EQUITY RESEARCH ON INDIAN DOWNSTREAM PETROLEUM INDUSTRY

A Dissertation report submitted in partial fulfillment of the requirements for MS-Oil Trading (2005-07)

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EXECUTIVE SUMMARY

The project of equity research on the domestic downstream petroleum is an attempt to apply classroom concepts into real world applications. The study adopts a two pronged approach involving the Fundamental and Technical Analysis to suggest a perspective on the future of the Indian Downstream Sector and to make recommendations as to whether the stocks should be bought, held or sold.

While, the growth of the petroleum sector in comparison to the overall growth of the economy is analyzed using the Economy, Industry, Commodity (EIC) framework, performance of select companies is assessed by analyzing their financial statements over the period 2002 to 2006. Technical tools including the price earning multiple are then used to estimate the expected earning per share and the expected price earning multiple. The product of the expected price earning multiple and the expected earning per share gives us the expected market price of the stocks.

The research concludes that the fundamental trend of the downstream sector is negative. The analysis gives the range of buy and sell recommendations. The likely resistance and support levels are also presented.

INDEX

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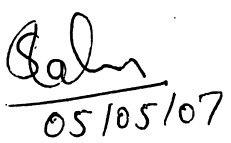

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DECLARATION BY THE GUIDE

This is to certify that the dissertation report on "Equity Research on Indian Downstream Petroleum Industry" submitted to the University of Petroleum & Energy Studies, Dehradun, by Salman Danish Khan, in partial fulfillment of the requirement for the award of the degree of MS (Oil Trading) is a bonafide work carried out by him under my supervision and guidance.

This work has not been submitted anywhere else for any other degree/ diploma. The original work was carried out during October 2006 to May 2007 at UPES, NCR Campus, Gurgaon, India.

Date 5th May 2007

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Chapter I

Introduction

The International Oil Scene

The international oil prices have displayed an upward trend since 2004. Prices, which were fairly stable till then, have been moving up consistently and touching new levels frequently. It was only after crossing a level of USD 75 per barrel on several occasions recently, that the prices started easing. While there has been a reduction from the peak levels, the prices have been stabilizing at levels of around USD 60 - 62 per barrel. To some extent, the fact that the hurricane season was not as bad as in the previous year, has helped. However, with members of the OPEC seeking to maintain price levels, by reducing production and considering other geo-political factors, it is quite unlikely that international oil prices will reduce significantly from these levels. At the same time, any adverse development can once again lead to oil prices hardening sharply. This is of great significance for a country like India, with its growing demand for energy and high degree of dependence on external sources for meeting its energy needs. In 2005-06, India's self-sufficiency in terms of products manufactured from domestic crude was only around 27.5%.

The volatility in the markets is a cause for concern for most nations. At the same time, it has also been seen that beyond a point, the rising prices are not sustainable. While this gives some comfort, the fact remains that the prices are prone to sharp movements without warning. Also, the days of seeing crude oil prices at levels of USD 20 - 30 per barrel are probably over. With higher prices, the trend towards looking at alternatives to traditional petroleum products has also gathered momentum, along with renewed efforts and investments on exploring new oil and gas fields.

The Indian Economy

While the rising oil prices were expected to have a negative effect on the economy, the Indian economy has been delivering strong growth numbers. The GDP growth, in excess of 8% achieved in 2005-06, has been sustained during 2006-07 and the first half has seen the economy grow at 9.1%, as compared to the same period of the previous year. The inflation rate is not expected to have an adverse impact on the economy. The growth in the various sectors of the economy has in turn, made India a very attractive destination for international investors. The flow of investments has been on the increase and this is reflected in the sharp rise in the benchmark stock indices like the BSE Sensex.

The overall economic scenario is quite bright and provides ample scope for optimism. All these seem to indicate that the economy has been able to absorb the rising prices of oil in the international markets. At the same time, one cannot lose sight of the fact that the value of crude oil imports has been rising significantly. The crude oil import bill, which stood at USD 39 billion for 2005-06, is estimated to have reached a level of USD 25 billion within the first six months of the current year. In fact, the import of crude oil and petroleum products account for almost 35% of India's total imports.

The recent easing of prices is expected to provide some respite. However, these high levels of outgo of foreign exchange are bound to increase the current account deficit and put the growing economy under pressure.

The Domestic Oil Sector

The indigenous crude oil production during 2005-06 stood at 32.20 Million Metric Tonnes. This represents a slight decline as compared to the previous year. The trend of production up to September 2006 indicates that the current year will see more or less the same level of domestic production. At the same time, the total refinery throughput in the country stood at almost 127 MMT in 2005-06. The gap represents the extent of crude oil imports. Besides this, finished products to the extent of 11.68 MMT, costing almost USD 6 billion, have been imported. With the growth in demand for petroleum products, the level of import of crude oil and

products is only expected to grow further, in the absence of major new discoveries within the country.

As on date, the country's refining capacity exceeds the total demand for petroleum products. Consequently, companies had to export a part of their production. As long as the spreads between crude oil and petroleum products are high, exports are a viable option. The exports of petroleum products during the year amounted to 21.50 MMT, valued at USD 10.5 billion.

On the marketing front, the year saw the completion of the process of moving to BS-II and Euro III standards for petrol and diesel throughout the country. However, the overall growth in the sale of petroleum products has remained flat during the year. The rapid growth in the aviation sector has led to increase in sale of aviation turbine fuel by 17.3%. The growth in the economy and in particular, the services sector, has led to increase in sale of petrol by around 4.8%. However, there has been significant decline in the sales volumes of products like naphtha and fuel oils. Private players continued to increase their presence in the market and consequently, their market share. However, the current year has seen private players taking a hit on their volumes owing to the rising international prices.

As per the latest available data for the current year, the demand for petroleum products in the country is growing at a rate of around 3% over the previous year. While products like naphtha and fuel oils continue to show decline in volumes, the sales of aviation turbine fuel, petrol and diesel are seeing strong growth. Refinery throughput levels have also increased significantly.

Chapter II

Literature Review

According to Jack D. Schwager [1], "Fundamental Analysis uses economic data about supply and demand while technical uses past price data. Many traders use fundamental analysis to evaluate their decisions while technical analysis to time their needs. Observation of different traders reveals that both techniques should be used wisely to attain success."

Jack D. Schwager,[2] states that " Bar Charts are by far the most common of all charts. Used in combination the charts provide a telephoto effect. The monthly and weekly charts provide a market perspective. The daily, weekly, monthly charts can be used to determine both long term and short term trends."

Again, according to Jack D. Schwager, [3] "Technical Analysis by comparison is the study of price activity more specifically price patterns to identify favorable trading opportunities. Hence by studying the price patterns the technical analyst looks for price behavior that suggests possible initiation, conclusion, and continuation of a trend."

According to Michael C. Thomsett,[4] "Fundamental Analysis performs the valuable service of leading everyday investors into better investment decisions while allowing them to learn at their own pace through the use of worksheets, forms, graphs, charts, checklists, examples, definitions, sidebars, and step-by-step examples."

Martin J. Pring[5] is of the opinion that, "they never sell for what they are worth but what people think they are worth". This statement is applied to any traded

security. "It is important that market participants look ahead, anticipate future developments, and take action now."
Brown and Jennings[6] (1989) showed that technical analysis has value in a model in which prices are not fully revealing and traders have rational conjectures about the relation between prices and signals.

Frankel and Froot [7] (1990) showed evidence for the rising importance of chartists.
Neftci[8] (1991) showed that a few of the rules used in technical analysis generate well-defined techniques of forecasting, but even well-defined rules were shown to be useless in prediction if the economic time series is Gaussian. However, if the processes under consideration are nonlinear, then the rules might capture some information. Tests showed that this may indeed be the case for the moving average rule.

Taylor and Allen[9] (1992) report the results of a survey among chief foreign exchange dealers based in London in November 1988 and found that at least 90 per cent of respondents placed some weight on technical analysis, and that there was a skew towards using technical, rather than fundamental, analysis at shorter time horizons.
In a comprehensive and influential study Brock, Lakonishok and LeBaron[10] (1992) analyzed 26 technical trading rules using 90 years of daily stock prices from the Dow Jones Industrial Average up to 1987 and found that they all outperformed the market.

Blume, Easley and O'Hara[11] (1994) show that volume provides information on information quality that cannot be deduced from the price. They also show that traders who use information contained in market statistics do better than traders who do not.

Neely[12] (1997) explains and reviews technical analysis in the foreign exchange market.

