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

Soybean

1. Background

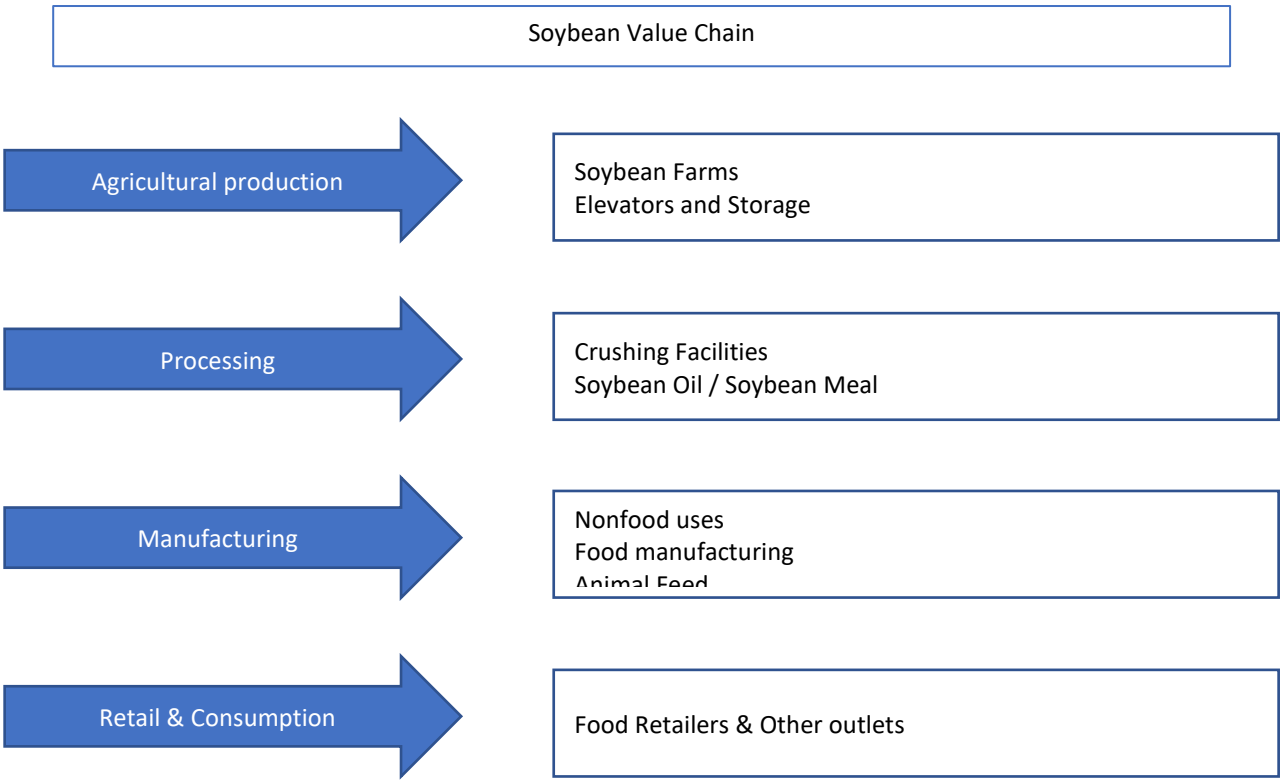
a) Brief about the commodity such as sample picture, lifecycle and various varieties/grade of the commodity found in India

Soybean (Glycine max (L.) Merrill) or soya bean is a legume crop belonging to the family Leguminosae. Soybeans occur in various sizes, and in many hull or seed coat colors, including black, brown, blue, yellow, green and mottled.

Soybean seeds contain high protein ranging from 35 to 40%, comparable to that of milk and eggs. It is also rich in oil (20%), vitamins and minerals. Because of its high nutritional quality, soybean is used as a major protein ingredient in the formulation of livestock and poultry feeds. It is also used as raw material for the manufacture of processed foods and food additives like soy sauce, tofu, soymilk, tokwa. It is also processed into soy paste (miso), and soy milk

Soybean is now the world's most important legume crop, and the sixth of all cultivated crops in terms of total harvest, and the most widely produced oilseed, grown in diverse climates worldwide. The Food and Agriculture Organization (FAO) classified it as an oil seed rather than pulse. The U.S., Argentina, Brazil, China and India are the world's largest soybean producers and represent more than 90% of global soybean production.

