (kgs): 63,29,000

Silver Kg: 0.0002%

- Annual Traded Volume (kgs) = 10
- Deliverable Supply (kgs) = 63,29,000

Silver Mini (kgs): 0.0002%

- Annual Traded Volume (kgs) = 10
- Deliverable Supply (kgs): 63,29,000

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

Silver: 75.15%

- Annual Traded Volume (kgs): 4,75,710
- Annual Production (kgs): 6,33,000

Silver Kg: 0.0016%

- Annual Traded Volume (kgs): 10
- Annual Production (kgs): 6,33,000

Silver Mini: 0.0016%

- Annual Traded Volume (kgs): 10
- Annual Production (kgs): 6,33,000

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d) Annual average Open interest as proportion of total production

Silver: 0.69%

- Annual Average OI (kgs) = 4380
- Annual Production (kgs) = 6,33,000

Silver Kg: Nil

- Annual Average OI (kgs) = 0
- Annual Production (kgs) = 6,33,000

Silver Mini: Nil

- Annual Average OI (kgs) = 0
- Annual Production (kgs) = 6,33,000

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

Silver: 0.06%

- Annual Average OI (kgs) = 4380
- Deliverable Supply (kgs) = 63,29,000

Silver Kg: Nil

- Annual Average OI (kgs) = 0
- Deliverable Supply (kgs) = 63,29,000

Silver Mini: Nil

- Annual Average OI (kgs) = 0
- Deliverable Supply (kgs) = 63,29,000

f) Monthly and Annual value of trade

Month	Silver (In Crores)	Silver Kg (In Crores)	Silver Mini (In Crores)
Apr-19	390.44	-	-
May-19	422.32	-	-
Jun-19	100.99	0.02	0.02
Jul-19	483.38	0.02	0.02
Aug-19	272.96	-	-
Sep-19	186.25	-	-
Oct-19	26.57	-	-
Nov-19	4.13	-	-
Dec-19	-	-	-
Jan-20	-	-	-
Feb-20	-	-	-
Mar-20	-	-	-
Total	1,887.03	0.04	0.04

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g) Monthly and Annual quantity of delivery

Month	Silver (In Kg)	Silver Kg (In Kg)	Silver Mini (In Kg)
Apr-19	-	-	-
May-19	-	-	-
Jun-19	-	-	-
Jul-19	6,600	-	-
Aug-19	-	-	-
Sep-19	510	-	-
Oct-19	-	-	-
Nov-19	-	-	-
Dec-19	120	-	-
Jan-20	-	-	-
Feb-20	-	-	-
Mar-20	-	-	-
Total	**7,230**	**-**	**-**

h) Monthly and Annual value of delivery

Month	Silver (In INR)	Silver Kg (In INR)	Silver Mini (In INR)
Apr-19	-	-	-
May-19	-	-	-
Jun-19	-	-	-
Jul-19	24.46	-	-
Aug-19	-	-	-
Sep-19	2.47	-	-
Oct-19	-	-	-
Nov-19	-	-	-
Dec-19	0.53	-	-
Jan-20	-	-	-
Feb-20	-	-	-
Mar-20	-	-	-
Total	**27.46**	**-**	**-**

i) Monthly and Annual Average Open Interest (OI)

Month	Silver (In Kg)	Silver Kg (In Kg)	Silver Mini (In Kg)
Apr-19	11,490	-	-
May-19	16,170	-	-
Jun-19	18,390	5	5
Jul-19	2,760	1	-
Aug-19	750	-	-
Sep-19	1,680	-	-
Oct-19	1,710	-	-
Nov-19	420	-	-
Dec-19	-	-	-
Jan-20	-	-	-
Feb-20	-	-	-
Mar-20	-	-	-