Neely, Weller and Dittmar[13] (1997) use genetic programming to find technical trading rules, and find strong evidence of economically significant out-of-sample excess returns to those rules for each of six exchange rates, over the period 1981–1995.

Lui and Mole[14] (1998) report the results of a questionnaire survey conducted in February 1995 on the use by foreign exchange dealers in Hong Kong of fundamental and technical analyses. They found that over 85% of respondents rely on both methods and, again, technical analysis was more popular at shorter time horizons.

Neely[15] (1998) reconcile the fact that using technical trading rules to trade against U.S. intervention in foreign exchange markets can be profitable, yet, long term, the intervention tends to be profitable.

LeBaron[16] (1999) shows that, when using technical analysis in the foreign exchange market, after removing periods in which the Federal Reserve is active, exchange rate predictability is dramatically reduced.

Lo, Mamaysky andWang[17] (2000) examines the effectiveness of technical analysis on U.S. stocks from 1962 to 1996 and finds that over the 31-year sample period, several technical indicators do provide incremental information and may have some practical value.

Fern´andez-Rodr´ýguez, Gonz´alez-Martel and Sosvilla-Rivero[18] (2000) apply an artificial neural network to the Madrid Stock Market and find that, in the absence

of trading costs, the technical trading rule is always superior to a buy and- hold strategy for both "bear" market and "stable" market episodes, but not in a "bull" market. Beating the market in the absence of costs seems of little significance unless we are interested in finding a signal which will later be incorporated into a full system. Secondly, it is perhaps naive to work on the premise that "bull" and "bear" markets exist.

Lee and Swaminathan[19] (2000) demonstrate the importance of past trading volume.

Neely and Weller[20] (2001) use genetic programming to show that technical trading rules can be profitable during US foreign exchange intervention.

Cesari and Cremonini[21] (2003) make an extensive simulation comparison of popular dynamic strategies of asset allocation and find that technical analysis only performs well in Pacific markets.

Kavajecz and Odders-White[22] (2004) show that support and resistance levels coincide with peaks in depth on the limit order book and moving average forecasts reveal information about the relative position of depth on the book. They also show that these relationships stem from technical rules locating depth already in place on the limit order book.

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Chapter III

Theoretical Framework

Security Analysis is the first step in the process of investment decisions. It involves forecasting future conditions, and the benefits that the holding of that security would provide in those conditions. It also involves arriving at the 'correct price' of security given those benefits after adjusting for inherent time and risk.

Fundamental Analysis

Fundamental Analysis is the approach to arrive at the 'correct price' of the security. Its objective is to identify the under priced and overpriced securities in the market place so that the investment decisions - buying and selling can be made. A security is said to be under priced if its current market price is less than the 'correct price' known as "intrinsic" or "true value". Conversely, in an overpriced current market price is above its intrinsic value.

Fundamental analysis is based on the assumption that a security has an intrinsic value at any given time. This value is a function of underlying economic values-specifically expected returns and risk. By assessing these fundamental determinants of intrinsic value of a security, it is possible to determine intrinsic value. The estimated intrinsic value can then be compared to current market price to determine whether the stock is under priced or over priced. Another assumption of the fundamental analysts is that discrepancies between the intrinsic value and current market value occurs from time to time, which eventually is recognized by the investors who invest in the stock and in the long run the two values come together. Those investors who perform good fundamental analysis and identify these discrepancies earlier, benefit from these.

The objective of the fundamental analysis is not to enter and exit the markets very often, for switching securities or to have speculative gains; instead, it is for long-term investments. It reduces the risk of loss from buying an overpriced stock or selling an under priced stock.

The fundamentalist may buy a stock if the current market price is equal to the intrinsic value, that is, when it is at fair value, then the investor will earn the *normal rate of return.* In case the investor buys under priced stock, then he gets *abnormal rate of return* (relative to risk) on his investments. This is known as beating the market. Fundamental analysts believe that stock market can be beaten by identifying and investing in under priced stocks.

Definition of Intrinsic Value

Intrinsic value of the security as defined by the Graham and Dodd is "that value which is justified by the facts, e.g. assets, earnings, dividends, definite prospects, including the factor of management (of the company)". The intrinsic value of the company is determined by discounting the company's prospective earnings stream or the shareholder's prospective dividend stream.

According to fundamental analysts, earnings of the company and prospective dividend stream of shareholders depend on following factors –

- Economic and industrial environment
- Relative importance of company within its industry.
- Company's financial strength and performance.
- Its policies, quality of assets and management.

Fundamental analysts quantify the relationship between economic, industry and company indicators with a view to forecasting earnings and dividends. For this purpose, economy, industry and company analysis is done.

Framework of fundamental analysis

Fundamental analysts follow the following approach –

- They first analyze the overall economy and securities market.
- Analyze the industry within which a particular company operates.
- Finally the analysis of the company.

Analysts follow both the frameworks –

1. EIC framework - economy, industry and company analysis
2. CIE framework - company, industry and economy analysis

Economy-Industry-Company Analysis

In the Top down approach, first of all the overall Economy is analyzed to judge the general direction, in which the economy is heading. The direction in which the economy is heading has a bearing on the performance of various industries. That is why Economy analysis is important. The output of the Economy analysis is a list of industries, which should perform well, given the general trend of the economy and also an idea, whether to invest or not in the given economic conditions.

Measuring a Company's Financial Health

Gaining a true picture of a company's finances means not only scrutinizing the financial statements but also analyzing relationships among various assets and liabilities, thus highlighting trends in a company's performance and changes in its financial strength relative to its competitors.

Measures of Value

Book value is based on historical costs, not current values, but can provide an important measure of the relative value of a company over time. Book value can be figured as assets minus liabilities, or assets minus liabilities and intangible items such as goodwill; either way, the figure that results is the company's net book value. This is contrasted with its market capitalization, or total share price value, which is calculated by multiplying the outstanding shares by their current market price.

A company's **market value to its book value** ratio can also be analyzed on a per-share basis. Dividing book value by the number of shares outstanding gives the book value per share and the same is compared to the current stock price, so as to determine if the company's stock is fairly valued. Most stocks trade above book value because investors believe that the company will grow and the value of its shares will, too. When book value per share is higher than the current share price, a company's stock may be undervalued and a bargain to investors. In fact, the company itself may be a bargain, and hence a takeover target.

Price/earnings ratio (P/E) is a more common yardstick of a company's value. It is the current stock price divided by the earnings per share for the past year. For example, a stock selling for Rs. 20 with earnings of Rs. 2 per share has a P/E of 10. While there's no set rule as to what's a good P/E, a low P/E is generally considered good because it may mean that the stock price has not risen to reflect its earning power. A high P/E, on the other hand, may reflect an overpriced stock or decreasing earnings. As with all of these ratios, however, it's important to compare a company's ratio to the ratios of other companies in the same industry.

Technical Analysis

Technical Analysis is the study of market action, principally through the use of charts. Market action is expressed through movement of prices and the volumes that accompany them. Prices and volumes are therefore the only two variables to be studied when using technical analysis. Technical analysis is the art of interpreting stock price movements. Since financial market analysis involves some degree of subjectivity, all of them are therefore an art and not a science (which involves exact rules being met under all circumstances)

Since technical analysis addresses the market, it is actually studying the effect of action by all kinds of players. Technical analysis is based on the fact that the market, which is made of all participants, has more knowledge than individual players. It reflects every market player's opinion on the market. Technical analysis believes that history and patterns repeat again and again A good understanding of these underlying dynamics of market behavior will ensure that it works all the time.

Fundamental analysis addresses all variables outside the market whereas Technical analysis deals with variables within the market. The objective of both forms of analyses is the same - it is to find future direction of stock price movements. Only the means of achieving the same differs. One of the major advantages in learning technical analysis is that it enables one to deal with market

risk - this is one important area that is completely ignored by fundamental analysis.

In a statistical study done by Purdue University in the United States, it was found that the major risk faced by investors were - in order of importance - market, sector and stock. It is only technical analysis, which can give one an insight into market risk. Hence a good knowledge of both technical and fundamentals would produce a more rounded, well-informed, investor.

Methods of Technical Analysis

There are two main methods for studying investment data: technical analysis, the study of price and volume trends and fundamental analysis, the study of a company or industry's earnings. Technical analysis itself has two main branches - one dependent on intuition and interpretation, the other on quickly crunching colossal amounts of data. Acolytes of the first decipher information about trading through interpreting price charts. Theirs is the rarefied realm of head-and-shoulders patterns, double-bottoms, flags and pennants - patterns that their experienced eyes become increasingly adept at discerning. Computers have limited power to replicate the intuitive nature of their work.