Value Chain for Soyabean



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Varieties of Soyabean Produced in India

Soybean variety	Year of release	Releasing Centre	Yield potential (kg/ha)	Oil content (%)
JS 95-60	2007	JNKVV, Jabalpur	1800-2000	16.6
Pratap Soya 1 (RAUS 5)	2007	MPUA&T, Udaipur	3000-3500	17.98
Pratap Soya 2 (RKS 18)	2007	MPUA&T, Udaipur	2300	17.13
TAMS 98-21	2007	PDKV, Akola	2200-2600	18.08
PS 1347	2008	GBPUA&T, Pantnagar	3100	15.54
JS 97-52	2008	DSR Indore and JNKVV, Jabalpur	2500-3000	17.48
SL 688	2008	PAU, Ludhiana	2500	20.54
VL Soya 59	2008	VPKAS, Almora	2600	20.04
VL Soya 63	2008	VPKAS, Almora	2700	20.23
PS 1225	2007	GBPUA&T, Pantnagar	3000-3200	18.01
VL Soya 65	2009	VPKAS, Almora	1500-1800	
LSB-3	2009	Adilabad		
MAUS-158	2009	Parbhani	2260	
Pusa 97-12	2009	IARI		
Birsa Safed Soybean-2	2009	Ranchi	2500	
NRC-77	2010	DSR, Indore	2400	
PS-19	2013	Pantanagar	2121	
MACS-1188	2013	ARI, Pune	2475	
RKS-24	2011	ZARS, Kota	2200-2400	0.19
GC-00209-4-1-1 (Karune)	2011	UAS, Bangalore	7000-8000 (green pods)	
DSb-1	2012	UAS, Dharwad	2500-3000	0.182
SL 744	2012	Ludhiana	18400	0.21
RVS 2001-4	2014		2500	
JS-20-29	2014			
JS-20-34	2014			
MAUS-2(Pooja)	2014			
Dsb-21	S.O. 1919 (E) 2014			
RKS-45 Pratap Soya 45)	SO 2817(E) 19.9.2013	ARS Kota	3000-3500kg/ha	
NRC-86 (ahilya-6)	2015			
KPS-344	2015			
North hill zone:-		Himachal Pradesh and Uttarakhand		
North Plain Zone:-	Punjab, Haryana, Delhi, North east plains of U.P. and Western Bihar			
Central Zone:-	M.P., Chhattisgarh, Rajasthan, Gujarat, Bundlekhand region of U.P., North-West Maharashtra			
North Eastern Zone:	West Bengal, Odhissa, Assam, Sikkim, Arunachal Pradesh, Nagaland, Tripura, Meghalaya, Jharkhand and Eastern Bihar			
Southern Zone:-	Karnataka, A.P., Tamil Nadu, Kerala and Southern parts of Maharashtra			

Source: http://oilseeds.dac.gov.in/Variety/Soyabean.aspx

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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 Soyabean Scenario		
in lakh tonnes	2018-19	2019-20 (P)
Opening Stocks	990.17	1,108.13
Production	3,586.46	3,380.82
Imports	1,446.39	1,514.66
Total Supply	6,023.02	6,003.61
Exports	1,482.98	1,514.98
Domestic Consumption	3,431.91	3,484.00
Ending Stocks	1,108.13	1,004.63
Source: United States Department of Agriculture		

India Soyabean Scenario		
in lakh tonnes	2018-19	2019-20
Opening Stocks	3.39	4.00
Production	109.30	93.00
Imports	1.85	2.00
Total Supply	114.54	99.00
Exports	1.78	1.50
Domestic Consumption	108.76	94.50
Ending Stocks	4.00	3.00
Source: United States Department of Agriculture		

Top 10 Major producing countries

Top 10 Major producing countries (in lakh tonnes)		
Country	2018-19	2019-20 (p)
Brazil	1170	1,245
United States	1205	968
Argentina	553	520
China	160	181
Paraguay	89	99
India	109	93
Canada	73	60
Russia	40	44
Ukraine	48	37
Bolivia	27	28
Source: United States Department of Agriculture		

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Top 10 Major consuming countries

Top 10 Major Consuming countries (in lakh tonnes)		
Country	2018-19	2019-20
China	1,020	1,037
United States	605	606
Argentina	474	487
Brazil	448	469
European	172	176
India	109	95
Mexico	62	63
Russia	53	56
Paraguay	40	40
Egypt	34	36

