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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

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**UNPUBLISHED DISSERTATIONS AND THESES**

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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**FINANCIAL ANALYSIS OF OIL AND PETROLEUM INDUSTRY**

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**ABSTRACT**

*The Indian oil and gas sector is one of the six core industries in India and has very significant forward linkages with the entire economy. India has been growing at a decent rate annually and is committed to accelerate the growth momentum in the years to come. This would translate into India's energy needs growing many times in the years to come. Hence, there is an emphasized need for wider and more intensive exploration for new finds, more efficient and effective recovery, a more rational and optimally balanced global price regime - as against the rather wide upward fluctuations of recent times, and a spirit of equitable common benefit in global energy cooperation. The purpose of this study is to comparative study of financial performance, of India's five leading oil and petroleum companies i.e. Oil and Natural Gas Corporation, Reliance Petroleum Limited, Oil India Limited, Hindustan Petroleum Corporation and Cairn India Limited have been selected for the study. The most common tool of financial analysis various ratios as used. It is concluded that the overall performance of Oil and Natural Gas Corporation found highly satisfactory in net profit growth on the profitability level, short term liquidity position, efficiency level, solvency capacity and investment analysis.*

**KEYWORDS**

Performance Analysis, Technical Efficiency, Investment Analysis, Financial Analysis, Inter and Intra Industry Analysis, Business Effectiveness.

**INTRODUCTION**

India is the sixth largest consumer of oil. There is a huge demand-supply gap in oil and gas in India. The country imports more than 70% of its crude oil requirement. In 2005, oil and gas accounted for 38% of primary energy consumption in India, followed by coal at 55%. Oil and gas industry is broadly classified into Upstream and Downstream segments and comprises 18 refineries, with total refining capacity of 132.47 mmtpa as of April 1, 2006. According to Ministry of Petroleum and Natural Gas, India's crude oil reserves have increased from 726mmt in FY02 to an estimated 786mmt in FY06, whereas natural gas reserves have increased from 763 billion cubic metres (bcm) to 1,101bcm between FY02 and FY06. Crude oil production was estimated at 32.19mmt and natural gas at 32.20bcm in FY06. Consumption of crude oil was estimated at 130.11mmt, whereas consumption for natural gas was estimated to be 31.02bcm in the same year. The production and consumption of petroleum products was estimated at 119.75mmt and 111.92mmt respectively. Recently, India has emerged as net exporter of petroleum products.

The Indian oil and gas sector is of strategic importance and plays a predominantly pivotal role in influencing decisions in all other spheres of the economy. The annual growth has been commendable and will accelerate in future consequently encouraging all round growth and development. This has necessitated the need for a wider intensified search for new fields, evolving better methods of extraction, refining and distribution, the constitution of a national price mechanism - keeping in mind the alarming price fluctuation in the recent past and evolving a spirit of equitable global cooperation.

**GROWTH**

In the 50 years since Independence India has witnessed a significant growth in the refining facilities and increase in the number of refineries from one to seventeen now. There has been an increase in the refining capacity from 0.25 tonnes MMTpa to about 103 MMTpa.

The first decade of Independence (1947-57) saw the establishment of three coastal refineries by multinational oil companies operating in India at that time, viz. Burmah Shell, Esso Stanvac and Caltex; the first two at Mumbai and the third at Visakhapatnam.

The second decade (1957-67) witnessed the setting up of Indian Refineries Ltd. in 1958, a wholly-owned public sector Government company. Under its banner three refineries were set up at Guwahati (Assam), Barauni (Bihar) and Koyali (Gujarat) essentially to process the indigenous crude discovered in Assam and Gujarat. In addition, one joint sector refinery was set up with the participation of an American company at Cochin, based on imported crude.

The next ten year period (1967-77) witnessed the establishment of two refineries, one with equity participation from American and Iranian companies at Chennai and another in the public sector at Haldia by Indian Oil.

The period 1977-87 saw the commissioning of two more refineries in the public sector. The refinery at Bongaigaon was the first experiment in having an integrated petroleum refinery-cum-petrochemicals unit. The notable feature of the capacity additions during this decade have been the extensive utilisation of the process design capabilities of M/s Engineers India Ltd. and installation of Secondary Processing Facilities to increase the production of much required kerosene, diesel and LPG.

During the fifth decade (1987-97), a small refinery of 0.5 MMTpa at Nagapattinam was built in Tamil Nadu. It is based on crude from adjoining fields. In 1996, a 3 MMTpa refinery was built in the joint sector at Mangalore between HPCL and Indian Rayon. This decade also witnessed major policy initiatives in the refining sector. In 1987, the Government decided to set up refineries in the joint sector in which the equity participation of public sector undertaking was envisaged to be 26%. Another 26% equity was meant for the private sector partner and the balance 48% was to be raised from the public.

The Government has also announced that investments in the refining sector will be encouraged by providing reasonable tariff protection and making marketing rights for transportation fuels viz. MS, HSD & ATF conditional on owning and operating refineries with an investment of at least Rs.2,000 crore or oil exploration and production companies producing at least 3 million tonnes of crude oil annually. As per the current outlook, India's refining capacity is estimated to reach a level of 129 MMTpa by the end of the IX Plan (2001-02).