That's not true for the other branch of technical analysis - that which relies on brute calculation to crunch raw price and volume data. What's left after the distillation: secondary indicators (oscillators, moving averages) that are then used to spot buying or selling opportunities. While powerful computers and complex formulas for deriving indicators can lend an unwarranted scientific aura to this whole process, it's worth remembering that no computer or calculation is powerful enough to predict the future with absolute certainty. There is a place for subjectivity within this branch as well as the first.

Types of technical indicators

Generally, there are two kinds of technical indicators: One type (including moving averages) is best suited to track an upward or downward trend, while the other (including oscillators) is most useful in tracking sideways motion.

Among trend-following indicators, perhaps the best known is the moving average, which charts the average price of something over a period of time. With each new calculation, the oldest observation used in figuring the average is dropped and the most recent is substituted. Thus, a five-day moving average would be calculated using prices from the past five days; a 100-day moving average would use the most recent 100 days.
While it's possible to construct a system that uses just one moving average to signal when to buy or sell, many technicians use two or three. Then they watch closely to see when the averages begin to cross one another. They can also build moving-average envelopes around prices by adding and subtracting a fixed percentage of the average to itself by, for instance, putting "bands" of 3 percentage points above and below a 20-day moving average. A daily price that moved out of the bands and hence out of the envelope might be interpreted as meaning that the market was headed for an extreme. The application of Bollinger bands is the same as with envelopes: to try to spot promising trading time windows as the prices move beyond the bands. These bands are also built around a moving average, but the boundaries of the envelope are related to the volatility of the market. When prices are volatile and harder to predict from the previous day's information, Bollinger bands widen. When prices are relatively steady, the bands narrow.

Oscillators are generally used alongside moving averages or other trend-following indicators to improve market timing. These indicators, as the name suggests, generally fluctuate from one extreme value to another around a midpoint line. Alarm bells may go off when an oscillator hits extreme values or when an oscillator chart diverges from a price chart.

Among widely known oscillators

Momentum: A running measure of the difference between the latest price and the price a fixed number of days earlier.

Relative Strength Index: An index that compares the price of a stock on up days over a given period to the price on down days over that same period. In theory, a stock that holds value on the downside will be a strong performer on the upside, and vice versa.

Stochastic: An indicator of the level of the current price in relation to the high and low prices over a fixed period. This indicator is usually graphed as two lines representing the original indicator and its three-day moving average.

Moving-Average Convergence Divergence (MACD): An indicator based on the difference between a short term and a longer term moving average. The result is also averaged and the two are compared. Signals are generated when the two lines cross. The difference between the two lines is often charted as well, and is known as a histogram.

Chapter IV

Research Methodology

Research Aim

Equity Research of the Indian Downstream Petroleum Sector

Research Objectives:

(i) To conduct a Fundamental Analysis of Indian Downstream Petroleum Industry.

(ii) Technical Analysis of select Downstream Stocks.

(iii) To suggest a perspective on the future of Indian Downstream Petroleum Industry.

Research Plan:

(i) Conduct Fundamental Analysis using EIC framework.
(ii) Select Downstream Stocks.
(iii) Perform Technical Analysis of selected stocks.
(iv) Make recommendations.

Research Tools:

(i) **Tools of Fundamental Analysis**
Economy, Industry and Commodity Framework

(ii) **Tools of Technical**
Prices
Volume
Market sentiment

(iii) **Financial Statement Analysis of select Downstream Stocks of last 3 years.**

Limitations:

(i) Research Analysis and conclusions are based on last 3 years data and cannot be conclusive.

(ii) All Downstream Stocks cannot be included in the analysis for lack of time and resources.

(iii) The analysis is confined to "listed" stocks only.

Chapter V

Fundamental Analysis - I

Economy Analysis

Continuing the trend of 7-8% growth of last two years, the Indian economy is projected to grow 8.4% in 2005-06. Crude oil prices have continued to rise, rising from about $50/barrel in March 2005 to $65/barrel in March 2006 due to combination of tight demand-supply balance and geopolitical tensions in global oil markets. The impact of high prices on the economy was, however, contained through a policy of sharing the burden between the Government of India, Oil Companies and the consumer. The BSE Sensex continued setting new records reflecting the confidence in the performance of the economy and the corporate sector.

Agriculture sector is projected to record a modest recovery of 2.3% in 2005-06 against an anemic 0.7% growth in 2003-04. Industry is projected to grow by 9% over and above 8.6% growth in 2004-05. Within the industry sector, Construction is estimated to record around 12% growth, continuing the double-digit growth trend of the last two years. Housing, Real Estate and Retail continue to provide support for construction. Manufacturing GDP is projected to have expanded by more than 9% in 2005-06 against 8.1% growth in 2003-04.

The Services sector is expected to maintain its growth momentum at around 10%. Within services sector, trades, hotels, transport and communication are projected to record double-digit growth of around 11% while financial services are likely to grow by 9.5%. Services sector share in GDP has gone up from around 50% in 2000-01 to 54% in 2005-06. This increase has been at the expense of the agriculture sector. Industry sector's share has remained largely constant, increasing marginally from 25.9% to 26.2% between 2000-01 and 2005-06.

Petroleum product consumption has been largely stagnant rising by just 0.3% in 2005-06. With a booming Aviation sector, ATF consumption continued its high

growth trajectory, increasing by 17% over and above 13% growth recorded in 2004-05. Petrol demand continued the trend of 4-5% growth. Diesel consumption after growing by 7% in 2004-05 reverted to marginal growth trend, clocking a growth of only 1.3% in 2005-06. Naphtha consumption declined by 12% in 2005-06 vis-à-vis 18% growth in 2004-05. Bitumen consumption reversed its decline of 2004-05, increasing by 5.3% in 2005-06. SKO and LDO consumption continued to decline in 2005-06 too while LPG consumption increased marginally by 0.6%. On the external front, exports recorded a growth of 23% during 2005-06. Rising commodity prices improved unit realization for exports. Petroleum product exports increased by 18% in 2005-06, rising from 18.2 MMT in 2004-05 to 21.5 MMT in 2005-06.

In value terms, petroleum product exports went up by more than 200%. Realization was $10.7 billion in 2005-06 against $6.6 billion in 2004-05. Imports went up by 32% in the first eleven months of 2005-06 with POL imports increasing by 49%. Among non- POL imports, iron & steel, non-electrical machinery, machine tools, metaliferrous ores & metal scrap, pearls, precious & semi-precious stones have seen high growth recording increase ranging from 30-90%.

Crude and petroleum product imports in 2005-06 were around 111 MMT compared to 105 MMT in 2004-05. In value terms, POL imports in 2005-06 were about $45 billion vis-à-vis $29 billion in 2004-05. Current account deficit in first three quarters of 2005-06 was $10.6 billion, an all time high. Earlier, the highest current account deficit was recorded at $9.7 billion for the fiscal year 1990-91. Strong capital inflows financed the current account deficit. Foreign exchange reserves stood at $145 billion at the end of the financial year, an accrual of $9.5 billion over reserves in 2004-05. Average rupee exchange rate vis-à-vis US $ was 44.13 in 2005- 06 against 44.84 in 2004-05. Financial year ended with exchange rate at Rs. 44.6 per US $.

The Inflation rate was lower at 4.5% in 2005-06 compared to 6.5% in 2004-05. Higher crop production and only partial pass-through of high oil prices to the economy helped rein in inflation.

Projections indicate that the economy is likely to maintain current high rates going forward which should be a positive for the Oil Sector.

Industry Overview

Demand growth in the petroleum has been sluggish in 2005-06 increasing by just 0.3% reversing 3.5% growth rate trend of last three years. Petroleum products consumption in the country was around 112 MMT in 2005-06. On the supply side, however, refining capacity, at around 133 MMT, continues to outstrip demand. As a result, nearly 22 MMT petroleum products were exported. Refining margins have been good though not as high as previous year, as easing of China's explosive 15% demand growth to 2.4% reduced demand-supply imbalance.
Oil prices have continued to increase over the years. Hurricanes in the Gulf of Mexico, turmoil in Nigeria, Venezuela and Iraq and rising geopolitical tensions over Iran and limited spare capacity in Saudi Arabia have pushed the prices up. Further, constraints in the refining system have pushed up the product prices that fed through to crude prices. In most of the developing countries including India, economy has been shielded from high prices. Indian oil companies have had to contend with higher under-recoveries affecting their financials.