Source: United States Department of Agriculture

Top 10 Major Exporting countries

Top 10 Major Exporting countries (in lakh tonnes)		
Country	2018-19	2019-20
Brazil	745.94	785.00
United States	475.64	483.08
Argentina	91.04	82.00
Paraguay	49.01	59.00
Canada	52.58	43.00
Ukraine	25.31	24.50
Uruguay	27.50	21.30
Russia	7.97	9.00
European Union	1.79	2.50
Serbia	1.43	1.50

Source: United States Department of Agriculture

Top 10 Major Importing countries

Country	2018-19	2019-20
China	825.4	890.0
European Union	149.8	151.0
Mexico	58.7	60.0
Argentina	64.1	39.0
Egypt	33.8	37.0
Thailand	31.6	34.0
Japan	33.1	33.5
Indonesia	26.2	28.8
Taiwan	26.1	28.5
Turkey	24.1	28.0

Source: United States Department of Agriculture

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Top 10 Major producing States In India

Major Producing States In India (In lakh tonnes)		
State	2018-19	2019-20
Madhya Pradesh	58.18	40.11
Maharashtra	34.34	39.42
Rajasthan	8.95	6.56
Karnataka	2.91	2.69
Andhra Pradesh	1.57	1.51
Gujarat	1.24	0.86
Chhattisgarh	1.11	0.54
Others	1.04	1.38
Source: SOPA		

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

Direct procurement by the government agencies and storage in warehouses change in tariff and base prices of externally traded goods has a direct impact on the soybean prices.

As Soybean oil is an edible oil it comes under list of essential commodities, hence it is governed by Central Government under the Essential Commodities Act.

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

- Effects of the African Swine Fever on livestock
- Slowdown in consumption of soybeans mainly in China due to US-China trade talks - which delayed procurement for US soybeans.

2. Trading related parameter

a) Monthly and Annual traded volume

Month	Traded Volume (In MT)
Apr-19	-
May-19	-
Jun-19	-
Jul-19	-
Aug-19	-
Sep-19	-
Oct-19	14,720
Nov-19	40,150
Dec-19	95,500
Jan-20	400
Feb-20	-
Mar-20	-
Total	**1,50,770**

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b) Annual traded volume as proportion of total deliverable supply: 1.09%

- Annual Traded Volume: 1,50,770 MT
- Deliverable Supply: 1,38,23,000 MT

c) Annual traded volume as proportion of total annual production: 1.10%

- Annual Traded Volume: 1,50,770 MT
- Annual Production 19-20: 1,37,43,000 MT

d) Annual average Open interest as proportion of total production: Nil

- Annual Average OI: Nil
- Annual Production 19-20: 1,37,43,000 MT

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

- Annual Average OI: Nil
- Deliverable Supply: 1,38,23,000 MT

f) Monthly and Annual value of traded in Crores

Month	Traded Value (In Crs.)
Apr-19	-
May-19	-
Jun-19	-
Jul-19	-
Aug-19	-
Sep-19	-
Oct-19	54.66
Nov-19	161.30
Dec-19	405.15
Jan-20	1.78
Feb-20	-
Mar-20	-
Total	**622.90**

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

Nil

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

Nil

i) Monthly and Annual Average Open Interest (OI)

Nil

j) Annual average volume to open interest ratio: Nil

- Average of Traded Volume: 580 MT
- Average of Open Interest: Nil

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

- Unique Members = 4
- Unique Clients = 4

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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**

