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

Gold

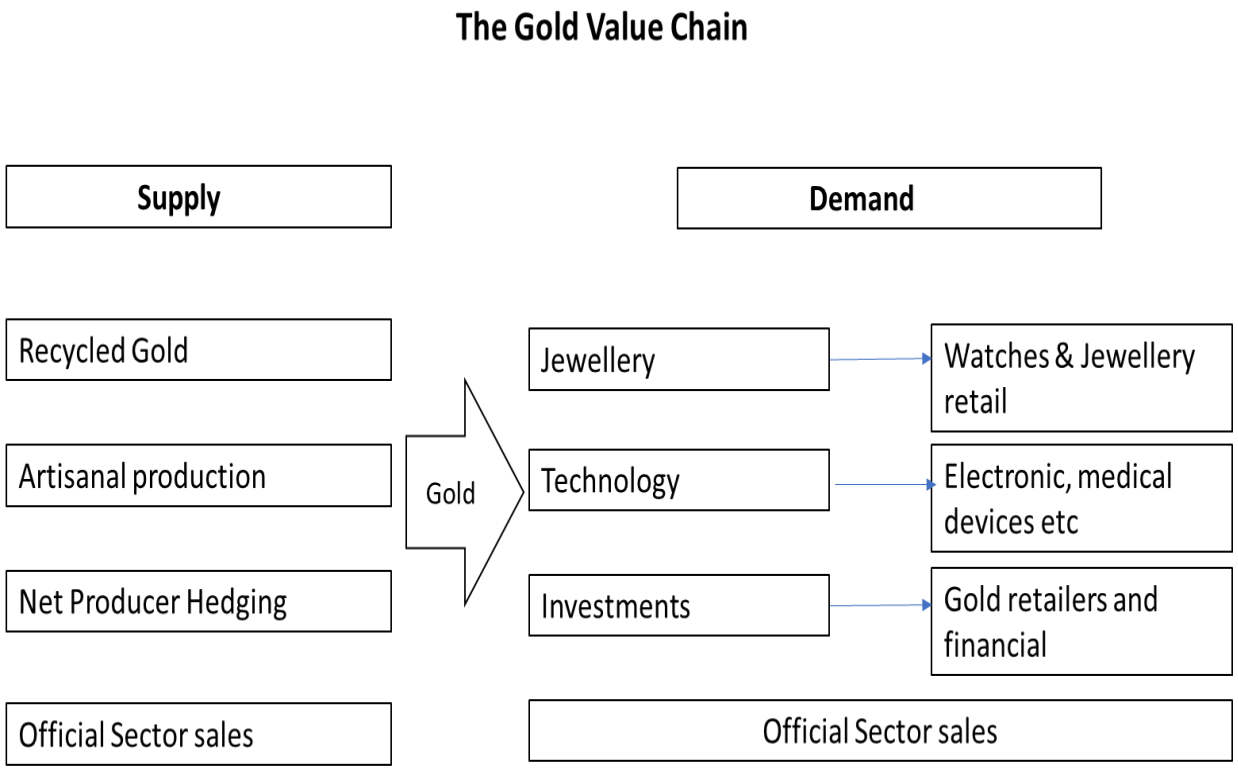
1. **Background**

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

Gold in its purest form is a bright, slightly reddish yellow, dense, soft malleable and ductile metal. It is one of the least reactive chemical elements and is solid under standard conditions. Gold often occurs in free elemental (native) form, as nuggets or grains, in rocks, invein and in alluvial deposits. Gold is dissolved in alkaline solution of cyanide, which are used in mining and electroplating. It dissolves in mercury, forming amalgam alloys, but this is not a chemical reaction. Gold is resistant to corrosion and their chemical reactions and is distinctive in colour.

Source: India Mineral Yearbook

Gold - Value Chain



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BIS Standards

BIS standards - IS 17278: 2019, for delivery of gold and silver

The notifications set the standards for purity, form and provenance of gold and silver bars and the way in which they are manufactured and delivered.

BIS Standard IS: 1417: 2016

Only three grades namely 14,18 and 22 carats for gold jewellery and artefacts, as prescribed in Indian Standard IS: 1417: 2016 can be hallmarked.