Among private oil companies, sale of HSD by Reliance has reached 3.6 MMT, indicating all-India market share of almost 9%. In MS, nearly 75% of incremental sales have gone to private oil companies while in retail HSD, PSU oil companies' sales have declined to be picked up by private marketers. LNG has augmented gas availability in the country and has contributed to decline in Naphtha sales. Growing competition from new entrants and alternate fuels, high oil prices, increasing costs relating to environmental compliance, under-recoveries from the sale of auto fuels, SKO and LPG and increasing expenditure requirements relating to projects and marketing translate into a challenging operating environment. HPCL has developed a strategy involving a judicious mix of product differentiation, developing a strong brand equity, network expansion and vertical integration and diversification into gas to protect and grow its business.

MOU Performance

The Corporation has been achieving an all round "Excellent" rating vis-à-vis MOU targets for fourteen consecutive years upto 2004-05 as a result of the concerted efforts of all the employees. The performance of the Corporation for the year 2005-06 also qualifies for "Excellent" rating basis self assessment.

Operational and Financial Performance

The operational performance of the Corporation has been significant. The turnover during 2005-06 is Rs.76920.26 crores as compared to Rs.65218.33 crores in 2004-05 showing 18% increase. The marketing volumes achieved were at 19.48 MMT as compared to 20.09 MMT for the previous year. Our Mumbai Refinery and Visakh Refinery together recorded the thruput of 13.82 MMT as compared to 13.94 MMT for the previous year. The growth trend in MS/HSD our main product line have been successively increasing by registering highest growth rates in the industry. Similarly the Aviation and Lubes business Line have also made distinct impact in terms of value of growth and market.

Industry Analysis

After more than four decades as a closed economy and 15 years of reforms India has finally ascended the world stage and laid the foundations for rapid growth. Following an 8.5% growth on the rebound in 2003-04, the GDP grew by 7.5% in 2004-05, 8.4% in 2005-06, and is projected to grow by about 7.9% this year.

The Indian economy has become more open, globally integrated and competitive. The downstream petroleum industry and enterprises are now far more confident, competitive and ambitious about their future. In fact, India deserves praise for all the recent economic achievements too - like growth of a world-class Information Technology sector, development of a competitive automotive industry and a burgeoning middle class.

With a solid foundation for growth now in place, targeting a 10% growth rate in 2-3 years' time is eminently feasible. For this, however, India needs to expeditiously unlock her true potential, by focusing on various imperatives – like boosting agricultural productivity, enriching the rural populace, revitalizing the urban sector, developing infrastructure and encouraging the growth of the manufacturing sector. There is also the need to focus on labor and market reforms, efficient management of economic resources, energy security, simplifying procedures, relaxing entry barriers, checking population growth, etc.

India, however, faces major hurdles in making available the energy required to fuel its growing economy. Our energy needs are expected to grow by 40% in the next five years and more than double by 2020. By 2012, India's consumption of energy (excluding biomass) will reach the equivalent of 550 million tonnes of oil annually, up from about 385 million tonnes in 2005.

India continues to be a largely under-explored territory in oil & gas. Therefore, dependence on imports is likely to climb up from about 70% today to over 80% of the total hydrocarbon demand by the year 2020. On the flip side, India has the potential to become an export-oriented hub for finished products, with refining capacity likely to go up from the current 134 to 234 million tonnes per annum by the year 2012. Natural gas, hailed as the fuel of the future, will continue to be in short supply despite recent domestic discoveries. Large line with Government policy quantities of LNG will have to be tied up to supplement of pipelines from gas-rich nations like Iran, Myanmar and Turkmenistan, for which elaborate discussions are underway.

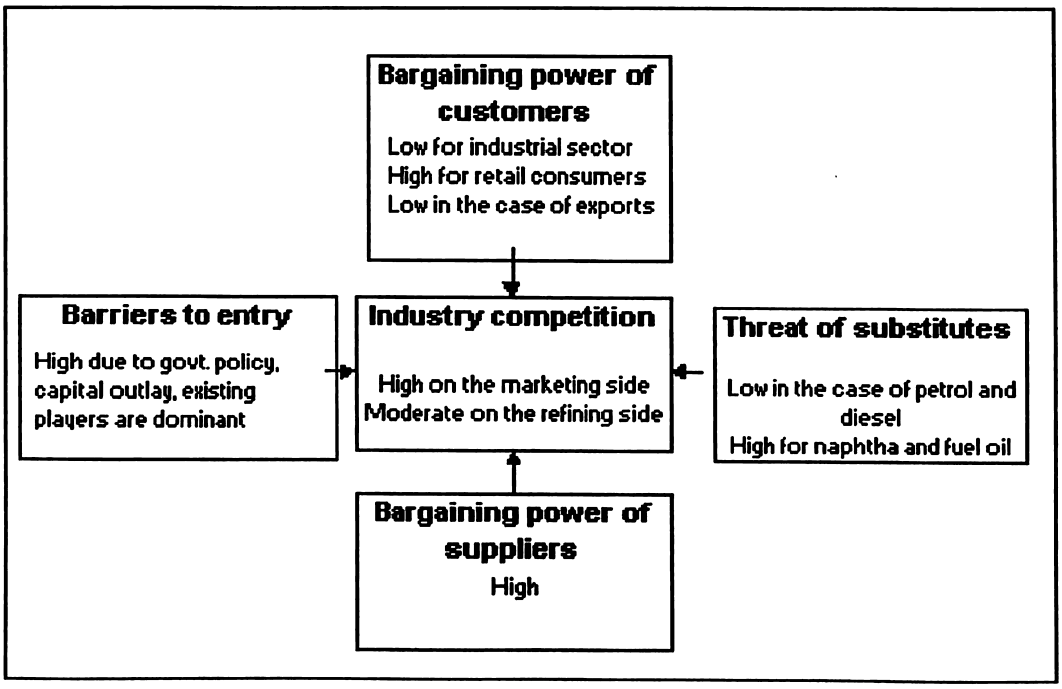
These are, therefore, very exciting - and challenging - times for companies in the Indian hydrocarbon sector. The current situation of high crude oil prices in the international market is of particular concern for players in the Indian hydrocarbon sector. More so in the case of oil marketing companies like IndianOil, which are faced with net under-realization on the sale of the four major products - petrol, diesel, kerosene for public distribution and LPG for domestic use - due to moderation of retail selling prices in the recent years.

Capacity utilization levels have been increasing in the face of strong petroleum product demand as well as inadequate refining capacity additions due to uncertainty about future investment returns. The year 2005 saw utilization creeping up to 86.3% from 83.8% in the year products in a number. 2000. Growing environmental concerns on the quality of transportation fuels are posing a major challenge for the refiners worldwide in meeting the stringent specifications in terms of sulphur content and ignition quality. In line with this, the Indian refining industry saw major investments in quality upgradation facilities to comply with the mandate of supplying Bharat Stage (BS-III/BS-II) products in the country during the year, much ahead of introduction of similar quality products during the year, much ahead of the introduction of similar quality products in a number of developing countries, including China.

Cross country pipeline networks, preferred as a cost effective, energy efficient, safe and environment friendly mode for transportation of crude oil and petroleum products, have been playing a vital role in meeting India's energy demand. They are now a key constituent of the country's infrastructure, transporting crude oil from import terminals as well as domestic sources to inland refineries, and finished products from refineries to major consumption centres. Pipeline operations are of strategic importance in the overall business plans of the organization.

Energy: A Porter's Perspective

Refining industry worldwide is performing well over the the past few years, which could be attributed to production disruptions due to natural calamities, lower spare capacity worldwide in addition to the growing demand for petroleum products worldwide. All these factors have resulted in refining companies earning significantly high (gross refining margins) and thereby, reporting higher profits. Presented below is a perspective on the operating environment of the Indian refining sector in terms of Michael Porter's model of competitive forces.



I Barriers to entry: High for the industry.