Nil

o) **Delivery defaults**

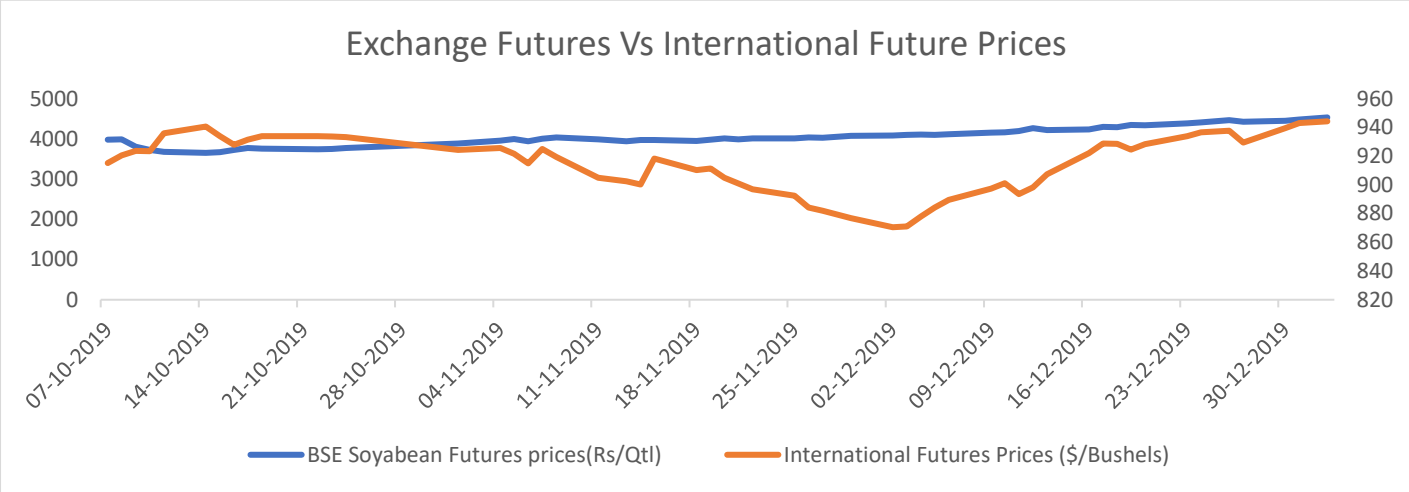
Number of instances = Nil

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 between exchange and International Futures Prices is 0.0030 for the period October 7,2019 to January 2, 2020

The standard deviation of Exchange Futures prices was 1.17% for period October 7,2019 to January 2, 2020

The standard deviation of International Futures prices was 0.73% for period October 7,2019 to January 2, 2020

The ratio of Standard Deviation for the same period was 1.61

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).**

Not Available

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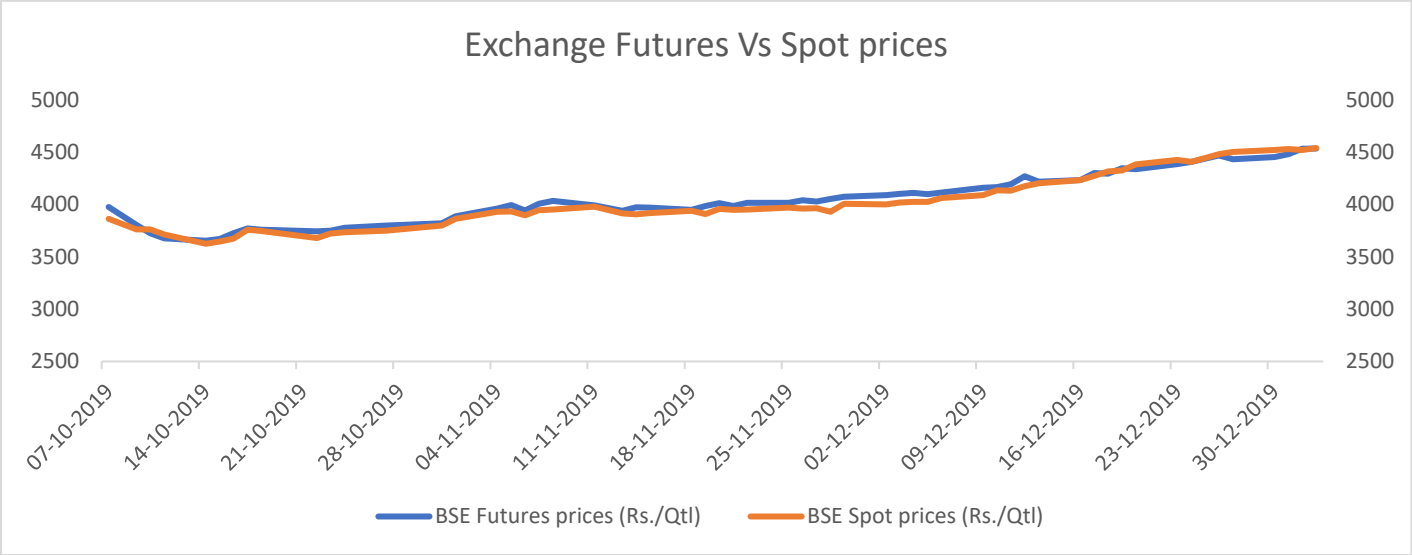
c) Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.