**REVIEW OF LITERATURE**

Brian Carver, Christy He, Jonah Hister (2004), has made an attempt study of historical aspect of Oil and Petroleum industry. They analyzed that Oil and Petroleums have historically formed an important component of India's exports. There is archaeological evidence from Mohenjo-Daro, which establishes that the complex technology of mordant dyeing was being used in the subcontinent from at least the second millennium B.C. It is believed that the use of printing blocks in India started in 3000 B.C., and some historians have concluded that India may have given birth to Oil and Petroleum printing. Marco Polo's records show that Indian Oil and Petroleums used to be exported to China and South East Asia from Andhra and Tamil ports in the "largest ships" then known. Buddhist era scripts reveal that woollen carpets were known in India as early as 500 B.C. and the technical skill that went into Indian carpets of the Mughal period is still hailed today.

Maurice Landes, Stephen MacDonald, Santosh K. Singh, and Thomas Vollrat (2005) emphasized that growth of Oil and Petroleum industry in India is depend upon execution of reforms to policies, including taxes that discriminate against the use of manmade fibers and regulations affecting the scale, technology use, and export competitiveness of the Oil and Petroleum and apparel industries. Imports of raw cotton have increased in concert with rising demand in recent years, but future growth will depend on the extent to which India can boost chronically low cotton yields and improve cotton quality.

Bhandari & Maiti (2007), in his study on Efficiency of Indian Manufacturing Oil and Petroleum industry, has analyzed the Technical Efficiency (TE) varies between 68% to 84% across these years and that individual TEs vary with firm-specific characteristics such as size and age. Further public sector firms are found to be relatively less efficient.

## COMPANY PROFILE

**1. Oil and Natural Gas Corporation** - With a market cap of Rs. 235,000 crores ONGC ranks 3rd in Oil & Gas Exploration & Production (E&P) Industry globally. It cumulatively produced 803 Million Metric Tonnes of crude and 485 Billion Cubic Meters of Natural Gas from 111 fields. ONGC's wholly-owned subsidiary ONGC Videsh Ltd. (OVL) is the biggest Indian multinational, with 40 Oil & Gas projects in 15 countries. The company earned a revenue of approx Rs. 20,000 crores with net profit margin of 34% in Dec'10. It holds largest share of hydrocarbon acreages in India & contributes over 79 per cent of Indian's oil and gas production. It created a record of sorts by turning **Mangalore Refinery and Petrochemicals Limited (MRPL)** around from being a stretcher case at BIFR to the BSE Top 30, within a year.

**2. Reliance Petroleum Industries** - The Flagship Company of the Ambanis and India's largest Private Company Reliance Industries is also an Oil and Gas Giant. The Company has seen very sharp growth in the last decade and is diversifying into Retail. With a market cap exceeding \$30 billion it is India's most valued company. The company is also one of the biggest exporters in India with one of the largest petrochemical and oil refining complexes in the world at Jam Nager. It recently sold a stake in its valuable Godavari Basin to BP for a whopping \$7.5 billion. Extremely cash rich with a horde of more than \$15 billion, it has started on empire building through ventures in Finance (DE Shaw), Communications (buying of wireless broadband spectrum), Shale Gas Buys in the USA, Hospitality (Buying up stakes in Hotel Companies).

**3. Oil India Ltd.** - With a market capitalisation of Rs. 31,000 crores, OIL is engaged in the business of exploration, development and production of crude oil and natural gas, transportation of crude oil and production of LPG. It became a wholly-owned Government of India enterprise in 1981. The revenue earned by the company was 2,400 crores & with a net profit margin of 36% in Dec '10. Very similar in profile to ONGC it presently produces over 3.2 million tons pa of crude oil, Natural Gas and over 50,000 Tones of LPG annually. Most of this emanates from its traditionally rich oil and gas fields concentrated in the Northeastern part of India and contribute to over 65% of total oil & gas produced in the region. It has emerged as a consistently profitable international company with exploration blocks as far as Libya and sub-Saharan Africa.

**4. Hindustan Petroleum Corp. Ltd (HPCL)** - One of the smallest of the major Oil and Gas PSUs with a market capitalisation of Rs. 11,000 crores. The company owns and operates the largest Lube Refinery in the country producing Lube Base Oils of international standards, with a capacity of 335 TMT. This Lube Refinery accounts for over 40% of the India's total Lube Base Oil production. It has two major refineries producing a wide variety of petroleum fuels & specialties, one in Mumbai (West Coast) and the other in Vishakhapatnam, (East Coast). HPCL's vast marketing network consists of its zonal & regional offices facilitated by a supply & distribution infrastructure comprising terminals, pipeline networks, aviation service stations, LPG bottling plants, inland relay depots & retail outlets, lube and LPG distributorships. HPCL accounts for about 20% of the market share and about 10% of the nation's refining capacity. The revenue earned was around Rs. 34,000 crores with a net profit margin of 0.6% in Dec'10.

HPCL is a Government of India Enterprise with a Navratna Status, and a Fortune 500 and Forbes 2000 company, with an annual turnover of Rs. 1,32,670 Crores and sales/income from operations of Rs 1,43,396 Crores (US\$ 31,546 Millions) during FY 2010-11, having about 20% Marketing share in India among PSUs and a strong market infrastructure. HPCL's Crude Thruput and Market Sales (including exports) are 14.75 Million Metric Tonnes (MMT) and 27.03 MMT respectively in the same period.

