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Pre and Post COVID-19 Disparity of Financial Performance of Oil and Gas Firms: An Absolute and Relational Study

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ABSTARCT

COVID-19 changed the shape and size of the business and industry and lowered the multidimensional performances of the firms, globally. The outbreak of the corona mitigated or stopped the operational activities of businesses and industry and affected the routine of individuals at large. The study analyzes the pre and post-COVID-19 financial performance of Indian oil and gas firms and tries to get the impact of the financial performances. The analysis is based upon the secondary financial data while ratio analysis and statistical measures are applied to get financial performances, mutual absolute and relational variations of financial performances pre and post-COVID-19. There was post-COVID-19 relational growth of total revenue, total expenses, profits, profitability, and liquidity seen higher in the smaller-scale production Indian oil and gas firms than the larger-scale production firms. The larger Indian oil and gas firms' solvency ratio enhanced post-pandemic period while smaller-scale production oil and gas firms enjoy the leverage to enhance their profits and profitability. To enhance the profitability in larger scale production Indian oil and gas companies need to improve their cost and managerial efficiency, and external funds in their capital composition.

Keywords: Oil and Gas, COVID-19, Financial Performance, Profitability, Liquidity, Ratio Analysis
JEL Classifications: Q40, Q43, M40, M41, L25

1. INTRODUCTION

COVID-19 changed the shape and size of the business and industry and lowered the multidimensional performances of the firms, globally. The outbreak of the corona mitigated or stopped the operational activities of businesses and industry and affected the routine of individuals at large. In India, corona affected every sector of the economy and create challenges for trading and manufacturing firms. Oil and gas firms in India play a vital role in industrial operation, and transportation and fulfills various domestic needs. The outbreak of the corona affected the production, imports, and supply of oil and gas in most nations. Asymmetrical supply and demand led the Indian oil and gas firms into a financial crisis. It is evident that most of the Indian manufacturing firms' financial performance was lower or negative during the COVID-19 period and Indian oil and gas firms were not the exceptions to the pandemic. Increasing prices of crude oil, lower scale production, unavailability or scarcity of production inputs, and fixed costs lower the profitability, liquidity, and solvency (long-term paying ability) of the Indian oil and gas firms. Also, the behavioral aspects of the non-financial factors affected the financial performances of the firms, externally. So, there is a need to consider the effects of COVID-19 on the financial performances of oil and gas firms. Also, identify the affected aspects of the financial performance of the oil and gas firms to rejuvenate the industry.

2. LITERATURE REVIEW

Razavi et al. (2022) revealed that COVID-19 significantly affected Pars Oil Gas Company's (POGC's) operational expenses, operational costs, technical costs, and revenue due to a decline in the oil demand, globally. The pandemic affected employment in

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the nation and GDP, ultimately. During the pandemic COVID-19, many oil and gas companies reduced employees and operational expenses but continued their activities. Algamdi et al. (2021) observed that in Saudi Arabia the oil industry is essential and has an important fall over into certain services industries like travel, business, IT, and religious tourism. They forecasted that the fall in oil prices will not be considered as it affects the export earnings. Since oil prices become a careful driver of rising, the fall in oil prices will have a positive effect on the consumer price index, and the most important impact of the shock in oil prices will be the decline in investment. Liu and Chen (2022) found that the COVID-19 outbreak greatly influenced the demand and supply chain of oil and gas. The COVID-19 pandemic increased the insecurity in the global economic policy and natural resources goods price. The pandemic unexpectedly proved the cause of the economic recession. After the COVID-19 pandemic, crude oil prices and oil prices are related to global economic policy uncertainty. Samman and Jamil (2021) found that the financial markets of GCC counties were affected by the decline in oil prices due to COVID-19. They found a positive relationship between the oil prices and share prices in GCC countries during the pandemic COVID-19 period.