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

Global Scenario		
In tonnes	2018	2019
Opening Stock	NA	NA
Production	3509	3464
Others	-	-
Consumption	4402	4368
Source: World Gold Council		

Indian Scenario		
In tonnes	2018	2019
Opening Stock	NA	NA
Production*	7	8
Import (Tonnes)	942	834
Total Supply	853	777
Exports	73	70
Domestic Consumption**	760	691
Source: World Gold Council, News report ****mine production numbers are considered*** *****Consumer Demand Numbers are considered***		

Top 10 Major producing countries (in tonnes)

Country	2018	Country	2019
China	404	China	383
Australia	317	Russia	329
Russia	295	Australia	325
United States	225	United States	200
Canada	189	Canada	183
Peru	158	Peru	143
Ghana	149	Ghana	142
Indonesia	141	South Africa	118
South Africa	128	Mexico	111
Mexico	118	Brazil	107
Source: World Gold Council			

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Top 10 Major consuming countries (in tonnes)

Country	2018-19	Country	2019-20
China	984	China	693
India	768	India	633
United States	157	United States	158
Germany	106	Germany	124
Islamic Republic of Iran	92	Turkey	95
Thailand	81	Islamic Republic of Iran	65
Turkey	77	Vietnam	54
Indonesia	65	Russian Federation	47
Vietnam	60	Indonesia	47
Hong Kong SAR	52	Saudi Arabia	47

Source: World Gold Council
Consumer Demand Numbers are considered

Top 10 Major Exporting countries (in tonnes)

Top 10 Major Exporting countries (in tonnes)			
Country	2018	Country	2019
Switzerland	1580	Switzerland	1407
Hong Kong	911	Ghana	1297
United Kingdom	788	Hong Kong	575
Ghana	756	United Kingdom	531
Peru	543	Peru	395
USA	503	USA	391
Argentina	474	Canada	371
Chile	429	Australia	362
Australia	341	Argentina	327
Thailand	341	Chile	291

Source: IHS Markit, GJPEC

Top 10 Major Importing countries (in tonnes)

Country	2018	Country	2019
Switzerland	2254	Switzerland	2104
China	1506	UK	1528
India	942	China	988
UK	629	India	834
Hong Kong	666	Hong Kong	356
Singapore	356	Canada	316
Turkey	299	Turkey	290
Thailand	284	Singapore	236
USA	231	USA	218
Italy	159	Italy	167

Source: IHS Markit, GJPEC

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Top 10 Major producing States in India (in tonnes)

States	2018	2019
Karnataka	7.1	8.3
Source: India Mineral Yearbook		

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

2. Trading related parameter

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

Months	Volume (in Kgs)	Volume (in gms)
	Gold	Gold Mini
Apr-19	5,612	1,35,100
May-19	5,223	1,58,700
Jun-19	4,710	2,75,600
Jul-19	661	-
Aug-19	654	-
Sep-19	877	-
Oct-19	763	-
Nov-19	258	-
Dec-19	131	-
Jan-20	186	-
Feb-20	726	-
Mar-20	318	-
Total	**20,119**	**5,69,400**

b. Annual traded volume as proportion of total deliverable supply

Gold: 2.59%

- Annual Traded Volume (kgs): 20,119
- Deliverable Supply (kgs): 7,77,000

Gold Mini: 0.07%

- Annual Traded Volume (kgs): 569.40
- Deliverable Supply (kgs): 7,77,000

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

Gold: 251.48%

- Annual Traded Volume (kgs): 20,119
- Annual Production (kgs): 8,000

Gold Mini: 7.11%

- Annual Traded Volume (kgs): 569.40
- Annual Production (kgs): 8,000

d. **Annual average Open interest as proportion of total production**

Gold: 0.20%

- Annual Average OI (kgs): 16
- Annual Production (kgs): 8,000

Gold Mini: 0.01%

- Annual Average OI (kgs): 0.80
- Annual Production (kgs): 8,000

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

Gold: 0.0021%

- Annual Average OI (kgs): 16
- Annual Supply (kgs): 7,77,000

Gold Mini: 0.0001%

- Annual Average OI (kgs): 0.80
  Annual Supply (kgs): 7,77,000

f. **Monthly and Annual value of trade**

Months	Gold (In Crores)	Gold Mini (In Crores)
Apr-19	1,784.52	42.95
May-19	1,658.20	50.37
Jun-19	1,553.57	90.46
Jul-19	229.70	-
Aug-19	248.33	-
Sep-19	337.35	-
Oct-19	290.89	-
Nov-19	98.02	-
Dec-19	49.92	-
Jan-20	74.42	-
Feb-20	304.36	-
Mar-20	136.41	-
Total	**6,765.68**	**183.77**