HPCL operates 2 major refineries producing a wide variety of petroleum fuels & specialties, one in Mumbai (West Coast) of 6.5 Million Metric Tonnes Per Annum (MMTPA) capacity and the other in Vishakhapatnam, (East Coast) with a capacity of 8.3 MMTPA. HPCL holds an equity stake of 16.95% in Mangalore Refinery & Petrochemicals Limited, a state-of-the-art refinery at Mangalore with a capacity of 9 MMTPA. In addition, HPCL is constructing a 9 MMTPA refinery at Bathinda, in the state of Punjab, as a Joint venture with Mittal Energy Investment Pvt. Limited. HPCL also owns and operates the largest Lube Refinery in the India producing Lube Base Oils of international standards, with a capacity of 335 TMT. This Lube Refinery accounts for over 40% of the India's total Lube Base Oil production.

**5. Cairn India Limited** - With a market cap Rs. 66,000 crores, Cairn India is now one of the biggest private exploration and production companies currently operating in the region. A subsidiary of the British company Cairn, its growth has been nothing short of phenomenal after winning a bid to explore oil blocs in Rajasthan in the NELP. Cairn India's strategy is to establish commercial reserves from strategic positions in order to create and deliver shareholder value. The company operates the largest producing oil field in the Indian private sector and has pioneered the use of cutting-edge technology to extend production life. The company has set up a Processing terminal in Barmer (Rajasthan) to process the crude from fields. A pipeline has also been constructed to transport the crude from Barmer to Bhogat in the Gujarat coast. The pipeline section from Barmer to Salaya is operational and sales have commenced to Essar, RIL and IOC. Cairn India has recently agreed to be taken over by London listed India's largest Mining Group Vedanta though the approval is still awaited from the government of India. It is the second largest Oil and Gas private company listed on the Indian stock exchange.

## UNIQUENESS OF PETROLEUM INDUSTRY

The petroleum industry is such an industry which has the largest earning capacity. The various petroleum products are diversified in a very wide range. The main functional areas of this industry are extraction of crude, refining of crude, processing and transporting. The main problem faced by the entire petroleum industry is the pollution problem. The refining of crude oil creates huge pollution by producing various harmful gases. Another problem is of drilling mud. When the drilling work is done a huge amount of crude, water, soil mixture gets wasted. Here innovative and upgraded technology is required to minimize the wastage of petroleum. The leakage and drainage problems are also one of the major barriers in case of refinery work. Good piping technology and proper drainage system is also very essential in this industry. One thing we must appreciate that India has very limited production of petroleum in comparison with demand scenario. In this condition the wastage is a critical issue which must be addressed properly.

## PERFORMANCE OF INDIAN OIL INDUSTRY

The petroleum industry in India stands out as an example of the strides made by the country in its march towards economic self-reliance. At the time of Independence in 1947, the industry was controlled by international companies. Indigenous expertise was scarce, if not non-existent. Today, a little over 50 years later, the industry is largely in the public domain with skills and technical know-how comparable to the highest international standards. The testimony of its vigour and success during the past five decades is the significant increase in crude oil production from 0.25 to 33 million tonnes per annum and refining capacity from 0.3 to 103 million metric tonnes per annum (MMTPA). The consumption of petroleum products has grown 30 times in the last 50 years from 3 million tonnes during 1948-49 to about 91 million tonnes in 1998-99. A vast network of over 29,000 dealerships and distributorships has been developed backed by over 400 storage points over the years to serve the people even in the remote and once-inaccessible areas.

## OBJECTIVES OF THE STUDY

- To analyze the profitability, solvency position and liquidity position of companies.
- To identify the net profit and EPS growth rate performance of companies.

## METHODOLOGY

The researcher, being an external analyst, had to depend mainly upon secondary data for the purpose of studying the financing performance of Oil and Petroleum Industries in India from the top three companies in India which is highly performed in overall growth in terms of finance, exports and total assets value. The exploratory research techniques have been used for this study and also the study is restricted only to Indian based oil and petroleum organizations.



**SOURCES OF DATA****DATA COLLECTION**

The present study is mainly based on secondary data which were collected from the corporate annual audited reports, company database, published research reports by various industries, related websites and research organization.

**SELECTION OF COMPANY AND PERIOD**

The present study is mainly intended to examine the comparative financial performance of oil and petroleum companies i.e. Oil and Natural Gas Corporation, Reliance Petroleum Limited, Oil India Limited, Hindustan Petroleum Corporation and **Cairn India Limited** for five years in the period between 2006 – 2010.

**TOOLS USED FOR ANALYSIS**

The present study has analyzed the financial performance of three Oil and Petroleum companies. In order to evaluate and compare the financial performance of selected industries Ratio Analysis technique and average mean has been used.

**RESULT & DISCUSSIONS****[A] COMPANY ANALYSIS- INTER ANALYSIS****I PROFITABILITY RATIO:****(A) NET PROFIT RATIO****TABLE 1: NET PROFIT RATIO**

	2006	2007	2008	2009	2010
ONGC	14.52	15.96	16.52	17.85	18.45
RIL	15.99	13.09	13.87	13.51	17.29
HPL	19.53	16.55	14.34	12.88	15.63
IOL	19.97	18.41	17.37	16.28	17.5
CAIRIN	16.61	15.25	15.65	16.48	16.64