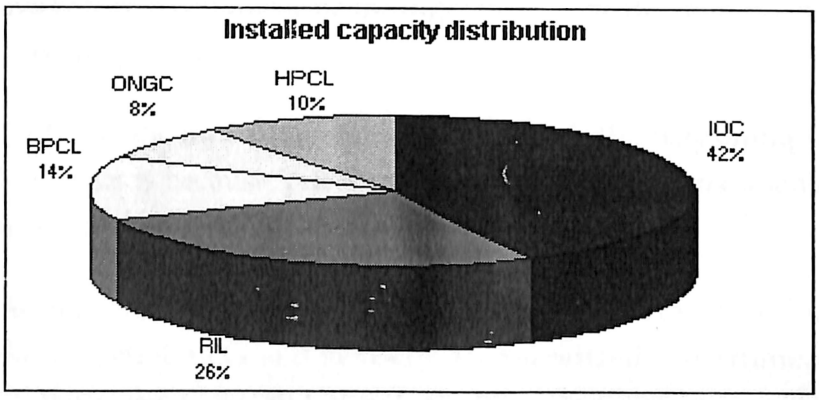
They include:

(i) Economies of Scale

As far the sector dynamics goes, scale of operations does matter. Benefits from economies of scale are derived in the form of better bargaining power when it comes to sourcing of raw materials, ability to use various crude products for a

given output and selling the end product to the consumers. Refining is highly capital intensive in nature (Reliance is setting up a 29.4 MMT refinery in India for a sum of Rs 270 billion or Rs 9,200 m per MT). While the cost of this refinery is lower than industry standards, this is the benefit of a larger size complex refinery.

In addition to the refining capacity, companies should have presence on the marketing side as well so as to capture marketing margins (in a completely de-regulated environment). Though the current government policy is unfavorable towards the marketing companies (which are forced to subsidise the customers on behalf of the government), globally, companies with presence in refining and marketing are able to increase/decrease prices driven purely by business environment. Even in the high crude price scenario like what we are witnessing currently, global integrated players are making profits. In India, currently, IOC, HPCL, BPCL, ONGC and RIL account for a lion's share of the industry's refining capacity. In this sense, the sector is fairly consolidated.



(ii) Capital Requirement

As mentioned earlier, refining is a capital-intensive business. The costs associated with establishing a refining is in the vicinity of Rs 9,000 million to Rs 10,000 million per MT (depending on the complexity of the refinery). Also, a presence on the marketing front requires investments worth Rs 2 billion as per government regulations. Further, to establish retail outlets, it costs roughly Rs 15 million to Rs 20 million per outlet (depending upon the location). Even if one has the capital to set up the marketing network, space is unavailable in many larger cities (another

entry barrier). Also, integrated players need to shell out money in building pipeline facility, which costs around Rs 15 m per kilometer.

(iii) Government Policy

Considering the current policy environment, perhaps, this is 'the' major entry barrier for companies (especially those with a marketing network plan). The government plays an active and integral role in policy determination, especially when it comes to pricing of petroleum products. Even though the energy sector was supposed to have been deregulated in April 2002, much has been on paper with very little implementation. Thus, regulations act as deterrent to new entrants.

II Bargaining Power of Buyers - Currently High

Due to the government policy (indirectly). As far as the sale of refined products is concerned, either the refineries sells it directly (to the industrial sector and marketing companies) or through their own distribution networks. Exports are also an opportunity.

As far as the industrial sector is concerned, the bargaining power of refineries is less. This is because prices in this segment are internationally benchmarked (the sector is de-regulated at the refinery gate level).

As far as the revenues from the marketing network are concerned, currently, diesel, petrol, LPG and kerosene are subsidized. Government decides the pricing of these products and therefore, the bargaining power of consumers is high (indirectly, owing to the vote bank). Subsidized products account for 70% of total industry sales. As far as exports are concerned, margins are lower.

III Bargaining Power of Suppliers - High

The major raw material for the sector is crude oil (90% of total cost), prices of which are determined by global demand-supply factors (OPEC has a major say in determining global crude prices). Since India imports 70% of its total crude requirement, that too largely Brent crude, bargaining power is close to 'nil' (unless there are specific government-to-government arrangements).

IV Competition - Moderate in Refining

Currently, demand outpaces supply, which can be seen from higher capacity utilization across the board. The balance is in favor of producers. Competition is high on the marketing front.

V Threat of Substitutes - Moderate to Low

Though much has been talked about bio-fuels and fuel cell-based technologies, these are still not a meaningful threat to petroleum products, especially petrol and diesel. At the same time, higher natural gas finds (in India and liquefied natural gas transported from Middle East) is threatening the demand for naphtha and furnace oil in India (the substitution effect has been significant in the past three years).

Viewing all the aforesaid factors in conjunction with the global scenario, refining margins are likely to be higher going forward. That said, considering the capacity expansion in India in the next five years, supply is likely to far outpace demand, thus forcing players to depend on exports to maintain capacity utilization at optimum level (some of the expansions are dedicated for exports). On the other hand, growth prospects of marketing companies are bleak, based on the current government policy regime

Company Analysis

Indian Oil Corporation Ltd.

Indian Oil Corporation Ltd. (IndianOil) was formed in 1964 through the merger of Indian Oil Company Ltd. (Estd. 1959) and Indian Refineries Ltd. (Estd. 1958). It is currently India's largest company by sales with a turnover of Rs. 1,83,204 crore (US $ 41 billion) and profits of Rs. 4,915 crore (US $ 1.10 billion) for fiscal 2005.

IndianOil is also the highest ranked Indian company in the prestigious Fortune 'Global 500' listing (153rd position) based on fiscal 2005 performance. It is also the 21st largest petroleum company in the world and the # 1 petroleum trading company among the National Oil Companies in the Asia-Pacific region.

IndianOil and its subsidiaries account for 47% petroleum products market share among public sector oil companies, 43.5% national refining capacity and 74% petroleum products pipeline capacity. For the year 2005-06, the IndianOil group sold 54.6 million tonnes of petroleum products, including 2.09 million tonnes through exports.

The IndianOil Group of companies owns and operates 10 of India's 18 refineries with a combined refining capacity of 60.20 million tonnes per annum (1.2 million barrels per day). These include two refineries of subsidiary Chennai Petroleum Corporation Ltd. (CPCL) and one of Bongaigaon Refinery and Petrochemicals Limited (BRPL).

The Company's cross-country crude oil and product pipelines network spanning over 9,000 km meets the vital energy needs of the country. To maintain its competitive edge and leadership status, IndianOil is investing Rs. 24,400 crore (US $ 5.5 billion) during the X Plan period (2002-07) in integration and diversification projects, besides refining and pipeline capacity augmentation, product quality up gradation and expansion of marketing infrastructure.

As the flagship national oil company in the downstream sector, IndianOil, together with its marketing subsidiary, IBP Co. Ltd., reaches precious petroleum products to millions of people everyday through a countrywide network of over 30,000 sales points. They are backed for supplies by 183 bulk storage terminals and depots, 97 aviation fuel stations and 88 *Indane* LPG bottling plants.

IndianOil, together with IBP, operates the largest and the widest network of petrol & diesel stations in the country, numbering over 15,000. It reaches Indane cooking gas to the doorsteps of 43.4 million customers in 2,546 markets through a network of 4,856 Indane distributors.

IndianOil's ISO-9002 certified Aviation Service commands a 64% market share in aviation fuel business, meeting the fuel needs of domestic and international flag carriers, private airlines and the Indian Defence Services. IndianOil also enjoys a dominant share of the bulk consumer business, encoding that of railways, state transport undertakings, industrial, agricultural and marine sectors.

IndianOil's world class R&D Centre is perhaps Asia's finest. Besides pioneering work in lubricants formulation, refinery processes, pipeline transportation and alternative fuels such as bio-diesel, the Centre is also the nodal agency of the Indian hydrocarbon sector for ushering in Hydrogen fuel in the country.

A wholly-owned subsidiary, IndianOil Technologies Ltd., is commercialising the innovations and technologies developed by IndianOil's R&D Centre, across the globe.

The merger of the wholly owned subsidiary, Indian Oil Blending Ltd., is complete. Merger of IBP Co. Ltd., the marketing subsidiary, with the parent company is nearing completion. Merger of Bongaigaon Refinery & Petrochemicals Ltd. with the parent company is in process.

IndianOil has set its sight to reach US$ 60 billion revenues by the year 2011-12 from current earnings of US$ 41 billion. The road map to attain this milestone has been laid through vertical integration - forward into petrochemicals and

backwards into exploration & production of oil - and diversification into natural gas business, besides globalization of its marketing operations.

In petrochemicals, IndianOil is currently implementing a master plan envisaging Rs. 30,000 crore (US$ 6.8 billion) investment by the year 2011-12. As part of this, a world-scale Linear Alkyl Benzene plant at Gujarat Refinery and an integrated Paraxylene/Purified Terephthalic Acid plant at Panipat are already in operation, while a Naphtha Cracker with downstream polymer units is coming up at Panipat. IndianOil also proposes to develop a similar refinery-cum-petrochemicals complex at Paradip on the east coast to strengthen its presence in the sector.