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

Months	Gold (In kg)	Gold Mini (In Gms)
Apr-19	1	-
May-19	-	-
Jun-19	1	-
Jul-19	-	-
Aug-19	1	-
Sep-19	-	-
Oct-19	1	-
Nov-19	-	-
Dec-19	-	-
Jan-20	-	-
Feb-20	-	-
Mar-20	-	-
Total	**4**	**-**

h. Monthly and Annual value of delivery

Months	Gold (in Crs.)	Gold Mini (in Crs.)
Apr-19	0.32	-
May-19	-	-
Jun-19	0.32	-
Jul-19	-	-
Aug-19	0.35	-
Sep-19	-	-
Oct-19	0.38	-
Nov-19	-	-
Dec-19	-	-
Jan-20	-	-
Feb-20	-	-
Mar-20	-	-
Total	**1.37**	**-**

i. Monthly and Annual Average Open Interest (OI)

Months	Gold (In kg)	Gold Mini (In Gms)
Apr-19	33	700
May-19	40	1,200
Jun-19	24	10,100
Jul-19	19	-
Aug-19	19	-
Sep-19	15	-
Oct-19	16	-
Nov-19	8	-
Dec-19	8	-
Jan-20	9	-
Feb-20	-	-
Mar-20	-	-

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Gold: Annual Average OI = 16 Kgs

Gold Mini: Annual Average OI = 800 gms

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

j. Annual average volume to open interest ratio

Gold: 487.50%

- Average Traded Volume (kgs): 78
- Average Open Interest (kgs): 16

Gold Mini: 275.00%

- Average Traded Volume (kgs): 2.20
- Average Open Interest (kgs): 0.80

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

Gold

- Unique Members = 37
- Unique Clients = 52

Gold Mini

- Unique Members = 25
- Unique Clients = 38

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

- 38.86% - Gold
- 7.52% - Gold Mini

o. Delivery defaults

Number of instances = Nil

Quantity involved = Nil

Value involved = Nil

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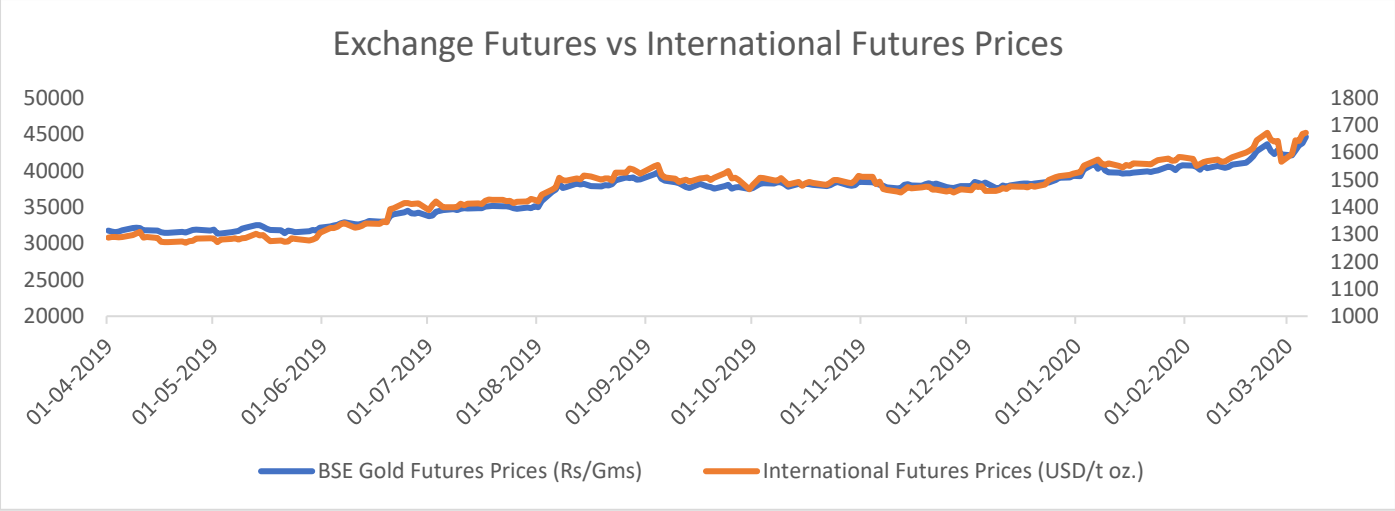
3. **Price movements**