Al Samman and Akkaş (2022) found that the decreasing oil prices and COVID-19 negatively governed the prices of shares in the GCC stock market. The first stage study reveals that the economies are unfavorably affected by the reduction in production in the real economy. Saudi Arabia is the most affected country by low oil prices, and the least affected countries are Bahrain, Kuwait, Qatar, and Oman. In the second stage study, they found that government support mitigated the negative effects of oil prices and COVID-19 on stock prices among oil-rich countries. They also observed that all GCC countries were not equally affected by the falling oil price crisis and the COVID-19 pandemic. Deshwal et al. (2021) found that the short-term impact of COVID-19 on the renewable energy sector was moderate. Akram and Haider (2022) studied the correlations between oil prices energy stocks, and technology stocks. They found a weaker but positive correlation between oil prices and clean energy stocks. However, there was a negative correlation between clean energy and technology stocks. There was a better position of technology and clean energy stocks after the period of the pandemic. Phuong (2021) studied the impact of COVID-19 on the stock prices of oil and gas companies in Vietnam. He found that the oil and gas companies' stocks responded positively after the pandemic. Shaikh et al. (2022) studied the impact of COVID-19 on the profitability and capitalization of renewable energy. They found a rise in the rise of capitalization of renewable energy companies. But, they found a negative relationship between the relative change in the profitability and capitalization of the firms between 2020 and 2021. There is an increment in the renewable energy firms by 150% while a negligible increment in the profits by 2% only.

Szczygielski et al. (2022) found that the COVID-19 affected the all industries negatively. They also found that some of the industries performed better than the performance on normal days. Kubiczek and Derej (2021) observed significant variations in the sensitivity in particular industries due to COVID-19. In most industries, there was a decline in revenues and while some others recorded unaffected by the impact of COVID-19. Devi et al. (2020) found that the COVID-19 affected various industries in Indonesia. They found no significant change in the liquidity and leverage ratio. There were a negligible decrease in the liquidity and profitability ratio of real estate and building construction, property, trade, services, finance, and investment sectors. Amnim et al. (2021) found that the COVID-19 affected the financial performance of firms in Nigeria. The lockdown affected the importing and exporting of goods and access to factors of production that affected the financial performance, negatively. Chaudhary et al. (2020) studied the daily index data of eight sectors of the Indian economy from 2019 to 2020. They found the volatility in the stock prices during the pandemic period. Ichsani et al. (2022) studied the financial performances of pharmaceutical companies before and during the COVID-19 pandemic. They found the differences between the solvency of the pharmaceutical companies before and during the pandemic period. Alsamhi et al. (2022) studied the different types of firms listed on the Bombay Stock Exchange. They found the differences among the total income, net profit, net sales, and EPS (earning per share) pre and post-pandemic. There are no differences in the food and construction sector before and after the pandemic.

Li et al. (2022) found a decline in renewable energy in China and India while growth was reported in the US. Karim et al. (2021) found a weakening in the liquidity position of the banks during the pandemic period. Daryanto et al. (2020) found the impact of the COVID-19 outbreak on the financial performances of the gas firms. The first quarter after the COVID-19 outbreak made slow down the growth of the company. Kaakeh and Gokmenoglu (2022) found a weak positive correlation between Environmental Performance (EP) and Financial Performance (FP) during the pandemic. They supported that environment-friendly business models positively affect the capital structure of the firms. Ma et al. (2021) found the direct impact of COVID-19 on the SMEs in china. They suggested that the government initiatives reduce the negativity of the COVID-19 pandemic on Chinese SMEs. Al Zyadat and Asfoura (2021) found that the COVID-19 affected the stock market negatively. The Saudi Arabian government took necessary steps to mitigate the impact of the COVID-19 on Saudi Arabian stock market. Jan et al. (2021) found that COVID-19 affects the oil, health, travel, education, and entertainment sectors of Saudi Arabia. Olumuyiwa and Ibrahim (2021) found a negative impact on the economy, education, banking activities, social gatherings, religious worship, sporting activities, and other sectors of the economy and society. Boshnak et al. (2021) studied the impact of COVID-19 on the performance of firms listed in Saudi Arabia from the third quarter of 2019 to the third quarter of 2020. They found that the performance of the larger scale production companies is better than smaller scale production companies' pre and post-pandemic. The sales revenue and liquidity do not govern the firms' performances during the pandemic period. They also found that petrochemicals, consumer durables & apparel, real estate, and consumer services were affected by the pandemic, severely.

3. REASEARCH METHODOLOGY

The study is purely based on the secondary data obtained from the website. Indian Oil Corporation Limited (IOCL), Oil and Natural Gas Commission (ONGC), Hindustan Petroleum (HP), Bharat Petroleum (BP), and Gas Authority India Limited (GAI) companies are the leading and bigger oil and Gas companies. While, Chennai Petroleum (CP), Gujrat Gas (GG), and Indraprastha Gas (IP) are the smaller Indian oil and gas companies. There is a comparative study between the pre and post-COVID-19 periods. The pre- COVID -19 period is before 2020 while the post-COVID-19 period is after 2020 to 2022. Ratio analysis was applied to get the profitability and liquidity of the Indian oil and gas companies.