In exploration & production (E&P), IndianOil has bagged nine blocks in the first three rounds of bids under NELP (New Exploration Licensing Policy) in India, in consortium with other companies. It has also acquired participating interest in on-shore blocks in Assam and Arunachal Pradesh region. Overseas ventures include two gas blocks in Sirte Basin of Libya, the Farsi Exploration Block in Iran and onshore farm-in arrangements in Gabon. The Corporation is also exploring opportunities to acquire a suitable medium-sized E&P company to quickly consolidate its upstream portfolio.

In natural gas business, IndianOil is already marketing 1.43 million tonnes of gas per annum. To augment its business in the sector, it has signed an MOU for import of 1.75 million tonnes of LNG per annum with Iran for supplies from the year 2009 onwards. The Corporation has also proposed partnering Petropars, a subsidiary of National Iranian Oil Company, in jointly developing gas blocks in the North Pars fields of Iran.

To emerge as a transnational energy major, IndianOil has set up subsidiaries in Sri Lanka, Mauritius and UAE and is simultaneously scouting new opportunities in energy markets in Asia and Africa.

IndianOil subsidiary, Lanka IOC Ltd., operates 160 retail outlets commanding a 22% market share. Its oil terminal at Trincomalee is also Sri Lanka's largest petroleum storage facility. Lanka IOC occupies the No. 2 spot among the top 50

listed companies operating in Sri Lanka and is ranked No. 5 among the leading brands in the island nation.

IndianOil (Mauritius) Ltd. has also garnered a 14% market share, which include aviation fuelling and bunkering business. It operates a modern petroleum bulk storage terminal at Mer Rouge port, besides five petrol & diesel stations. Besides expansion of retail network, a modern product-testing laboratory is being set up in Mauritius. It has grown to occupy the 25th place among the top 100 companies in Mauritius in less than 30 months after commencement of operations there.

Hindustan Petroleum Corporation Ltd. (HPCL)

HPCL a Fortune 500 company, with an annual turnover of over Rs 74,044 crores, 20% refining & marketing share in India and a strong market infrastructure. The Corporation operates 2 major refineries producing a wide variety of petroleum fuels & specialties, one in Mumbai (West Coast) of 5.5 MMTPA capacity and the other in Vishakapatnam (East Coast) with a capacity of 7.5 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 progressing towards setting up o refinery in the state of Punjab

HPCL also owns and operates the largest Lube Refinery in the country producing Lube Base Oils of international standards. With a capacity of 335,000 Metric Tones this Lube Refinery accounts for over 40% of the country's total Lube Base Oil production.

The vast marketing network of the Corporation consists of Zonal offices in the 4 metro cities and 85 regional offices facilitated by a supply & distribution infrastructure comprising Terminals, Aviation Service Stations, Bottling Plants, and Inland Relay Depots & Retail Outlets.

The Corporation over the years has moved from strength to strength on all fronts. The refining capacity steadily increased from 5.5 million tonnes in 1984/85 to 13.82

million tonnes presently. On the financial front, the turnover grew from Rs. 2687 crores in 1984-85 to an impressive Rs 74,044 crores in 2005 - 06.

Without refining, the rich resources of crude petroleum of nature would remain latent. Value-added products from crude petroleum like petrol, diesel, kerosene, liquefied petroleum gas, naphtha and many more products would not be available for growth and development of a nation.

The two coastal refineries at Mumbai and Vishakapatnam and one joint venture refining facility at Mangalore Refinery & Petrochemicals Limited have been sustaining almost 20% of India's refining requirements. HPCL refineries upgrade the crude petroleum into many value-added products and over 300 grades of lubricants, specialties and greases. The Lubricating Oils Refinery set up at Mumbai is largest refinery in India.

The refinery produces superior quality lube base oils. The offsite product handling facilities of refineries at Mumbai and Vishakapatnam has been automated. Projects have been implemented and facilities upgraded to produce green fuels like unleaded petrol and low sulphur diesel.

The refineries have been benchmarked by an international agency for various performance parameters. Numerous awards have been bestowed on both the refineries in recognition of the efforts in the field of energy conservation, environment and safety.

HPCL Mumbai Refinery with an installed capacity of 5.5 Million Tonnes Per Annum (MMTPA) is one of the most complex in the country is constructed on an area of 321 acres. This versatile refinery which is first of India's modern refineries, symbolizes the country's industrial strength and progress in the oil industry. This fully integrated refinery comprises of Fuels and Lube Blocks.

Bharat Petroleum Corporation Ltd. (BPCL)

Bharat Petroleum Corporation (BPCL) refines and markets petroleum, liquefied petroleum gas and petrochemical products including middle distillates, light

distillate, lubricants, benzene and toluene. It operates 4,500 service stations across India.

Bharat Petroleum is one of India's largest oil companies in terms of market share. Today the company produces a diverse range of products, from petrochemicals and solvents to aircraft fuel and specialty lubricants. The company markets its products through around 4,500 petrol stations, 1000 kerosene dealers and 1,800 LPG distributors, besides supplying fuel directly to hundreds of industries, and several international and domestic airlines.

BPCL's industrial & commercial (I&C) business unit deals in bulk quantities of all petroleum products - from fuel oils and solvents to bitumen. The I&C unit is charged with meeting the fuel requirements of top Indian companies such as Tata Electric, NTPC, HLL, Asian Paints, Reliance Industries and NOCIL.

The aviation business of Bharat Petroleum is an integrated business unit engaged in receiving, storing and delivering jet fuel into air planesand the marketing of aeroshell lubricants to aircraft operators. The business unit supplies aviation fuel, from its strategically located network of aviation fueling stations.

BPCL's retail outlets are now equipped with multi product dispensers to pre-set price and quantity of fuel and electronic air gauges facilitating precise inflation of tires.

On the non-fuel front, BPCL has introduced the errand mall concept at select markets. Called the 'In & Out', these malls provide ATM's, cybercafes, courier services, laundry services, photo studio, music, fast food, greeting cards, bill payments and movie / entertainment tickets.

BPCL runs convenience stores at select petrol pumps that operate under the name 'Bazaar'. These stores provide convenience items and fast food. The company has now also tied in with companies such as McDonalds and Quicky's (a global coffee provider), which provide their services at its stations.

The company has also introduced the Petro Card for individual customers and the SmartFleet Card for fleet owners. Using the Petro Card entitles the customer to petromiles under the petrobonus rewards program.

The year 2005-06 saw the combined refinery throughput at BPC's refineries at Mumbai, Kochi and that of Numaligarh Refinery Limited increase to 19.37 MMT as compared to 19.10 MMT in the previous year. However, on the marketing front, the sales have remained flat at 21.79 MMT as compared to 21.80 MMT in 2004-05. On the financial side, the adverse impact of the under-realisation on retail products, which had taken a toll on the Company's profitability in 2004-05, continued. Also, there was a decline in the refining margins as compared to the previous year. Consequently, the group's net profit reduced from Rs.20.74 billion in 2004-05 to Rs.7.04 billion in 2005-06. This represents a sharp fall of 66% in net profit as compared to the previous year. After setting off the minority interest, the consolidated earnings attributable to the BPC shareowners reduced from Rs.51.40 per share to Rs.14.86 per share.

On the refining front, BPCL's refinery in Mumbai achieved its highest ever crude processing level of 10.30 MMT as compared to 9.14 MMT in the previous year. The Mumbai refinery had also enhanced the production of Euro III grade petrol and diesel to meet the demand in Mumbai and other major cities. The crude throughput at the Kochi refinery for the year was 6.94 MMT. During the year, this refinery completed the first phase of the capacity expansion and modernization project. With this, the Kochi refinery has commenced production of auto fuels conforming to BS-II product specification norms.

On the marketing front, BPC continued to hold on to its second position in terms of market share. The year 2005-06 also saw BPC being conferred the award of the Forecourt Retailer of the year 2005 by Images, the leading retail publishing house. The focus was on network expansion and the year saw the commissioning of 902 new retail outlets. BPCL's branded fuels - 'Speed' and 'Hi Speed Diesel' - have become well established and accepted in the market. Latest Industry data shows that in the premium segment, 41% of car owners use Speed and 22% of diesel users use Hi Speed Diesel. The year also saw the launch of Speed 97 in Delhi and subsequently, in the other key markets. The initial response has been very

promising and the current year is expected to see a rise in sales volumes of this new offering.