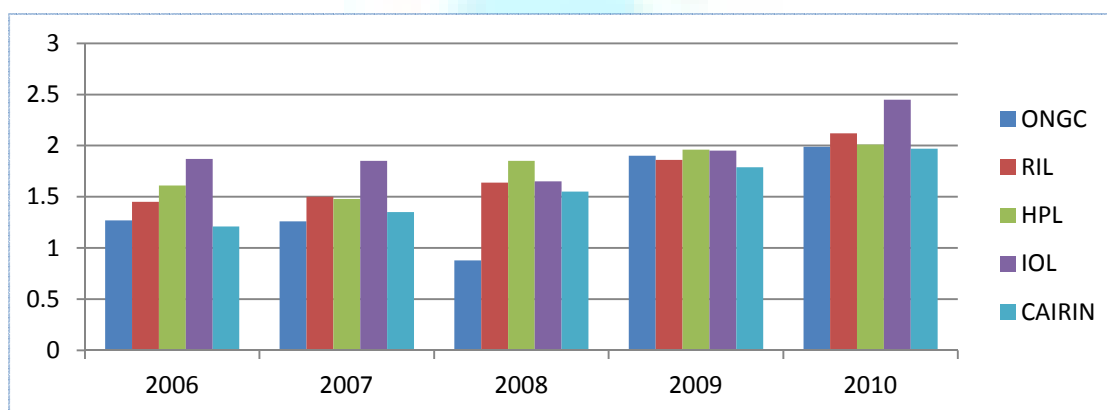
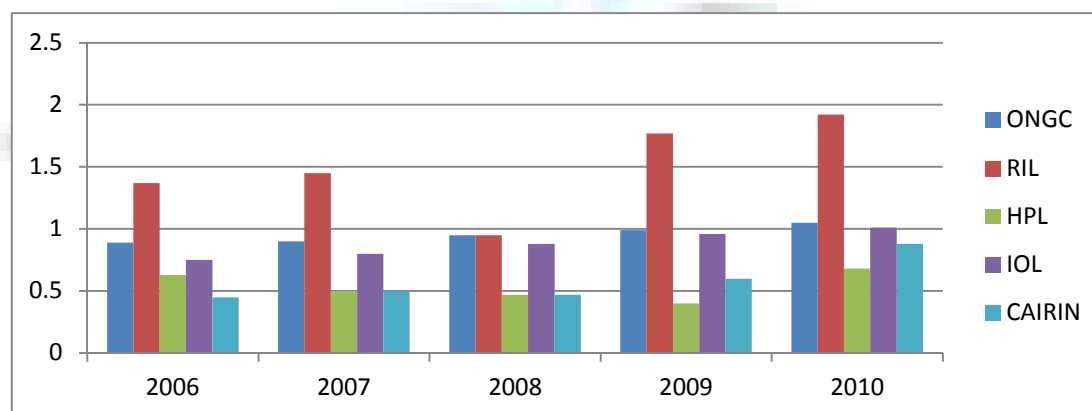


Table 1 shows the Net Profit ratio of selected units. It shows that the percentage of net profit is declining in each year other than ONGC. The year 2010 was financial good for all the companies.

**(II) TESTING OF FINANCIAL POSITION:****(A) CURRENT RATIO****TABLE 2: CURRENT RATIO**

	2006	2007	2008	2009	2010
ONGC	0.89	0.9	0.95	0.99	1.05
RIL	1.37	1.45	0.95	1.77	1.92
HPL	0.63	0.5	0.47	0.4	0.68
IOL	0.75	0.8	0.88	0.96	1.01
CAIRIN	0.45	0.5	0.47	0.6	0.88



Current ratio is the study of Current Assets and Current Liability. Current ratio of the company is less than 1 which shows company's current assets are insufficient to pay off the current liabilities.

Current ratio is the study of Current Assets and Current Liability. Table 1 shows that RPL and ONGC has adequate current assets, it is more than the average but HPL is carrying the least ratio.

**(B) ACID TEST RATIO****TABLE 3: QUICK RATIO**

	2006	2007	2008	2009	2010
ONGC	1.27	1.26	0.88	1.9	1.99
RIL	1.45	1.5	1.64	1.86	2.12
HPL	1.61	1.48	1.85	1.96	2.01
IOL	1.87	1.85	1.65	1.95	2.45
CAIRIN	1.21	1.35	1.55	1.79	1.97