1. $\text{Profitability(PBT)ratio} = \dfrac{\text{Profit Before Tax}}{\text{Total Revenue}} \times 100$;

2. $\text{Liquidity(Current)Ratio} = \dfrac{\text{Current Assets}}{\text{Current Liabilities}}$;

3. $\text{Debt-Equity ratio} = \dfrac{\text{Long term debts}}{\text{Shareholders Equity}}$;

The arithmetic average (mean) was calculated to get the central tendency of the financial variables pre and post-COVID-19. The excess of the mean of financial variables pre-COVID-19 over the post-COVID-19 financial variables indicates the positive financial performance of the firms. The relational and absolute variations were calculated to get the relational performance between the oil and gas firms of India. While the rank correlation was calculated to get the relational variations of financial variables of Indian oil and gas companies between pre and post-COVID-19.

4. $\text{Rank Correlation (rs)} = 1 - \dfrac{6\sum(D*D)}{n(n*n-1)}$;

The rank correlation between mean of financial variables before and after COVID-19 (R_1 and R_2) calculated to get the mutual absolute variations. While, the average mutual absolute and relational financial performance (R_3) and studied with mutual absolute and relational growth (R_4) based on the pre COVID-19 performance.

4. DATA ANALYSIS AND RESULTS

The pre and post-analysis of the firms' performance consist of the relational and absolute financial performance.

4.1. Total Revenues of Indian Oil and Gas Companies

Pre and post-COVID-19 analysis of total revenues reveal the absolute and relational growth in total revenues based on the pre-COVID-19 performance of the firms. Absolute growth indicates a growth of business activities while relational growth explains the comparative growth of the efficiency of business activities among the firms.

From Table 1, it is clear that there is absolute growth in the total revenues of the Indian oil and gas companies during the post-COVID-19 period. The mutual absolute total revenue performance among the Indian oil and gas companies was the same in the pre and post-period of COVID-19 ($r_{s,\ R1\ and\ R2} = 1$). There was relational negative growth of total revenue in the post-COVID-19 period ($r_{s,\ R3\ and\ R4} = -0.43$) among the Indian oil and gas companies after COVID-19. This refers that the relational growth of the total revenues is higher in smaller firms while lower in the bigger firms of Indian oil and gas.

4.2. Total Expenses of Indian Oil and Gas Companies

Pre and post-COVID-19 analysis of total expenses reveal the absolute and relational growth in total expenses based on the pre-COVID-19 performance of the firms. Absolute growth indicates a growth of business activities while relational growth explains the comparative growth of the business activities among the firms.

From Table 2, It is clear that the absolute growth of the total expenses of the Indian oil and gas companies in the post-COVID-19 period. The mutual absolute total revenue performance among the Indian oil and gas companies was the same in the pre and post-period of COVID-19($r_{s,\ R1\ and\ R2} = 0.95$). There was relational negative growth of total expenses in the post-COVID-19 period ($r_{s,\ R3and\ R4} = -0.31$) among the Indian oil and gas companies after COVID-19. This refers that the relational growth of the total expenses is higher in smaller firms while lower in the bigger firms of Indian oil and gas.

4.3. Profit Before Tax (PBT) of Indian Oil and Gas Companies

Pre and post-COVID-19 analysis of PBT reveals the absolute and relational growth in PBT based on the pre-COVID-19 performance of the firms. Absolute growth indicates a growth of business activities while relational growth explains the comparative growth of the cost and managerial efficiency of business activities among the firms.

Table 1: Pre and post COVID-19 Total revenues of Indian oil and gas companies (Rs. in crore)

Statistical measures	Total revenues of Indian oil and gas companies							
	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
Mean 1 (2015-19)	422718.93	93615.45	235200.95	58203.90	215022.84	33895.92	6891.71	4371.54
R1	1	4	2	5	3	6	7	8
Mean 2 (2020-22)	491437.14	98120.51	296347.67	75231.92	286347.58	34382.08	12286.41	6552.56
R2	1	4	2	5	3	6	7	8
Av. Rank of R_1 and R_2 (R3)	1	4	2	5	3	6	7	8
± (based on pre COVID-19)	68718.21	4505.07	61146.72	17028.02	71324.74	486.16	5394.70	2181.02
Post COVID increment (%)	16.26	4.81	26.00	29.26	33.17	1.43	78.28	49.89
Increment rank (R4)	6	7	5	4	3	8	1	2