With the gas sector showing enormous potential for growth, BPC has been positioning itself to be an important player in this market. Besides the quantities tied up through term contracts, BPC has been trying to ensure that it gets its fair share of the quantities available on spot basis. The Company has continued to strengthen its foray into the city gas distribution sector. A new company has been formed as a joint venture with Gujarat State Petroleum Corporation Limited for the supply of natural gas for industrial, commercial, domestic and automotive use in Gandhinagar, Sabarkantha and Mehsana districts of Gujarat. This is in addition to the existing joint venture companies undertaking city gas distribution in the cities of Delhi, Pune in Maharashtra and Kanpur in Uttar Pradesh. BPC is also exploring similar opportunities in other cities.

Chapter VI

Fundamental Analysis – II

Presented below is the detailed financial analysis of performance of the select companies for the period March 2002 to March 2006. The aim of this analysis is to help in calculating the expected Earnings Per Share as on March 31, 2008. The data generated in this chapter forms the basis of projections of market price for the next investment period

Income Statement – IOCL					
					Rs. Crore
	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
Income Head	12 mths	12 mths	12 mths	12 mths	12 mths
Sales Turnover	115,152.15	124,159.61	134,084.37	153,604.78	193,224.26
Excise Duty	13,720.84	15,424.91	17,022.57	14,374.20	18,321.76
Net Sales	101,431.31	108,734.70	117,061.80	139,230.58	174,902.50
Other Income	1,180.23	1,766.06	1,716.05	1,477.25	2,554.48
Stock Adjustments	(361.88)	2,411.31	728.72	1,653.90	2,599.30
Total Income	**102,249.66**	**112,912.07**	**119,506.57**	**142,361.73**	**180,056.31**
Expenditure					
Raw Materials	85,495.42	92,436.90	97,361.01	122,476.42	158,494.65
Power & Fuel Cost	411.60	444.29	445.25	272.72	335.06
Employee Cost	1,560.42	1,695.13	1,536.04	1,829.17	1,844.44
Other Manufacturing Expenses	5,707.74	5,475.72	5,676.25	6,149.77	6,020.90
Selling &Admin Expenses	871.16	1,157.90	1,656.15	2,413.91	2,715.76
Miscellaneous Expenses	652.94	816.07	796.38	587.59	685.26
Pre-Op Exp Capitalized	-	-	-	-	-
Total Expenses	**94,699.28**	**102,026.01**	**107,471.08**	**133,729.58**	**170,096.07**
Operating Profit	6,370.15	9,120.00	10,319.44	7,154.90	7,405.76
PBDIT	7,550.38	10,886.06	12,035.49	8,632.15	9,960.24
Interest	1,571.41	815.78	470.86	604.17	1,052.79

PBDT	5,978.97	10,070.28	11,564.63	8,027.98	8,907.45
Depreciation	1,379.57	1,656.28	1,873.79	2,072.80	2,201.46
Profit Before Tax	4,599.40	8,414.00	9,690.84	5,955.18	6,705.99
Extra-ordinary items	-	-	-	-	-
PBT (Post Extra-ord Items)	4,599.40	8,414.00	9,690.84	5,955.18	6,705.99
Tax	1,714.74	2,299.11	2,686.02	1,063.80	1,790.87
Net Profit	2,884.66	6,114.89	7,004.82	4,891.38	4,915.12
Preference Dividend	-	-	-	-	-
Equity Dividend	856.54	2,258.16	2,452.83	1,693.62	1,460.02
Corporate Dividend Tax	-	239.44	314.27	237.29	204.77
Per share data (annualised)					
Shares in issue (lakhs)	7,786.70	7,786.70	11,680.10	11,680.10	11,680.10
Earning Per Share (Rs)	**37.05**	**75.45**	**57.28**	**39.85**	**40.33**
Equity Dividend (%)	110.00	290.00	210.00	145.00	125.00
Book Value (Rs)	196.63	243.08	197.32	222.47	250.88

Balance Sheet - IOCL					
	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
	12 mths	12 mths	12 mths	12 mths	12 mths
Sources of Funds					
Total Share Capital	778.67	778.67	1,168.01	1,168.01	1,168.01
Equity Share Capital	778.67	778.67	1,168.01	1,168.01	1,168.01
Preference Share Capital	-	-	-	-	-
Reserves	14,532.36	18,149.32	21,879.40	24,816.35	28,134.66
Revaluation Reserves	-	-	-	-	-
Networth	**15,311.03**	**18,927.99**	**23,047.41**	**25,984.36**	**29,302.67**
Secured Loans	4,616.95	4,701.13	3,175.21	2,491.23	7,793.54
Unsecured Loans	14,453.03	9,793.96	9,003.35	14,829.01	18,610.77
Total Debt	**19,069.98**	**14,495.09**	**12,178.56**	**17,320.24**	**26,404.31**
Total Liabilities	**34,381.01**	**33,423.08**	**35,225.97**	**43,304.60**	**55,706.98**

	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
	12 mths	12 mths	12 mths	12 mths	12 mths
Application Of Funds					
Gross Block	29,740.61	34,203.88	36,388.30	39,869.26	43,694.96
Less: Accum. Depreciation	10,960.82	12,584.56	14,341.69	16,488.47	18,671.54
Net Block	18,779.79	21,619.32	22,046.61	23,380.79	25,023.42
Capital Work in Progress	5,200.62	3,609.15	5,286.57	8,733.91	9,645.30
Investments	9,667.01	5,363.08	5,595.93	5,704.93	14,526.39
Inventories	10,454.55	14,009.38	14,951.08	19,504.82	24,277.79
Sundry Debtors	3,941.44	4,007.83	3,973.12	5,689.87	6,699.48
Cash and Bank Balance	669.59	946.06	698.07	446.32	744.17
Total Current Assets	15,065.58	18,963.27	19,622.27	25,641.01	31,721.44
Loans and Advances	7,377.16	9,929.40	11,410.29	11,639.17	10,699.66
Total CA, Loans & Advances	22,442.74	28,892.67	31,032.56	37,280.18	42,421.10
Deferred Credit	-	-	-	-	-
Fixed Deposits	6.77	10.17	13.59	13.15	8.37
Current Liabilities	18,601.13	20,339.16	20,928.14	24,565.62	28,377.36
Provisions	3,252.74	5,820.90	7,880.85	7,262.68	7,589.38
Total CL & Provisions	21,853.87	26,160.06	28,808.99	31,828.30	35,966.74
Net Current Assets	588.87	2,732.61	2,223.57	5,451.88	6,454.36
Miscellaneous Expenses	144.72	98.92	73.29	33.09	57.51
Total Assets	**34,381.01**	**33,423.08**	**35,225.97**	**43,304.60**	**55,706.98**
Contingent Liabilities	6,267.65	4,938.83	4,200.75	4,959.53	5,434.56
Book Value (Rs)	196.63	243.08	197.32	222.47	250.88

Income Statement - BPCL					
					Rs. Crore
	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
Income Head	12 mths	12 mths	12 mths	12 mths	12 mths
Sales Turnover	39,829.48	48,502.35	53,448.36	63,857.00	85,149.62
Excise Duty	4,559.04	5,316.92	5,610.67	5,979.60	9,616.33
Net Sales	35,270.44	43,185.43	47,837.69	57,877.40	75,533.29
Other Income	265.40	353.56	466.85	511.72	493.14
Stock Adjustments	(337.00)	1,466.68	(284.03)	1,586.25	754.40
Total Income	**35,198.84**	**45,005.67**	**48,020.51**	**59,975.37**	**76,780.83**
Expenditure					
Raw Materials	30,470.64	39,365.05	41,699.37	54,495.57	71,350.42
Power & Fuel Cost	45.41	21.64	21.02	19.69	47.71
Employee Cost	624.92	645.25	661.35	792.52	881.09
Other Manufacturing Expenses	269.26	326.21	316.46	368.63	495.43
Selling and Admin Expenses	1,259.39	1,495.27	1,535.19	1,741.41	1,943.76
Miscellaneous Expenses	414.30	430.92	485.69	465.56	640.24
Preop Exp Capitalized	-	-	-	-	-
Total Expenses	**33,083.92**	**42,284.34**	**44,719.08**	**57,883.38**	**75,358.65**
Operating Profit	1,849.52	2,367.77	2,834.58	1,580.27	929.04
PBDIT	2,114.92	2,721.33	3,301.43	2,091.99	1,422.18
Interest	307.40	247.37	105.35	140.11	247.62
PBDT	1,807.52	2,473.96	3,196.08	1,951.88	1,174.56
Depreciation	480.99	480.92	561.16	596.04	768.01
Profit Before Tax	1,326.53	1,993.04	2,634.92	1,355.84	406.55
Extra-ordinary items	-	-	-	-	2,084.32
PBT (Post Extra-ord Items)	1,326.53	1,993.04	2,634.92	1,355.84	(1,677.77)
Tax	476.70	743.01	940.35	390.04	114.90
Net Profit	**849.83**	**1,250.03**	**1,694.57**	**965.80**	**291.65**
Preference Dividend	2,613.28	2,919.29	3,019.71	3,387.81	4,008.23
Equity Dividend	-	-	-	-	-
Corporate Dividend Tax	330.00	450.00	525.00	375.00	90.39
Per share data (annualised)					
Shares in issue (lakhs)	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Earning Per Share (Rs)	**28.33**	**40.00**	**54.24**	**30.46**	**9.30**
Equity Dividend (%)	110.00	150.00	175.00	125.00	25.00
Book Value (Rs)	133.25	158.25	194.99	212.95	302.60