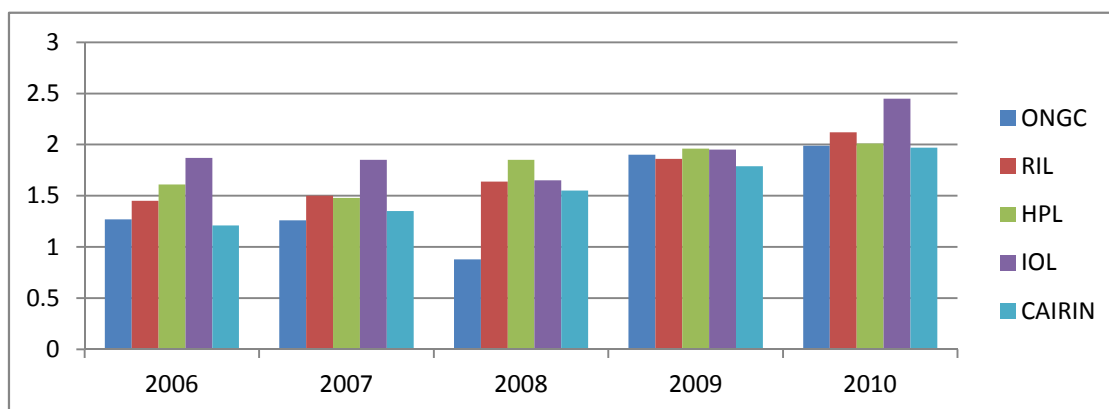
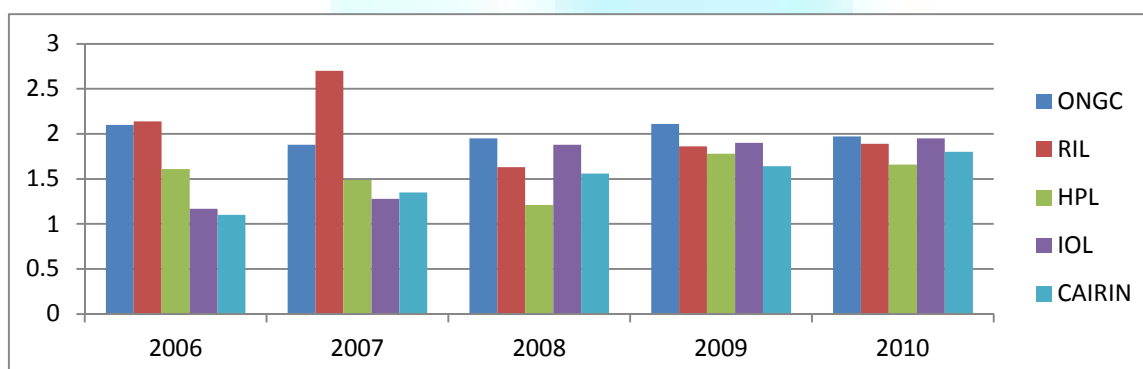


Table 2 shows that all the companies has sufficient quick ratio, means very short time liquidity position is good enough. It means the fund of liquidity assets of RPL, HPL and IOL is much more than the other two companies.

**(C) DEBT-EQUITY RATIO****TABLE 4: DEBT -EQUITY RATIO**

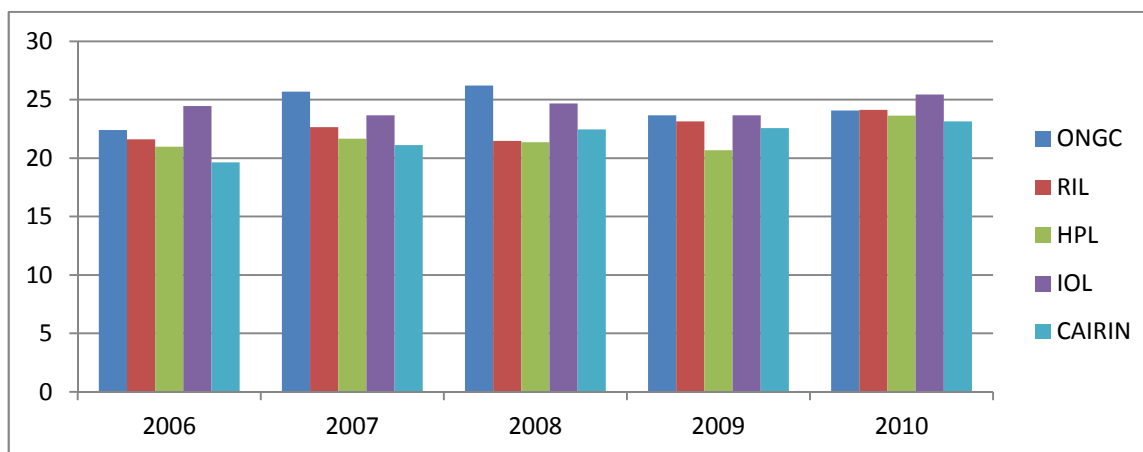
	2006	2007	2008	2009	2010
ONGC	2.1	1.88	1.95	2.11	1.97
RIL	2.14	2.7	1.63	1.86	1.89
HPL	1.61	1.49	1.21	1.78	1.66
IOL	1.17	1.28	1.88	1.9	1.95
CAIRIN	1.1	1.35	1.56	1.64	1.8



Debt-equity indicates what proportion of equity and debt the company is using to finance its assets. Debts equity ratio is relationship between debts and equity. Table 7 shows that the debt equity ratio of ONGC is too high. It means the company arrange fund from debt securities. In case of debt equity ratio of CAIRIN is at minimum point.

**(D) EARNING PER SHARE (EPS) RATIO:****TABLE 5: EARNINGS PER SHARE**

	2006	2007	2008	2009	2010
ONGC	22.4	25.69	26.21	23.67	24.06
RIL	21.6	22.64	21.46	23.14	24.12
HPL	20.97	21.65	21.37	20.67	23.64
IOL	24.45	23.65	24.68	23.65	25.44
CAIRIN	19.64	21.12	22.45	22.55	23.14

