



NSE CRUDE OIL
DERIVATIVES
Performance Review
2025-26

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Performance Review of Commodity Derivatives - FY 2025-26

Crude Oil Futures, Crude Oil Options on Futures and Crude Oil Mini Futures

1. Background

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

Crude oil is a naturally occurring mixture of hydrocarbons found underground. It can appear in the range of a highly viscous liquid to a thick tar-like substance. The colour of crude oil can also range from light yellow to dark brown or black. It consists of a complex mixture of hydrocarbons of various molecular weights plus other organic compounds. The main characteristics of crude oil are generally classified according to its sulphur content and density, Crude is classified, based on density (which the petroleum industry measures by its American Petroleum Institute (API) gravity.), as light, medium, heavy, or extra heavy. Crude can also be classified, based on sulphur content, into a sour and sweet category. Crude oil is one of the most economically mature commodity markets in the world. Even though most crude oil is produced by a relatively small number of companies, and often in remote locations that are very far from the point of consumption, trade in crude oil is both robust and global. Nearly 80% of international crude oil is transported through waterways in super-tankers.

West Texas Intermediate (WTI) is a grade of crude oil and one of the main three benchmarks in oil pricing, along with Brent and Dubai Crude. WTI is considered a high-quality oil that is relatively easy to refine. WTI is known as a light sweet oil. It contains less than 0.50% sulphur, whereas the norm is about 0.24% to 0.34%, making it "sweet." It also has a low density, making it "light." WTI is the main oil benchmark for North America, as it is sourced from the United States. It originates mainly in the Permian Basin, the site of the nation's highest-producing oil field. The oil travels via pipeline from Texas to refineries in the Midwest and the Gulf of Mexico.

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 (Million barrels per day)

Global Scenario	2024-25	2025-26
Production	103.37	106.36
Production (excluding other liquid productions)	82.02	84.42
Consumption	102.81	NA
Ending Stocks	0.6	NA

Note: includes other liquid productions

Source: EIA.

Crude Oil India Balance Sheet (Million MT)

Indian Scenario	FY25	FY26
Opening Stocks	0	0
Production	26.49	25.98
Imports	243.2	245.4
Total Supply	269.7	271.4
Exports	-	-
Domestic Consumption	239.2	243.2
Closing Stocks	-	-

Source: Petroleum Planning and Analysis Cell, MoPNG, GOI

Top 10 major producing countries (Thousand barrels per day)

Name of the country	2024	2025
United States	20135	-
Saudi Arabia	10856	-
Russia	10752	-
Canada	5888	-
Iran	5062	-
Iraq	4398	-
China	4264	-
United Arab Emirates	4006	-
Brazil	3466	-
Kuwait	2719	2719

Source: Statistical Review of World Energy 2025, Energy Institute

Top 10 major consuming countries (Thousand barrels per day)

Countries	2024	2025
United States	18995	-
China	16374	-
India	5621	-
Saudi Arabia	3959	-
Russia	3846	-
Japan	3238	-
South Korea	2892	-
Brazil	2575	-
Canada	2333	-

Germany	2052	-
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Source: Statistical Review of World Energy 2025, Energy Institute

Top 10 major exporting countries/regions (Thousand barrels per day)

Countries	2024	2025
Saudi Arabia	6420	-
Russia	4868	-
Canada	4393	-
United States	3971	-
United Arab Emirates	3658	-
South & Central America	3686	-
Iraq	3597	-
West Africa	3184	-
Other Middle East	3276	-
Other CIS	1814	-
North Africa	1464	-

Source: Statistical Review of World Energy 2025, Energy Institute

Top 10 major importing countries/regions (Thousand barrels per day)

Countries	2024	2025
China	11497	-
Europe	9183	-
United States	6512	-
Other Asia	6006	-
India	4632	-
Japan	2521	-
Singapore	849	-
Canada	514	-
South & Central America	408	-
Other Middle East	442	-
Other CIS	310	-

Source: Statistical Review of World Energy 2025, Energy Institute

Top producing states in India (FY 2025-26)

State/UT	Production of Crude Oil (Thousand MT)
Western Offshore	11919
Gujarat	5183
Assam	4415
Rajasthan	2946
Eastern Offshore	2725
Andhra Pradesh	266
Tamil Nadu	242

Source: Ministry of Petroleum and Natural Gas

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

Continued marketing freedom for domestic crude (FY 2025-26): Marketing freedom for domestically produced crude remained unchanged in FY 26. Government allocation continued to be discontinued; E&P producers sold directly to Indian refiners, and exports of domestic crude remained prohibited. Pricing therefore stayed market linked with no administered regime reintroduced.