Source: Calculations based on the values given in the Appendix 1

From Table 3, It is clear that there is absolute growth of the PBT of the Indian oil and gas companies in the post-COVID-19 period except for ONGC and CP oil and gas companies of India. The mutual absolute total PBT performance among the Indian oil and gas companies was the same in the pre and post-period of COVID-19 (r_s, $_{R1 and R2}$ = 0.9). There was relational negative growth of total revenue in the post-COVID-19 period (r_s, $_{R3 and R4}$ = −0.35) among the Indian oil and gas companies after COVID-19. This refers that the relational growth of the PBT is higher in smaller firms while lower in the bigger firms of Indian oil and gas.

4.4. Profitability (PBT) Ratio of Indian Oil and Gas Companies

Pre and post-COVID-19 analysis of profitability reveal the relational and mutual growth in profitability based on the pre-COVID-19 performance of the firms. The higher profitability ratio explains the increment of the gap between the total revenues and total expenses. The increasing trend of profitability reveals the cost and managerial efficiency by enhancing the gap between the total revenues and total expenses.

From Table 4, it is clear that there is an absolute decrement in the PBT ratio of the Indian oil and gas companies in the post-COVID-19 period except for GAI, GG, and IG oil and gas companies of India. The absolute change in the profitability between the pre and post-COVID-19 period is insignificantly different (r_s, $_{R1 and R2}$ = 0.98). Post-COVID-19, there is a significant decrement in the profit earning capacity of the bigger Indian oil and gas companies than the smaller companies, comparatively (r_s, $_{R3 and R4}$ = 0.32).

4.5. Liquidity (Current Ratio) of Indian Oil and Gas Companies

Pre and post-COVID-19 analysis of liquidity reveal the relational and mutual growth in liquidity based on the pre-COVID-19 performance of the firms. The relational growth of short-term paying ability (liquidity) explains the comparative growth of working capital in the business organization. The increasing trend of liquidity reveals the availability of funds to run operational activities and the ability to pay out short-term liabilities. The optimum or normal liquidity ratio should be preferred to maintain the balance between liquidity and blockage or excess investment of funds in current assets.

Table 2: Pre and post COVID-19 total expenses of Indian oil and gas companies (Rs. in crore)

Statistical measures	Indian oil and gas companies							
	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
Mean 1 (2015-19)	401557.03	64050.13	225033.94	52314.76	207531.90	33386.72	6432.08	3496.12
R1	1	5	2	4	3	6	7	8
Mean 2 (2020-22)	468417.39	70999.84	285710.66	65959.31	278005.57	34351.36	10740.48	5048.22
R2	1	4	3	5	2	6	7	8
Av. Rank of R_1 and R_2 (R3)	1	4.5	2.5	4.5	2.5	6	7	8
± (based on pre COVID-19)	66860.36	6949.71	60676.72	13644.54	70473.67	964.64	4308.41	1552.10
Post COVID increment (%)	16.65	10.85	26.96	26.08	33.96	2.89	66.98	44.39
Increment Rank (R4)	6	7	4	5	3	8	1	2

Source: Calculations based on the values given in the Appendix 2

Table 3: Pre and post COVID-19 profit before tax of Indian oil and gas companies (Rs. in crore)

Statistical measures	Profit before tax of Indian oil and gas companies							
	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
Mean 1 (2015-19)	21161.90	29565.32	10167.01	5889.14	7490.94	509.20	459.64	875.42
R1	2	1	3	5	4	7	8	6
Mean 2 (2020-22)	23019.75	27120.67	10637.01	9272.61	8342.00	30.72	1545.93	1504.34
R2	2	1	3	4	5	8	6	7
Av. Rank of R_1 and R_2 (R3)	2	1	3	4.5	4.5	7.5	7	6.5
± (based on pre COVID-19)	1857.85	-2444.64	470.00	3383.47	851.07	-478.48	1086.29	628.92
Post COVID increment (%)	8.78	-8.27	4.62	57.45	11.36	-93.97	236.34	71.84
Increment Rank (R4)	5	7	6	3	4	8	1	2