Annual Average Open Interest = 4380 kgs

Note: Average OI is taken since launch date till the end of the year

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

Silver: 41.78%

- Average Traded Volume (kgs): 1830
- Average OI (kgs): 4380

Silver Kg: 0%

- Average Traded Volume (kgs): 0
- Average OI (kgs): 0

Silver Mini: 0%

- Average Traded Volume (kgs): 0
- Average OI (kgs): 0

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

Silver

- Unique Members = 34
- Unique Clients = 45

Silver Kg

- Unique Members = 2
- Unique Clients = 2

Silver Mini

- Unique Members = 2
- Unique Clients = 2

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

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

- Silver: 66.39%

o) **Delivery defaults**

Number of instances = Nil

Quantity involved = Nil

Value involved = Nil

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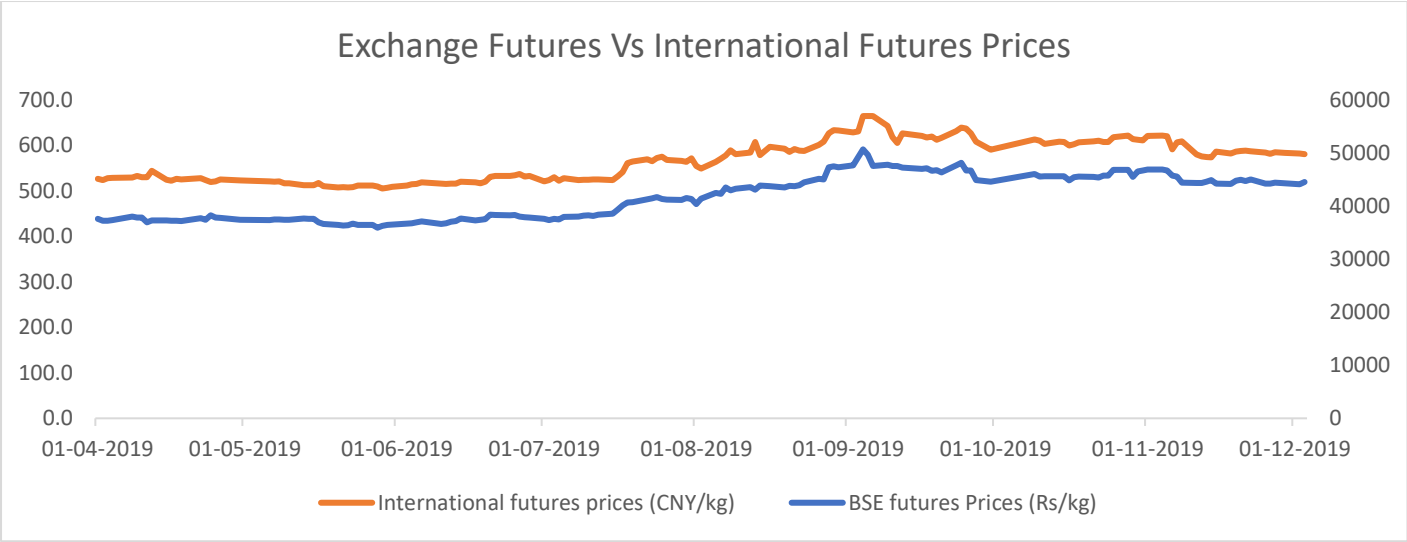
3. **Price movements**

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



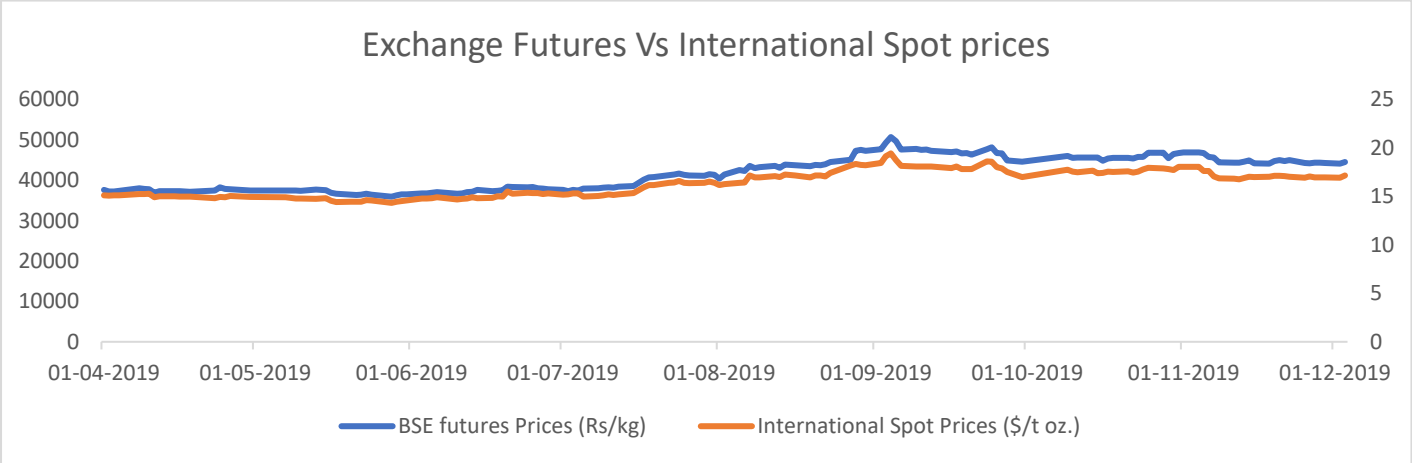
The correlation between exchange and International Futures Prices is 0.9804