No new windfall or export levy on crude (FY 2025-26): Following the withdrawal of the Special Additional Excise Duty on crude oil in December 2024, no crude specific windfall or export linked levy was reintroduced during FY26. Upstream realisations remained benchmark linked, without ad hoc crude taxation.

Upstream framework reforms (medium-term impact): The Oilfields (Regulation and Development) Amendment Act, 2025 modernised the upstream regime by broadening “mineral oils” (including unconventional resources), simplifying approvals, and supporting enhanced recovery and new exploration. These measures are positioned to improve domestic supply over time.

Import dependence context (supply backdrop): India’s crude import dependence remained high, at 88.2% in FY 2024-25 and 88.6% in FY 2025-26 (till Jan 2026), reinforcing reliance on global benchmarks for domestic pricing and spot trade dynamics.

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

West Asia tensions and macro impact (FY 2025-26): Geopolitical tensions in West Asia continued to be transmitted into India through crude price volatility. Given import dependence in the high-80% range, sustained oil price increases remain macro-relevant, affecting inflation, the current account balance, and growth via higher import bills and pass-through to domestic prices.

Red Sea disruptions and freight costs: Disruptions in the Red Sea/Suez route during FY 26 led to rerouting via the Cape of Good Hope, increasing voyage time, fuel use, insurance

premiums, and freight costs. This raised landed crude costs for importers like India and added to imported inflation pressures.

Sanctions on Russian oil (import strategy implications): U.S. sanctions on Russian energy increased compliance and logistics risks, even as Russia remained a key supplier to India. Official responses indicate that discounted Russian crude supported refining economics, but tighter enforcement could necessitate costlier sourcing adjustments. The value share of crude oil imports from Russia has moderated from 35.1% in FY25 to 30.3% in FY26, from Commerce Ministry/DGCI&S data.

Structural vulnerability from import dependence: High crude import dependence keeps India exposed to global oil shocks, with established transmission channels through inflation, exchange rates, and external balances remaining intact during FY26.

2. Trading related parameter

NSE had the following Crude Oil derivatives available for trading on its Commodity Derivatives Segment in FY 2025-26.

- Crude Oil Futures
- Crude Oil Options on Futures
- Crude Oil Mini Futures

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

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Month	100 Barrels	100 Barrels
	WTI Crude Oil Futures	WTI Crude Oil Options on Futures
Apr-25	740	26,72,322
May-25	594	23,71,665
Jun-25	1,207	19,56,457
Jul-25	1,067	26,24,768
Aug-25	808	23,40,753
Sep-25	1,614	19,58,245
Oct-25	1,530	12,01,647
Nov-25	1,139	14,53,638
Dec-25	929	20,17,569
Jan-26	2,006	17,44,563
Feb-26	2,418	19,43,135
Mar-26	9,378	11,81,200
FY 2025-26	23,430	2,34,65,962

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

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Contract	Annual Volume (MT)	Traded (Million MT)	Deliverable Supply (Million MT)	Annual traded volume as proportion of total deliverable supply (%)

Crude Oil Futures	0.31	271.40	0.12
Crude Oil Options on Futures	320.13	271.40	117.96

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

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Contract	Annual Volume (Million MT)	Traded (Million MT)	Annual Production (Million MT)	Annual traded volume as proportion of total annual production (%)
Crude Oil Futures	0.31		25.98	1.23
Crude Oil Options on Futures	320.13		25.98	1232.24

d. Annual average Open interest as proportion of total production

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Contract	Average OI (MT)	Annual Production (Million MT)	Annual traded volume as proportion of total annual production (%)
Crude Oil Futures	0.001	25.98	0.005
Crude Oil Options on Futures	0.05	25.98	0.20