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



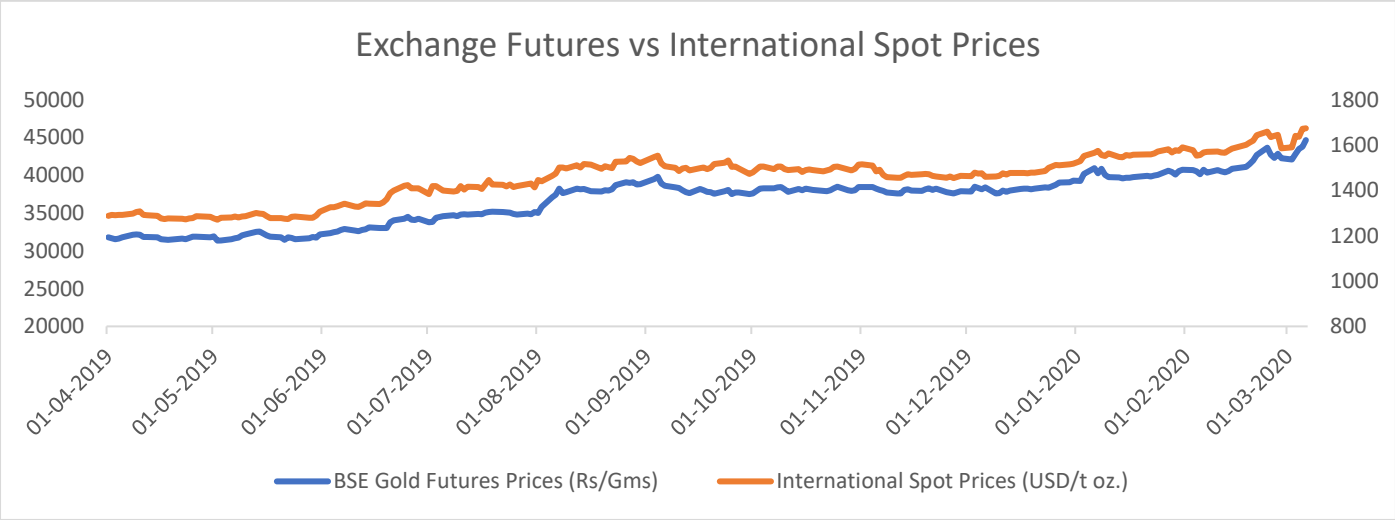
The correlation between Exchange Futures Prices and International Futures prices is 0.9848

The standard deviation of Exchange futures price was 0.84% for the period April 1,2019 to March 6, 2020

The standard deviation of International futures price was 0.85% for the period April 1,2019 to March 6, 2020

The ratio of Standard deviation for the same period 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 Prices and International spot prices is 0.9842

The standard deviation of Exchange futures price was 0.84% for the period April 1,2019 to March 6, 2020

The standard deviation of International spot price was 0.83% for the period April 1,2019 to March 6, 2020