The correlation between exchange futures and Exchange Spot Prices is 0.9867.

The standard deviation of Exchange Futures prices was 1.08% for period October 7,2019 to January 1, 2020

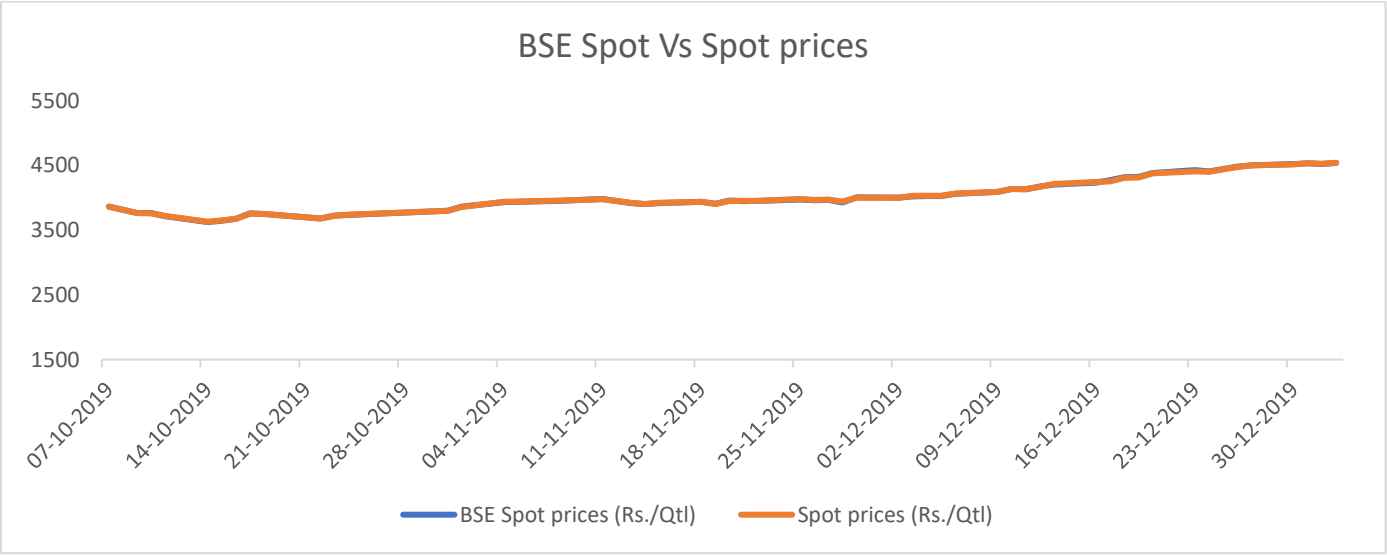
The standard deviation of Exchange Spot prices was 1% for period October 7,2019 to January 1, 2020

The ratio of Standard Deviation for the same period was 1.08

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

Not Available

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.



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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 %
Soyabean	1.92%	-4.32%	2.31%	-2.59%

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

There was 1 instance when the BSE Soyabean Futures contract was in contango by more than 4% in the period under review

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
Soyabean	99.92%

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
Soyabean	Rs/Qtl	-0.49	12.10
Note: Period 07/10/2019 to 01/01/2020			

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)

Name of State	**Name of the physical markets**	**Market Reach of Exchange delivery Centers**
Madhya Pradesh	Indore , Ujjain , Neemuch , Ratlam Dewas , Sehore ,Mandsaur , Shajapur Sagar	Basis Centre- Indore
Maharashtra	Latur , Akola Yavatmal ,Nagpur ,Nanded, Hingangath	Akola, Nanded, Hingangath -Additional Delivery Centre
Rajasthan	Kota , Jhalawar ,Ramgunj Mandi	Kota, Ramgunj Mandi- Additional Delivery Centre

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

Details about physical markets are given above. Region-wise open interest 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	International Soy Conclave 2019	Indore	300
2	Soybean Product Meeting	Indore	50

Note: The contract was discontinued w.e.f January 6, 2020

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

Not Applicable

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