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

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Contract	Annual OI (MT)	Deliverable Supply (Million MT)	Annual traded volume as proportion of total deliverable supply (%)
Crude Oil Futures	0.001	271.40	0.00

Crude Oil Options on Futures	0.05	271.40	0.019
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f. Monthly and Annual value of trade (in Rs. Crores)

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Month	Rs Crores	Rs Crores
	WTI Crude Oil Futures	WTI Crude Oil Options on Futures
Apr-25	39.73	1,54,722.93
May-25	30.89	1,36,312.34
Jun-25	72.14	99,466.03
Jul-25	61.70	1,47,518.54
Aug-25	45.61	1,40,946.01
Sep-25	90.48	1,13,420.19
Oct-25	80.92	65,526.28
Nov-25	60.30	75,956.74
Dec-25	48.58	1,08,367.74
Jan-26	110.25	92,698.94
Feb-26	142.06	1,10,811.48
Mar-26	779.25	79,542.55
FY 2025-26	1,561.91	13,25,289.77

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

Crude Oil derivatives are cash settled contracts. Thus, the same is not applicable.

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

Crude Oil derivatives are cash settled contracts. Thus, the same is not applicable.

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

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Month	100 Barrels	100 Barrels
	WTI Crude Oil Futures	WTI Crude Oil Options on Futures
Apr-25	57	5,988
May-25	33	3,155
Jun-25	56	2,736
Jul-25	32	3,358
Aug-25	64	3,032
Sep-25	53	3,481
Oct-25	148	3,444
Nov-25	51	3,434
Dec-25	99	3,898
Jan-26	221	5,750
Feb-26	147	4,701
Mar-26	179	3,122
FY 2025-26	95	3,834

j. Annual average volume to open interest ratio

The traded volume for Crude Oil Mini Futures in FY 202-26 was NIL.

Contract	Unit	Annual Average Traded Volume	Annual Average Open Interest	Annual average OI as a proportion of Annual average volume (%)
Crude Oil Futures	100 Barrels	91	95	104.39
Crude Oil Options on Futures	100 Barrels	91,307	3,834	4.19

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

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Contract	Unique Member Count	Unique Client Count
Crude Oil Futures	66	2737
Crude Oil Options on Futures	159	131153

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 by FPOs / farmers and VCPs/hedgers* for Crude Oil Derivatives in FY 2025-26 was NIL/Negligible.

* Based on the self-declaration available for the categorization of clients/members

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

The traded volume by FPOs / farmers and VCPs/hedgers* for Crude Oil Derivatives in FY 2025-26 was NIL/Negligible.

Based on the self-declaration available for the categorization of clients/members

n. Algorithmic trading as percentage of total trading

The traded volume for Crude Oil Mini Futures in FY 2025-26 was NIL.

Contract	Algorithmic trading as percentage of total trading (%)

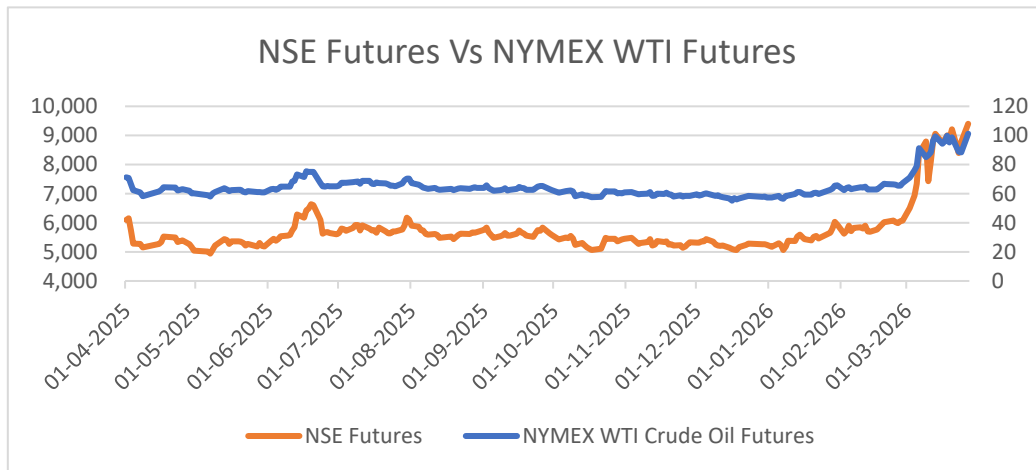
Crude Oil Futures	49.90
Crude Oil Options on Futures	30.00