Source: Calculations based on the values given in the Appendix 3

Table 4: Pre and post COVID-19 PBT (profit before tax) ratio of Indian oil and gas companies (Rs. in crore)

Statistical measures	Profit before tax of Indian oil and gas companies							
	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
Mean 1 (2015-19)	5.09	31.41	4.45	9.97	3.50	1.97	6.54	19.86
R1	5	1	6	3	7	8	4	2
Mean 2 (2020-22)	4.86	26.61	3.81	12.03	3.11	0.59	13.08	23.25
R2	5	1	6	4	7	8	3	2
Av. Rank of R_1 and R_2 (R3)	5	1	6	3.5	7	8	3.5	2
± (based on pre COVID-19)	−0.22	−4.80	−0.64	2.05	−0.39	−1.38	6.53	3.39
Post COVID increment (%)	−4.41	−15.28	−14.42	20.57	−11.20	−70.01	99.80	17.06
Increment Rank (R4)	3	6	5	7	4	8	1	2

Source: Calculations based on the values given in Appendix 4

Table 5: Pre and post COVID-19 liquidity (current ratio) of Indian oil and gas companies (Rs. in crore)

Statistical measures	Liquidity of Indian oil and gas companies							
	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
Mean 1 (2015-19)	0.82	1.18	0.88	1.05	0.89	0.74	0.51	1.25
R1	6	2	5	3	4	7	8	1
Mean 2 (2020-22)	0.73	0.84	0.80	0.98	0.69	0.55	0.66	1.30
R2	5	3	4	2	6	8	7	1
Av. Rank of R_1 and R_2 (R3)	5.5	2.5	4.5	2.5	5	7.5	7.5	1
± (based on pre COVID-19)	−0.09	−0.34	−0.09	−0.08	−0.20	−0.19	0.15	0.05
Post COVID increment (%)	−10.85	−29.02	−9.75	−7.30	−22.89	−25.59	29.36	4.22
Increment Rank (R4)	5	8	4	3	6	7	1	2

Source: Calculations based on the values given in the Appendix 5

Table 6: Pre and post COVID-19 long term paying ability (Debt-Equity ratio) of Indian oil and gas companies (Rs. in crore)

Statistical measures	Debt equity ratio of Indian oil and gas companies							
	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
Mean 1 (2015-19)	0.82	1.18	0.88	1.05	0.89	0.74	0.51	1.25
R1	6	2	5	3	4	7	8	1
Mean 2 (2020-22)	0.73	0.84	0.80	0.98	0.69	0.55	0.66	1.30
R2	5	3	4	2	6	8	7	1
Av. Rank of R_1 and R_2 (R3)	5.5	2.5	4.5	2.5	5	7.5	7.5	1
± (based on pre COVID-19)	−0.09	−0.34	−0.09	−0.08	−0.20	−0.19	0.15	0.05
Post COVID increment (%)	−10.85	−29.02	−9.75	−7.30	−22.89	−25.59	29.36	4.22
Increment Rank (R4)	5	8	4	3	6	7	1	2

Source: Calculations based on the values given in the Appendix 6

From Table 5, it is clear that there is an absolute decrement in the liquidity ratio of the Indian oil and gas companies in the post-COVID-19 period except for GG, and IG oil and gas companies of India. The absolute change in the profitability between the pre and post-COVID-19 period is insignificantly different ($r_{s,\ R1\ and\ R2} = 0.88$), mutually. There is a significant decrement in the liquidity of the bigger Indian oil and gas companies than the smaller companies, comparatively ($r_{s,\ R3\ and\ R4} = 0.1$).

4.6. Long Term Paying Ability (Debt-Equity Ratio) of Indian Oil and Gas Companies

Pre and post-COVID-19 analysis of long-term paying ability reveal the relational and mutual growth of solvency based on the pre-COVID-19 performance of the firms. The relational growth of long-term paying ability explains the comparative growth of owners' equity in the business organization. The increasing trend of the long-term paying ability reveals the enhancement of owners' equity or the decrement of the long-term or external funds to pay out the long-term liabilities. The optimum or normal long-term paying ability ratio should be preferred to maintain the balance between long-term paying ability or the benefits of the leverage of the capital structure.