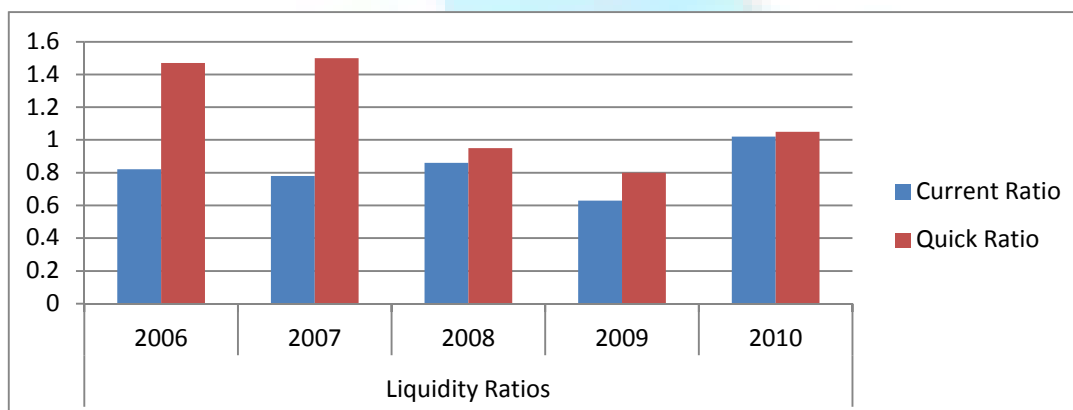


EPS measures the overall profit generated for each share in existence over a particular period. Table 5 shows that the EPS ratio in the year 2006 of IOL was highest, year 2007 to 2009, ONGC was standing at No. 1 position in term of earning per share. However IOL maintain its old position which it was carrying 4 year back and jumped at No. 1 for the year 2010. When we compare the average EPS, ONGC and IOL is in better position.

#### INDUSTRY ANALYSIS- INTRA ANALYSIS

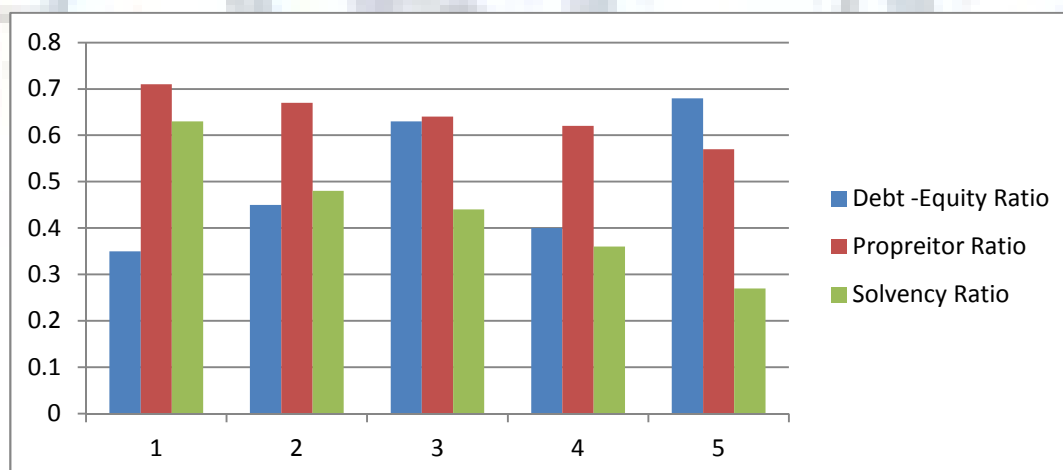
	Liquidity Ratios				
	2006	2007	2008	2009	2010
Current Ratio	0.82	0.78	0.86	0.63	1.02
Quick Ratio	1.47	1.5	0.95	0.8	1.05

Current ratio of the company is less than 1 which shows company's current assets are insufficient to pay off the current liabilities. A quick ratio of 1:1 is usually considered satisfactory. Here the quick ratio is increasing which shows company's liquidity position is becoming good.



#### SOLVENCY RATIO

	Solvency Ratios				
	2006	2007	2008	2009	2010
Debt -Equity Ratio	0.35	0.45	0.63	0.4	0.68
Proprietor Ratio	0.71	0.67	0.64	0.62	0.57
Solvency Ratio	0.63	0.48	0.44	0.36	0.27



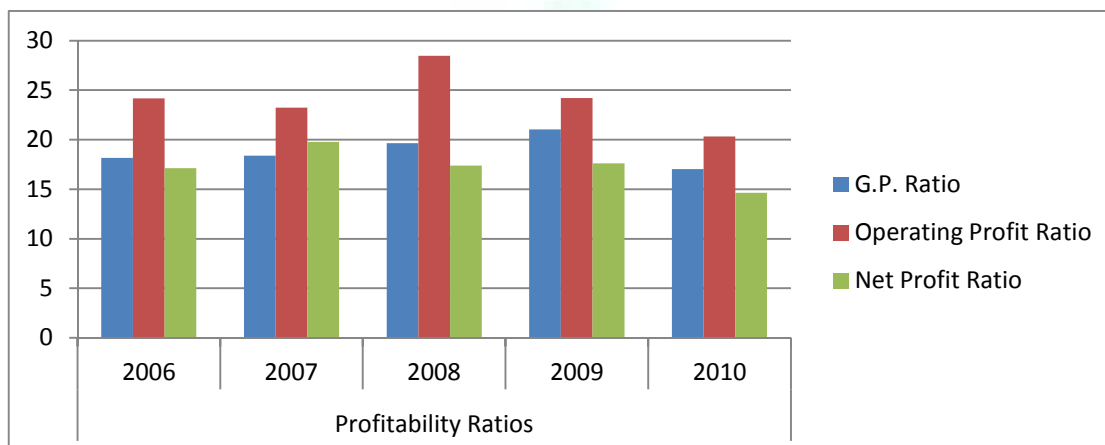
The overall solvency ratio is favorable from the point of view of shareholders as it is debt is lower in comparison of own investment. It is not taking too much risk. Industry's trend is changing 2006 onwards. It has started to take leverage advantage. As debt-equity ratio is increasing other than 2009. So it is much focus and care on safe and liquid priority of its shareholders.