The standard deviation of Exchange Futures prices was 1.27% for period April 01,2019 to December 3, 2019

The standard deviation of International Futures prices was 1.49% for period April 01,2019 to December 3, 2019

The ratio of Standard Deviation for the same period was 0.85

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 0.9899.

The standard deviation of Exchange Futures prices was 1.27% for period April 01,2019 to December 3, 2019

The standard deviation of International Spot prices was 1.30% for period April 01,2019 to December 3, 2019

The ratio of Standard Deviation for the same period was 0.98

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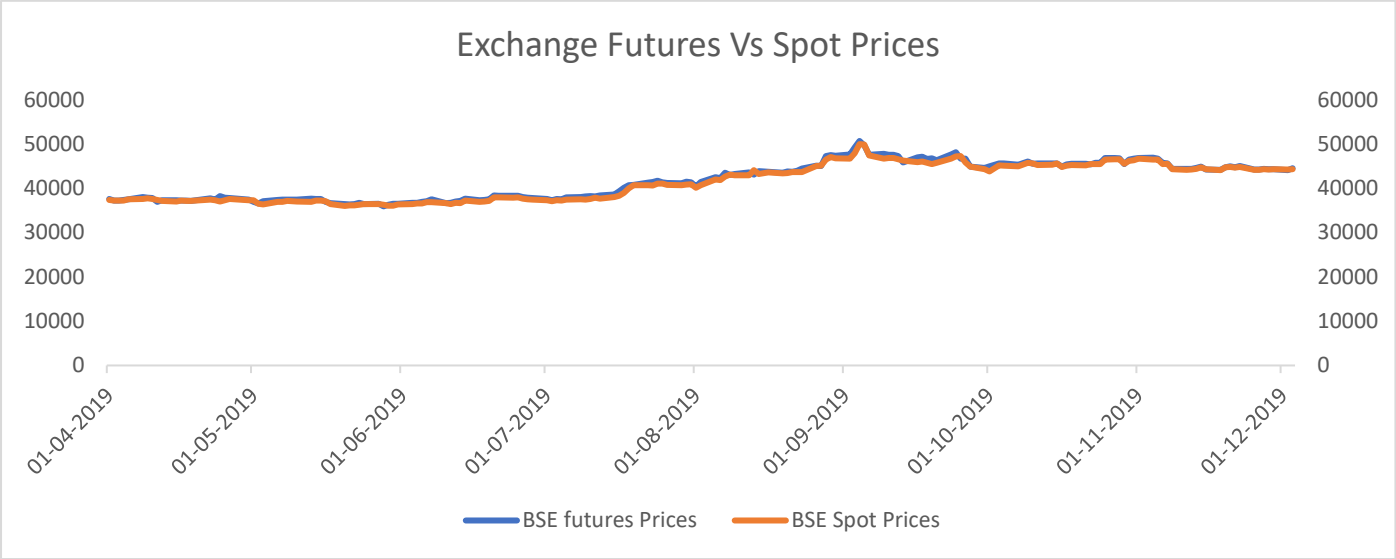
c) Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.