The ratio of Standard deviation for the same period was 1.02

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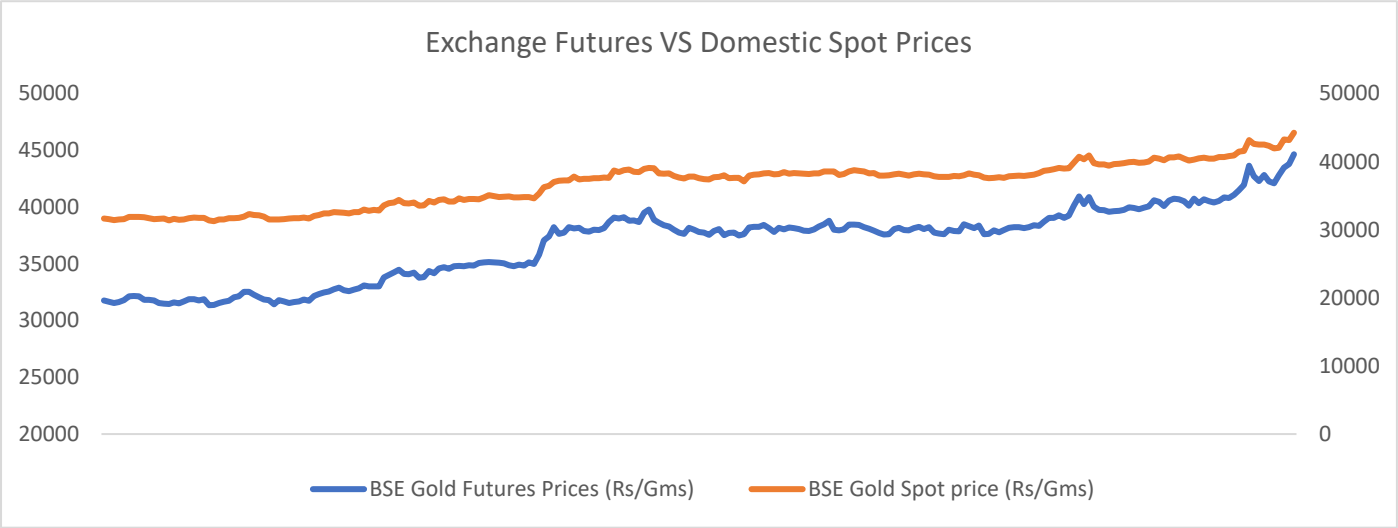
c. Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.



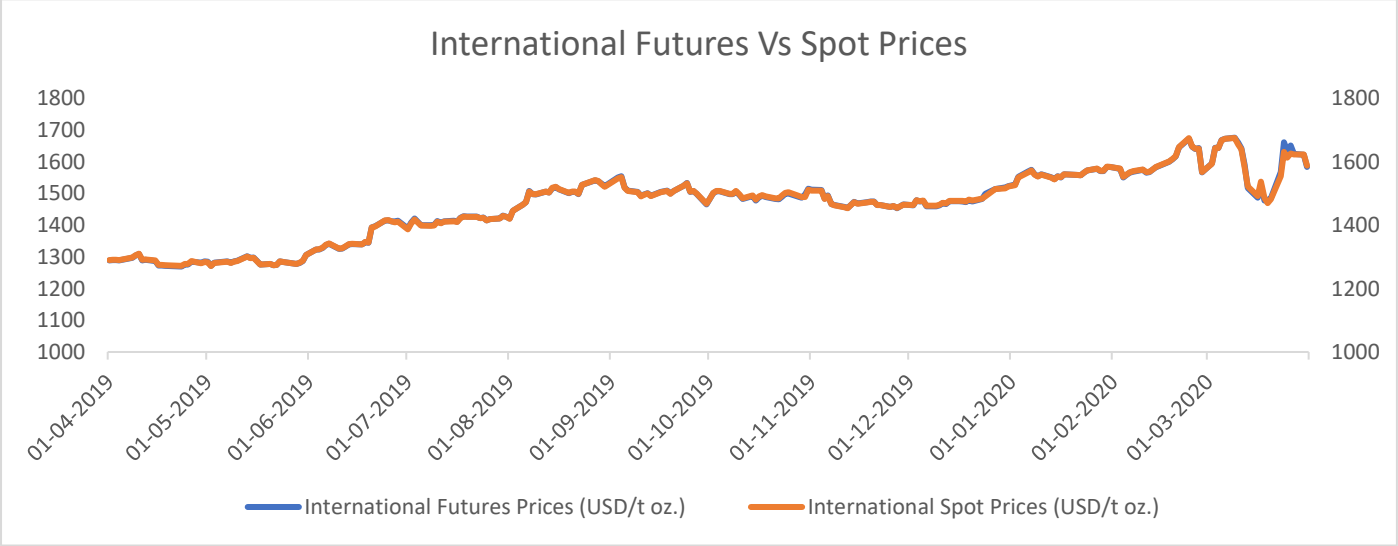
The correlation between Exchange Futures and Exchange Spot prices is 0.9969