From Table 6, it is clear that there is an absolute increment in the long-term paying ability ratio of the Indian oil and gas companies in the post-COVID-19 period except for GG, and IG oil and gas companies of India. The absolute change in the long-term paying ability between the pre and post-COVID-19 period is moderately different ($r_{s,\ R1\ and\ R2} = 0.57$), mutually. There is a significant increment in the solvency (long-term paying ability) of the bigger Indian oil and gas companies than the smaller companies ($r_{s,\ R3\ and\ R4} = 0.32$) post-COVID-19 pandemic period, comparatively.

5. CONCLUSIONS AND IMPLICATIONS

Based on the analysis and interpretations it is that there is absolute growth in the total revenues, total expenses, and profits post-COVID-19 pandemic period. The mutual absolute total revenues, total expenses, and profits relational performances of the Indian oil and gas companies were the same in the pre and post-COVID-19 pandemic period. There was post-COVID-19 relational positive growth of total revenue, total expenses, and profits seen in the Indian oil and gas companies. This implied enhancements of operational activities, level of production, cost, and managerial efficiency of the Indian oil and gas firms. Post-pandemic period, total revenue, total expenses, and profits performances of the smaller scale production Indian oil companies are better than the larger scale production Indian oil and gas companies. The smaller Indian oil and gas companies enhanced their level of production ad cost and managerial efficiency post-COVID-19 pandemic. The profit earning capacity of the Indian oil and gas companies decreased in the larger scale production oil and gas companies. The mutual profit-earning capacity of the Indian oil and gas companies was the symmetrical in pre and post-COVID-19 period. Relatively, post-COVID-19 profitability of the smaller Indian and gas companies increased more than the larger scale production companies. Analysis of total revenue, total expenses, profits, and profitability reveals the improvements in the smaller Indian oil and gas companies post-COVID-19 period. There is a decrement in the liquidity of the Indian oil and gas companies post-pandemic period. However, there were no significant changes in the mutual relational liquidity of the Indian oil and gas companies pre and post-pandemic. The liquidity position of the smaller Indian oil and gas companies is better than larger Indian oil and gas companies after the pandemic period. Overall, the solvency

of the Indian oil and gas companies enhances after the pandemic period in India. Post-COVID-19, the mutual relational solvency of the Indian oil and gas companies is moderately different. There are enhancements in the solvency of larger-scale production companies after the pandemic in India. The smaller production Indian oil and gas companies enjoy the external funds in the capital composition to facilitate the leverage to profits and profitability after the COVID-19 pandemic.

To enhance the profitability of larger-scale production oil and gas companies need to improve their cost and managerial efficiency. Larger-scale production oil and gas companies needed to control their total expenses to widen the margin to compete with the smaller oil and gas companies. Also, the larger oil and gas companies may enhance the external funds in their capital composition to enjoy the benefits higher rate of return than the cost of contractual or external capital. If the demand for oil and gas is not a constraint, the larger-scale Indian oil and gas companies are advised to enhance their level of production to get the advantages of a higher level of production.

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APPENDIX

Appendix 1: Total revenues of Indian oil and gas companies companies (Rs. in crore)

Years	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
2015	441,670.18	88,237.53	240,286.86	57,602.84	207794.59	41902.67	9113.4	3715.53
2016	349,498.59	84,552.08	191,315.49	52,771.85	180709.24	25882.17	6150.53	3715.68
2017	364,142.77	85,345.95	204,811.25	49,325.12	188538.62	27731.58	5118.93	3880
2018	427,453.32	92,813.24	239,332.51	54,648.58	221182.06	32566.06	6210.01	4635.52
2019	530,829.77	117,128.43	300,258.65	76,671.11	276889.68	41397.12	7865.69	5910.99
2020	489,215.08	102,270.87	287,464.26	73,287.80	270604.58	37195.56	10384	6641.65
2021	382,608.33	75,229.69	236,889.57	58,734.61	235785.54	22551.64	9928.28	5091.03
2022	602,488.01	116,860.98	364,689.19	93,673.34	352652.61	43399.04	16546.96	7925

Source: Based on financial statements of Concerned companies available on the website of moneycontrol.com

Appendix 2: Total expenses of Indian oil and gas companies (Rs. in crore)