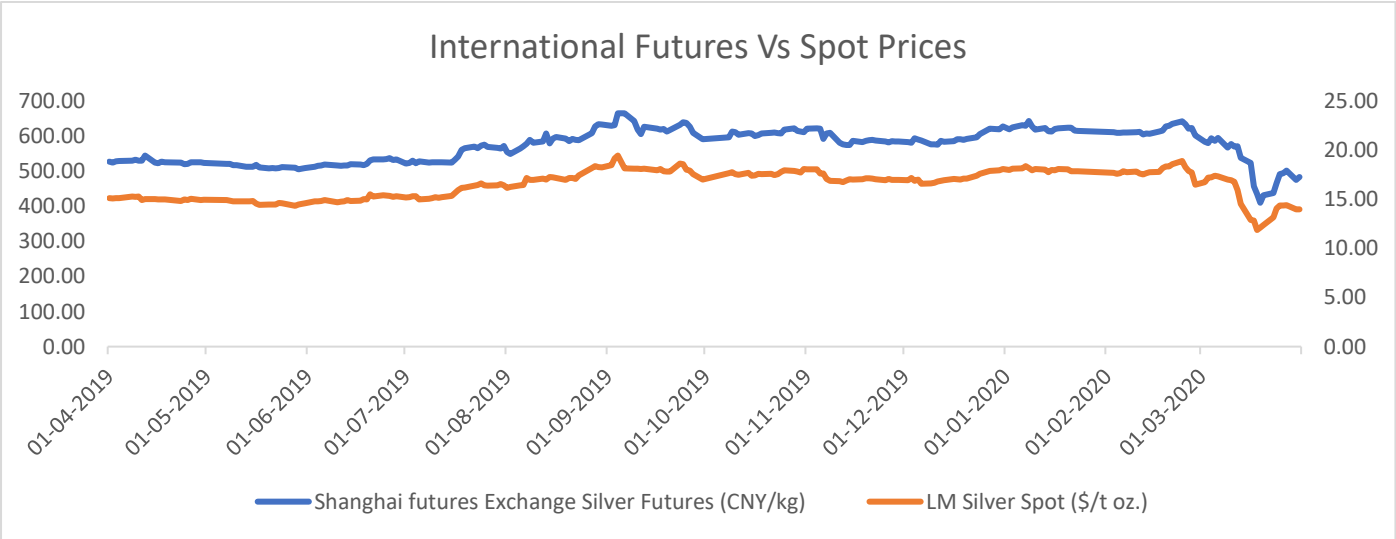
The correlation between exchange futures and Exchange Spot Prices is 0.9964.

The standard deviation of Exchange Futures prices was 1.27% for period April 01,2019 to December 3, 2019

The standard deviation of Exchange Spot prices was 1.15% for period April 01,2019 to December 3, 2019

The ratio of Standard Deviation for the same period was 1.10

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



The correlation between International futures and International Spot Prices is 0.9794.

The standard deviation of International Futures prices was 1.91% for period FY 2019-20

The standard deviation of International Spot prices was 1.83% for period FY 2019-20