The standard deviation of Exchange futures price was 0.84% for the period April 1,2019 to March 6, 2020

The standard deviation of Exchange spot price was 0.81% for the period April 1,2019 to March 6, 2020

The ratio of Standard deviation for the same period was 1.04

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



The correlation between Exchange Futures Prices and International spot prices is 0.9994

The standard deviation of International futures price was 1.10% for the period April 1,2019 to March 31, 2020

The standard deviation of International spot price was 1.04% for the period April 1,2019 to March 31, 2020

The ratio of Standard deviation for the same period was 1.05

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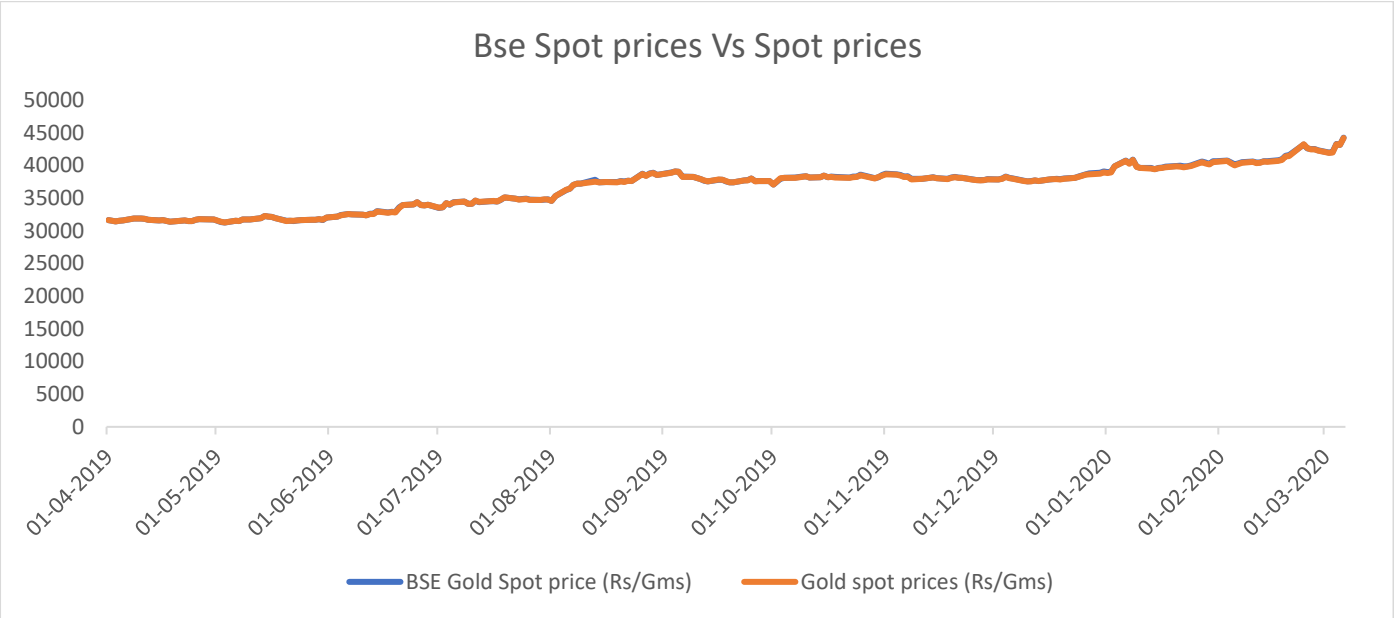
e. Comparison of Exchange polled price and mandi price (in case of agricultural commodities) / other relevant price (in case non-agricultural commodities) at basis centre



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 %
Gold	4.02%	-2.23%	3.89%	-2.71%
Gold M	2.17%	-2.70%	2.26%	-1.83%

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

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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
Gold	99.94%
Gold Mini	99.99%

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
Gold	Rs/Kg	-1.22	23.4
Note: Period 01/04/2019 to 06/03/2020			

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)**

India Top 10 major importing cities In India (In Metric Tonnes)		
City	2018	2019
Delhi	502	423
Cochin	153	156
Chennai	133	127
Ahmedabad	53	39
Kolkata	32	28
Hyderabad	31	23
Mumbai	23	26
Bangalore	11	8
Surat	0.9	2
Jaipur	0.8	1.4

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

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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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