Years	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
2015	435,335.42	61,298.38	232,871.35	53,381.34	203644.94	42640.59	8470.98	3066.49
2016	334,036.30	57,726.65	180,664.31	49,599.05	174965.63	25123.54	5872.66	3080.79
2017	337,821.53	60,130.43	193,768.46	43,615.57	179517.78	26366.54	4815.6	3019.31
2018	394,889.04	63,920.77	228,046.54	47,717.90	211980.13	31107.81	5747.17	3603.03
2019	505,702.85	77,174.41	289,819.03	67,259.96	267551.02	41695.14	7253.97	4710.98
2020	481,604.55	77,003.13	283,712.39	65,446.07	268029.06	40211.59	9176.22	5226
2021	352,892.68	60,201.93	220,720.90	52,348.80	221538.75	21275.1	8223.58	3759.54
2022	570,754.94	75,794.46	352,698.69	80,083.05	344448.91	41567.4	14821.65	6159.12

Source: Based on financial statements of Concerned companies available on the website of moneycontrol.com

Appendix 3: Profit before tax of Indian oil and gas companies (Rs. in crore)

Years	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
2015	441,670.18	88,237.53	240,286.86	57,602.84	207794.59	41902.67	9113.4	3715.53
2016	349,498.59	84,552.08	191,315.49	52,771.85	180709.24	25882.17	6150.53	3715.68
2017	364,142.77	85,345.95	204,811.25	49,325.12	188538.62	27731.58	5118.93	3880
2018	427,453.32	92,813.24	239,332.51	54,648.58	221182.06	32566.06	6210.01	4635.52
2019	530,829.77	117,128.43	300,258.65	76,671.11	276889.68	41397.12	7865.69	5910.99
2020	489,215.08	102,270.87	287,464.26	73,287.80	270604.58	37195.56	10384	6641.65
2021	382,608.33	75,229.69	236,889.57	58,734.61	235785.54	22551.64	9928.28	5091.03
2022	602,488.01	116,860.98	364,689.19	93,673.34	352652.61	43399.04	16546.96	7925

Source: Based on financial statements of Concerned companies available on the website of moneycontrol.com

Appendix 4: Profitability (PBT ratio) of Indian oil and gas companies

Years	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
2015	1.43	30.53	3.09	7.33	2.00	−1.76	7.05	17.47
2016	4.42	31.73	5.57	6.01	3.18	2.93	4.52	17.09
2017	7.23	29.55	5.39	11.58	4.78	4.92	5.93	22.18
2018	7.62	31.13	4.72	12.68	4.16	4.48	7.45	22.27
2019	4.73	34.11	3.48	12.27	3.37	−0.72	7.78	20.30
2020	1.56	24.71	1.31	10.70	0.95	−8.11	11.63	21.31
2021	7.77	19.98	6.83	10.87	6.04	5.66	17.17	26.15
2022	5.27	35.14	3.29	14.51	2.33	4.22	10.43	22.28

Source: Based on financial statements of Concerned companies available on the website of moneycontrol.com

Appendix 5: Liquidity (current ratio) of Indian oil and gas companies

Years	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
2015	0.99	1.57	0.93	1.06	1.16	0.72	0.74	0.87
2016	0.88	1.72	0.89	0.99	1.03	0.74	0.36	1.02
2017	0.72	1.55	0.79	1.09	0.72	0.82	0.37	1.39
2018	0.67	0.44	0.83	1.02	0.78	0.74	0.47	1.52
2019	0.81	0.61	0.99	1.10	0.76	0.68	0.62	1.46
2020	0.69	0.67	0.70	0.97	0.65	0.34	0.79	1.39
2021	0.73	0.86	0.93	0.86	0.70	0.54	0.64	1.32
2022	0.76	0.98	0.76	1.10	0.70	0.77	0.55	1.21

Source: Based on financial statements of Concerned companies available on the website of moneycontrol.com

Appendix 6: Solvency (Debt-Equity ratio) of Indian oil and gas companies

Years	IOCL	ONGC	BP	GAI	HP	CP	GG	IG
2015	0.48	0	0.52	0.27	0.93	0.60	0.75	0.07
2016	0.28	0	0.50	0.19	0.58	0.23	0.81	0
2017	0.20	0	0.46	0.08	0.31	0.06	1.39	0
2018	0.17	0	0.43	0.02	0.37	0.07	1.20	0
2019	0.32	0	0.64	0.02	0.40	0.23	0.96	0
2020	0.53	0.01	0.62	0.08	0.77	1.35	0.56	0
2021	0.50	0.03	0.31	0.10	0.75	2.12	0.17	0
2022	0.44	0.03	0.31	0.09	0.81	0.86	0.07	0

Source: Based on financial statements of Concerned companies available on the website of moneycontrol.com