The ratio of Standard Deviation for the same period was 1.05

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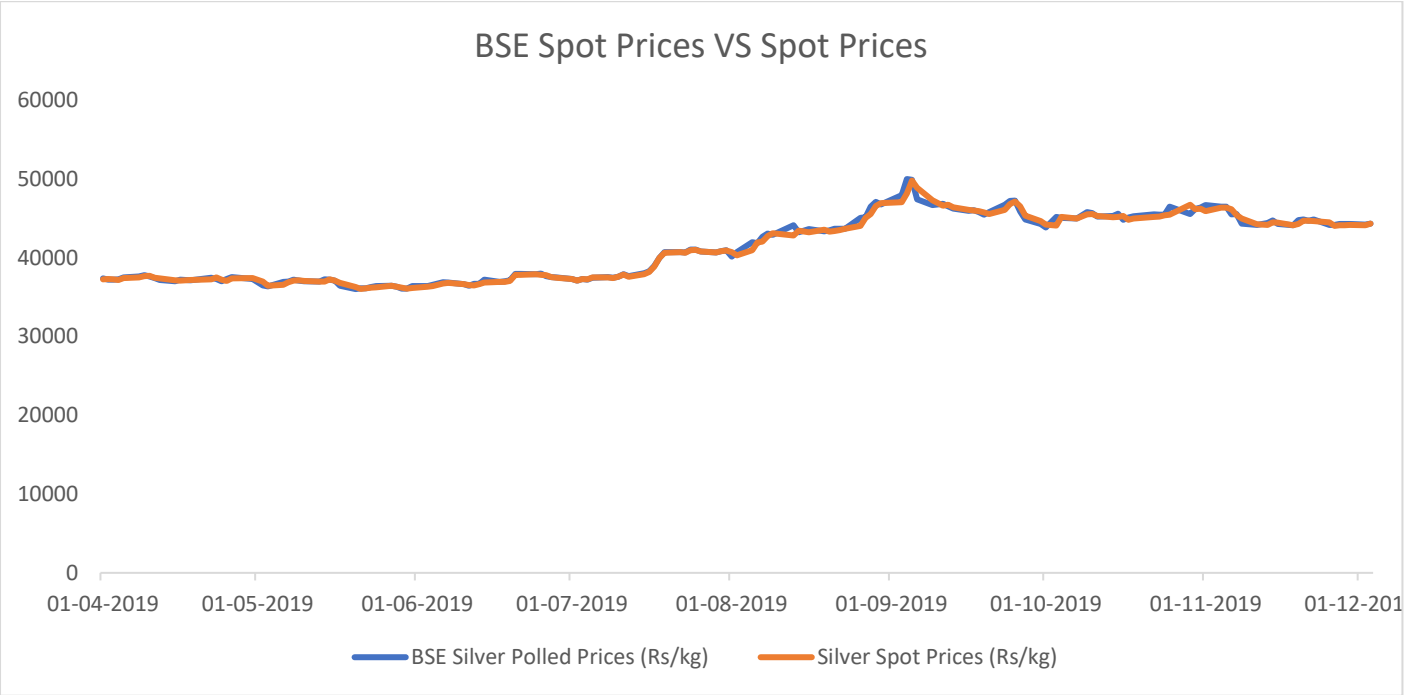
e) Comparison of Exchange polled price and mandi price (in case of agricultural commodities) / other relevant price (in case non-agricultural commodities) at basis centre



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 %
Silver	4.99%	-4.14%	4.28%	-4.92%
Silver Kg	2.20%	-1.27%	2.18%	-0.90%
Silver M	2.20%	-1.27%	2.18%	-0.90%

Note: Period Considered for Silver: 01/04/2019 - 03/12/2019
Period Considered for Silver Kg: 13/06/2019 - 04/07/2019
Period Considered for Silver Kg: 13/06/2019 - 04/07/2019

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

BSE Silver Mini and Silver Kg futures contracts were never in backwardation or contango by more than 4% during the period under review

BSE Silver Futures Contract - There was 1 instance where the next month futures contract was in contango by more than 4%

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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 2019-20

Commodity	Hedge Efficiency
Silver	99.93%
Silver Kg	98.80%
Silver Mini	98.81%

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 2019-20

Commodity	Unit	Average Return of Basis (Unit)	Standard deviation
Silver	Rs/Kg	0.52	5.95
Note: Period 01/04/2019 to 03/12/2019			

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 centers (information to be provided state-wise and UT-wise)**

Top Silver Importing Cities in India			
City	Quantity (in MT)	City	Quantity (in MT)
Chennai	6692	Chennai	4870
Ahmedabad	393	Kandla	703
Delhi	210	Delhi	145
Kolkata	68	Ahmedabad	142
Mumbai	62	Mumbai	105
Hyderabad	36	Jaipur	30
Jaipur	30	Surat	7
Bangalore	14	Hyderabad	8
Surat	5	Kolkata	3
Cochin	0.8	Bangalore	2

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

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

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

Sr. No.	Program Type	Location	Participants
1	Bullion Awareness Meet	Nagpur	500
2	India International Gold Convention	Amritsar	500
3	Commodity Awareness Program	Kolkata	500
4	Commodity Awareness Program	Mumbai	100

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

- One to one meeting with Corporate clients.
- MOU with Associations
- Exclusive Events for Bullion

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