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

Crude Oil derivatives are cash settled contracts. Thus, the same is not applicable.

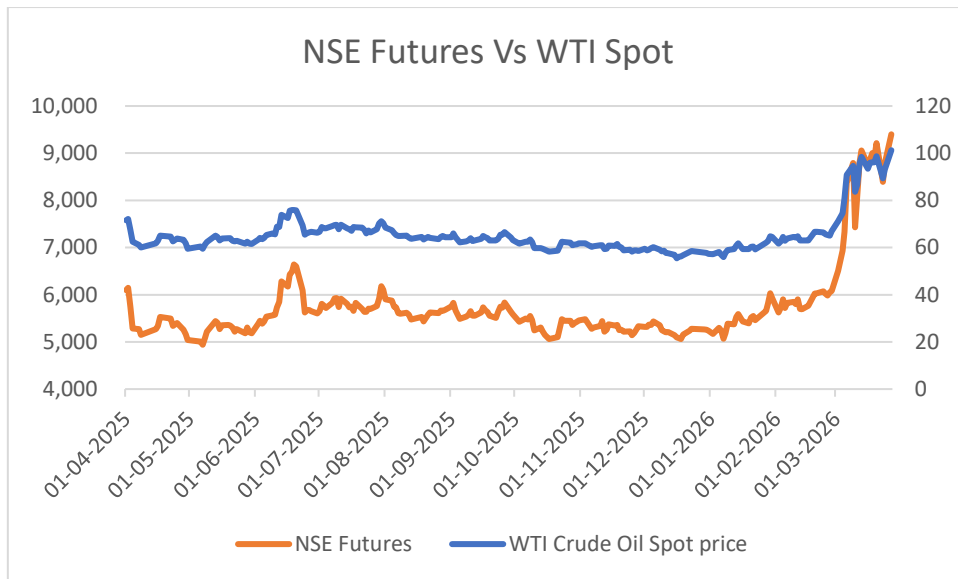
3. Price movements

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



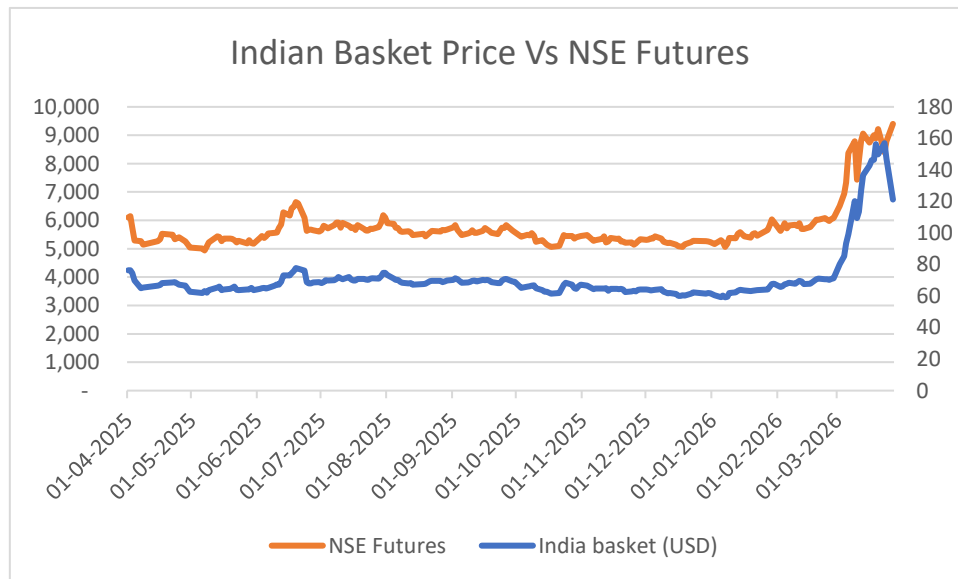
Correlation: 97.8% | Ratio of Std Deviation: 0.01