#### PROFITABILITY RATIO

PROFITABILITY RATIOS

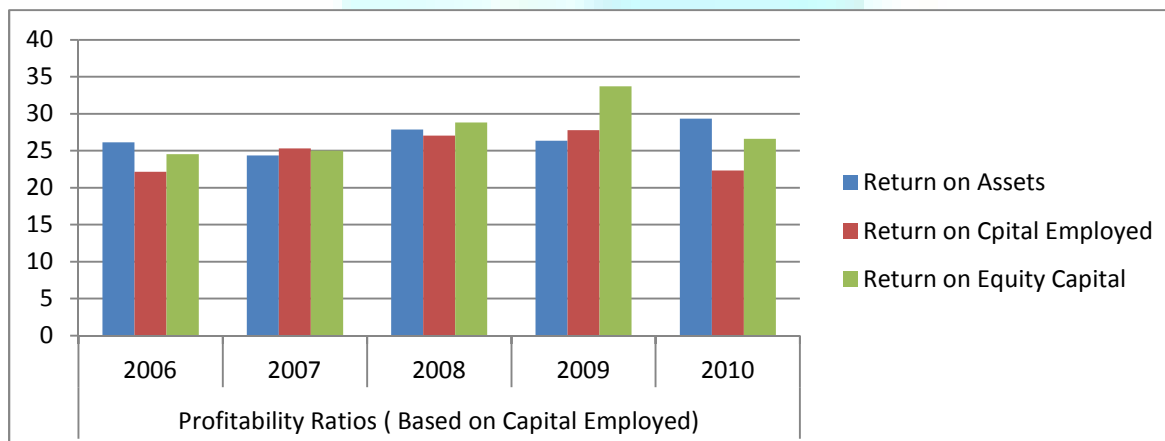
	2006	2007	2008	2009	2010
G.P. Ratio	18.17	18.39	19.64	21.04	17.02
Operating Profit Ratio	24.18	23.23	28.45	24.19	20.34
Net Profit Ratio	17.12	19.78	17.37	17.61	14.65

The gross profit ratio is increasing in 2010 which indicates that cost of production is coming down and sales are increasing. The net profit indicates that the overall profit in the industry is increasing which indicates sound financial position in telecom industry. Operational efficiency in the industry is decreasing after 2008.



PROFITABILITY RATIOS ( BASED ON CAPITAL EMPLOYED)

	2006	2007	2008	2009	2010
Return on Assets	26.12	24.35	27.85	26.33	29.35
Return on Capital Employed	22.15	25.32	27.03	27.77	22.32
Return on Equity Capital	24.51	24.99	28.8	33.72	26.61



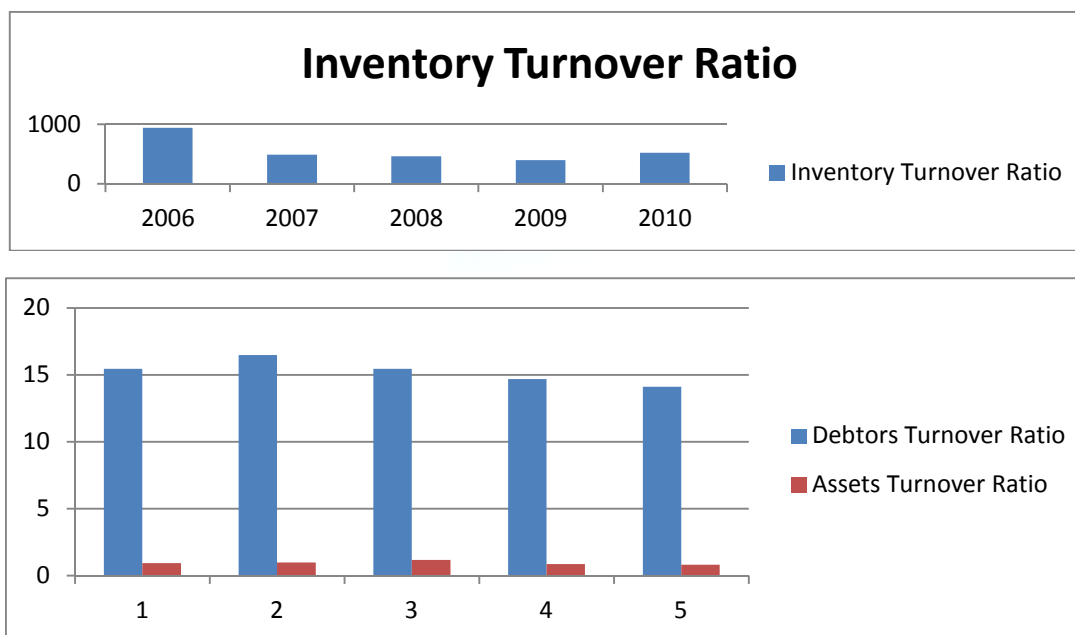
The gross profit ratio is increasing in 2010 which indicates that cost of production is coming down and sales is increasing. The net profit indicates that the overall profit in the industry is increasing which indicates sound financial position in telecom industry.

#### EFFICIENCY RATIO

EFFICIENCY RATIO

	2006	2007	2008	2009	2010
Inventory Turnover Ratio	936.45	489.35	460.52	399.45	521.32
Debtors Turnover Ratio	15.45	16.47	15.45	14.68	14.1
Assets Turnover Ratio	0.92	0.98	1.16	0.86	0.8

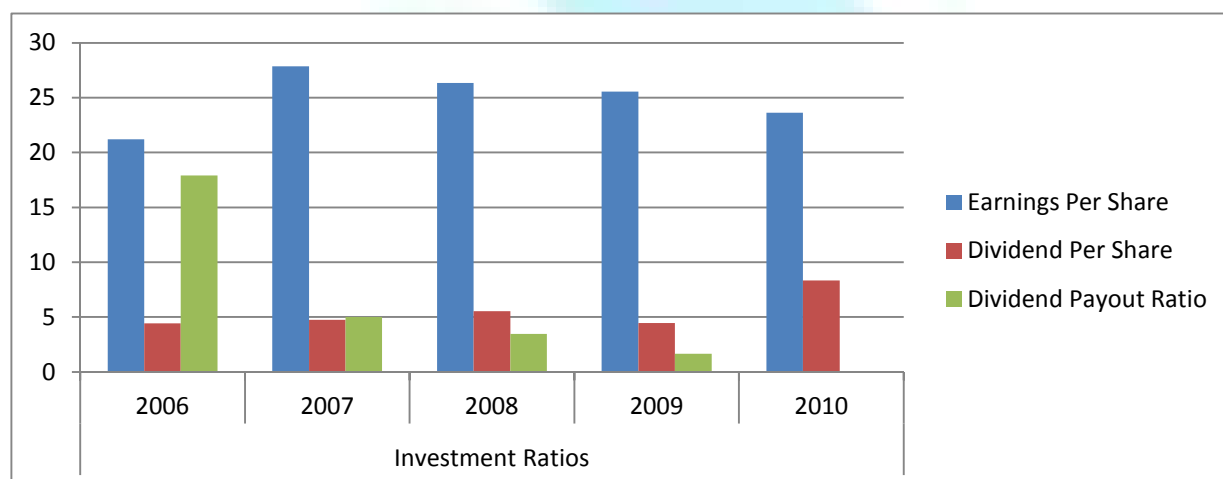
The higher the value of debtor's turnover the more liquid the debtors are. In the year 2010 debtors are more liquid In 2010 the stock turnover ratio is very high which shows the industry has less investment in inventories. Total assets turnover ratio determines the efficiency of fixed assets.



## INVESTMENT RATIOS

INVESTMENT RATIOS					
	2006	2007	2008	2009	2010
Earnings Per Share	21.2	27.85	26.34	25.55	23.64
Dividend Per Share	4.44	4.76	5.55	4.46	8.34
Dividend Payout Ratio	17.9	5.02	3.46	1.65	0

The industry has paid higher dividend in 2010. Till 2009 industry has retained its earning in the business it was done to maintain strong financial position.



## FINDINGS

The major findings from the present study are:

- Profitability – decline.
- Financial Strength – not highly satisfactory.
- Fixed Assets-Financed mainly through owners fund
- Working Capital - Not efficiently and effectively managed.

On the basis of the analysis of profitability, Activity, earning per share, fixed assets and inventory turnover, it can be concluded that the performance of selected five companies i.e., Oil and Natural Gas Corporation, Reliance Petroleum Limited, Oil India Limited, Hindustan Petroleum Corporation and Cairn India Limited EPS is high, Current Assets is above standard, Proprietary fund also found satisfactory. The position of the ONGC can be ranked on top among the selected unit and based on the analysis of data.

## CONCLUSION

Indian Oil and Petroleum Industry is an independent and self-reliant industry. It has large and potential domestic and international market. The main problems with the Petroleum Industry in India are related to infrastructural developments. The lack of proper storage facilities, enhancements in refining capacities, and fluctuating import prices plays important role in the development of the sector.

The study has analyzed the short term and profitability position of leading Oil and Petroleum companies in India, some of the important ratios were used to measure the financial performance of five selected companies. Based on the above analysis the overall performance of ONGC is one of the major and fully vertically integrated composite mills player in India. It produces around 77% of India's total crude oil production (and around 30% of total demand) and around 81% of natural gas production. ONGC is one of the largest publicly traded companies by market capitalization in India and the largest India-based company measured by. The result of financial analysis also shows that ONGC is comparatively good with the other four companies. Its financial position is found to be highly satisfactory level in net profit growth on the profitability level, short term liquidity position, efficiency level, solvency capacity and investment analysis



basis. The other two selected ONGC companies performance were not satisfactory positions. Hence these companies will have to strengthen its shareholders funds and working capital to compete and enhancing its current performances in growing Oil and Petroleum in global business environment.

This is an attempt identify and study the movement of key financial parameters and their relationship with profitability of Oil and Petroleum industry. It is an attempt to and the study whether the key identified parameters move in a synchronous way going up and coming down with basic profitability parameters. All three comparably profit-making companies have been taken as the sample for study for the period of 2006 to 2010. The data have been taken from the figures supplied by prowess database. On the basis of this data a trend parameter is calculated for the year 2011. So, on the base of the analysis, the broad conclusion is that the parameters are consistent within a wide horizon and with the growth that companies have achieved, the parameters have also responded in a synchronous manner.

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