- 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).**



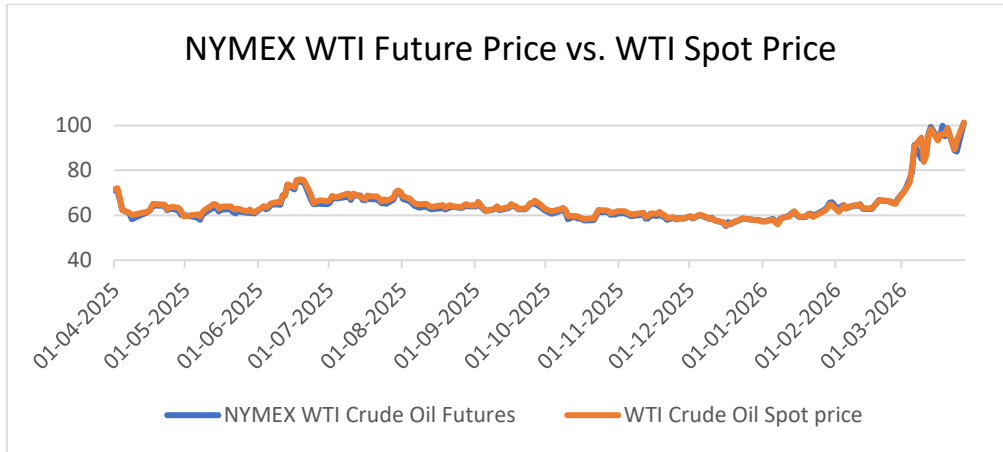
Correlation: 97.42% | Ratio of Std Deviation: 0.01

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



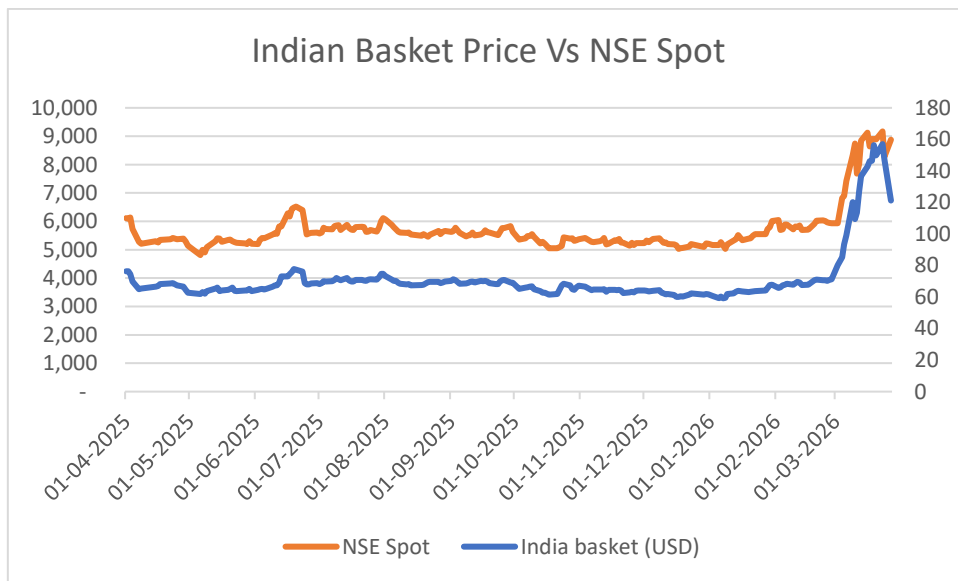
Correlation: 95.27% | Ratio of Std Deviation: 0.02

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



Correlation: 99.3% | Ratio of Std Deviation: 0.999

- 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: 96.06% | Ratio of Std Deviation: 0.021

- 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 Crude Oil Mini Futures in FY 25-26 was NIL.

Commodity	Max Volatility in Futures Prices (%)	Min Volatility in Futures Prices (%)	Max Volatility in Spot Prices (%)	Min Volatility in Spot Prices (%)
WTI Crude Oil	15.48	0	14.97	0

Volatility calculation: $(\text{Day} - \text{Previous day's price}) / \text{Previous day's price}$

- 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.**

Instances where Backwardation exceeded 4%: -

Date	Backwardation percentage
03-04-25	6.5%
04-04-25	7.8%
23-06-25	4.7%
24-06-25	5.4%
10-10-25	4.0%
02-02-26	6.9%
10-03-26	15.0%
16-03-26	4.2%
23-03-26	8.5%

Instances where Contango exceeded 4%: -

Date	Contango percentage
06-05-25	4.1%
13-06-25	7.9%
17-06-25	4.1%
23-10-25	6.8%
29-01-26	4.1%
02-03-26	9.7%
05-03-26	6.5%
06-03-26	12.8%
09-03-26	5.5%
11-03-26	5.7%
12-03-26	9.8%
24-03-26	6.2%
27-03-26	5.9%

Sources for this section: Trading view, Petroleum Planning and Analysis Cell, MoPNG, GOI and NSE

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.**

Date	Hedge Effectiveness (Change in Futures/Change in Spot)
08-Apr-25	0.60
15-May-25	0.13
11-Jun-25	-0.13
22-Aug-25	1.34
10-Oct-25	0.42

11-Nov-25	0.33
17-Dec-25	8.86
08-Jan-26	-1.01
11-Feb-26	-0.25
11-Mar-26	-1.55
Average	0.87

The Dollar Offset Method of determining Hedge Effectiveness is one of the quantitative methods used extensively. It involves comparing the ratio of the change in fair value or present value of future expected cash flows of the hedging instrument (NSE Futures) with the change in the fair value or present value of future cash flows of the hedged item (Spot Price) attributable to the hedged risk.

Methodology

To examine the hedge effectiveness twelve random dates were chosen with minimum gap between the period as 15 days and maximum being 3 months period. For each of these chosen dates, Spot Price and Futures closing rates were recorded. The change in value of Spot rates as well as Futures closing rates for two consecutive periods was recorded. Hedge effectiveness is the ratio of change in the value of Spot prices to the change in Futures value **Values between 0.80 to 1.25 indicate the hedge effectiveness is good. Values below 80% indicate that the hedge effective is not good. Based on the observations, it can be noticed that overall hedge effectiveness is 0.87.**

Longer period hedge tends to be less effective. It could be due to roll-over and related contango issues or liquidity issues. Second aspect is when there is a disruptive change in the underlying market, hedge effectiveness declines.

Basis risk:

Basis is the difference between the spot price and the futures price at a particular point in time. Basis is usually very small and tends to decrease as futures contract moves towards expiry.

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).

In the case of Crude oil, apart from major refiners, industries related to Plastic, Tyres, Rubber, Petrochemicals, Paint, Glass, etc. across the country, have exposure to Crude Oil as they use its refined products extensively. Crude Oil derivatives contracts are offered as cash settled products which such industry players can use to hedge their exposures without the necessity of taking physical delivery of Crude oil.

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

In the case of Crude oil, apart from major refiners, industries related to Plastic, Tyres, Rubber, Petrochemicals, Paint, Glass, etc. across the country, have exposure to Crude Oil as they use its refined products extensively. The region wise OI data is not available.

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

A total of 62 Commodity IAPs were conducted reaching out to 1987 participants. These participants included General public, faculties of educational institutes corporate employees, FPOs, Police officers and Women.

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 Crude Oil contracts. We have value chain participants such as Bharat Petroleum Corporation Ltd (BPCL), Oil & Natural Gas Corporation (ONGC), Indian Oil Corporation (IOCL), Hindustan Petroleum Corporation Ltd (HPCL), Chennai Petroleum Corporation Ltd (CPCL), etc. as part of our Energy PAC, who guide us on how to get more participation from physical as well as other market participants.

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