Balance Sheet - BPCL					
	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
	12 mths	12 mths	12 mths	12 mths	12 mths
Sources of Funds					
Total Share Capital	300.00	300.00	300.00	300.00	361.54
Equity Share Capital	300.00	300.00	300.00	300.00	300.00
Preference Share Capital	-	-	-	-	-
Reserves	3,697.38	4,447.43	5,549.72	6,088.43	8,777.88
Revaluation Reserves	-	-	-	-	-
Networth	**3,997.38**	**4,747.43**	**5,849.72**	**6,388.43**	**9,139.42**
Secured Loans	2,242.32	2,442.53	1,973.74	1,173.42	3,071.32
Unsecured Loans	1,606.42	843.33	715.98	2,708.19	5,302.28
Total Debt	**3,848.74**	**3,285.86**	**2,689.72**	**3,881.61**	**8,373.60**
Total Liabilities	**7,846.12**	**8,033.29**	**8,539.44**	**10,270.04**	**17,513.02**

	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
	12 mths	12 mths	12 mths	12 mths	12 mths
Application Of Funds					
Gross Block	9,280.61	9,973.29	11,157.96	12,668.84	17,376.84
Less: Accum. Depreciation	4,120.65	4,568.92	5,112.27	5,668.72	7,459.48
Net Block	5,159.96	5,404.37	6,045.69	7,000.12	9,917.36
Capital Work in Progress	441.65	961.85	1,407.79	1,348.55	1,168.11
Investments	2,339.44	2,106.21	1,976.97	1,677.14	3,877.42
Inventories	2,912.09	4,403.58	4,286.02	6,258.56	9,044.77
Sundry Debtors	982.90	842.85	821.07	854.58	1,315.89
Cash and Bank Balance	344.51	674.26	626.61	352.39	492.10
Total Current Assets	4,239.50	5,920.69	5,733.70	7,465.53	10,852.76
Loans and Advances	1,450.51	2,558.00	2,811.19	3,045.43	2,676.22
Total CA, Loans & Advances	5,690.01	8,478.69	8,544.89	10,510.96	13,528.98
Deferred Credit	-	-	-	-	-
Fixed Deposits	391.36	370.66	266.14	223.13	97.03
Current Liabilities	5,312.28	8,262.20	8,549.63	9,919.72	10,466.36
Provisions	472.66	655.63	886.27	347.01	512.49
Total CL & Provisions	5,784.94	8,917.83	9,435.90	10,266.73	10,978.85
Net Current Assets	(94.93)	(439.14)	(891.01)	244.23	2,550.13
Miscellaneous Expenses	-	-	-	-	-
Total Assets	**7,846.12**	**8,033.29**	**8,539.44**	**10,270.04**	**17,513.02**
Contingent Liabilities	1,442.69	1,447.54	1,649.87	1,767.19	2,028.80
Book Value (Rs)	133.25	158.25	194.99	212.95	302.6

Income Statement - HPCL					
					Rs. Crore
	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
Income Head	12 mths	12 mths	12 mths	12 mths	12 mths
Sales Turnover	44,600.70	54,474.28	57,827.07	65,680.93	77,484.93
Excise Duty	4,800.39	5,800.26	6,311.08	5,350.57	6,059.34
Net Sales	39,800.31	48,674.02	51,515.99	60,330.36	71,425.59
Other Income	252.23	350.71	455.67	332.66	337.31
Stock Adjustments	-258.47	1,187.90	357.5	34.87	1,408.96
Total Income	**39,794.07**	**50,212.63**	**52,329.16**	**60,697.89**	**73,171.86**
Expenditure					
Raw Materials	35,099.19	44,303.10	45,321.45	54,419.08	67,760.30
Power & Fuel Cost	93.36	107.40	104.10	114.34	126.52
Employee Cost	554.09	546.80	570.29	713.01	690.04
Other Manufacturing Expenses	235.36	290.97	327.89	411.83	490.09
Selling and Admin Expenses	1,625.56	1,659.36	2,155.10	2,469.34	2,701.96
Miscellaneous Expenses	149.12	168.26	208.90	189.67	270.14
Preop Exp Capitalized	-	-	-	-	-
Total Expenses	**37,756.68**	**47,075.89**	**48,687.73**	**58,317.27**	**72,039.05**
Operating Profit	1,785.16	2,786.03	3,185.76	2,047.96	795.50
PBDIT	2,037.39	3,136.74	3,641.43	2,380.62	1,132.81
Interest	294.74	153.02	55.65	81.64	158.74
PBDT	1,742.65	2,983.72	3,585.78	2,298.98	974.07
Depreciation	520.17	571.93	605.35	658.38	688.97
Profit Before Tax	1,222.48	2,411.79	2,980.43	1,640.60	285.10
Extra-ordinary items	(1,038.62)	-	-	-	-
PBT (Post Extra-ord Items)	2,261.10	2,411.79	2,980.43	1,640.60	285.10
Tax	434.50	874.43	1,076.49	363.27	(120.53)
Net Profit	**787.98**	**1,537.36**	**1,903.94**	**1,277.33**	**405.63**
Preference Dividend	2,657.49	2,772.79	3,366.28	3,898.19	4,278.75
Equity Dividend	-	-	-	-	-
Corporate Dividend Tax	339.33	678.66	746.81	509.00	101.80
Per share data (annualised)					
Shares in issue (lakhs)	3,388.10	3,388.30	3,389.00	3,389.30	3,389.40
Earning Per Share (Rs)	**23.26**	**43.06**	**53.36**	**35.59**	**11.55**
Equity Dividend (%)	100.00	200.00	220.00	150.00	30.00
Book Value (Rs)	174.07	197.12	228.47	249.04	257.74

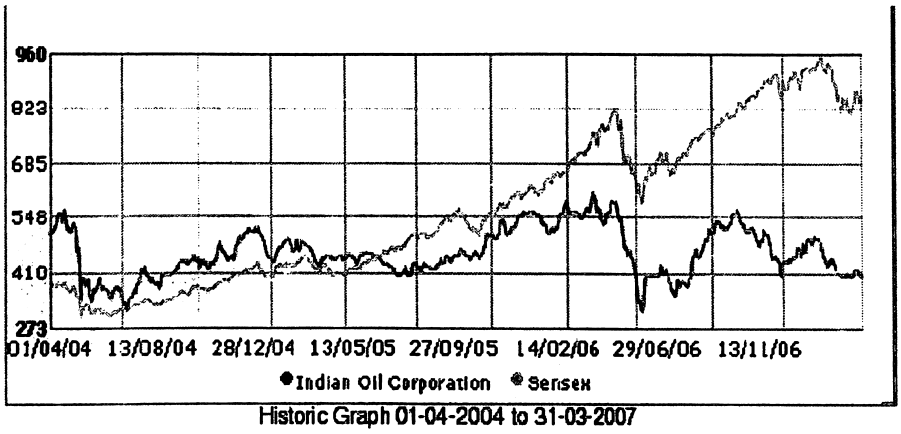
Balance Sheet - HPCL					
	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
	12 mths	12 mths	12 mths	12 mths	12 mths
Sources of Funds					
Total Share Capital	338.81	338.83	338.90	338.93	338.94
Equity Share Capital	338.81	338.83	338.90	338.93	338.94
Preference Share Capital	-	-	-	-	-
Reserves	5,558.87	6,340.02	7,403.91	8,101.92	8,396.80
Revaluation Reserves	-	-	-	-	-
Networth	**5,897.68**	**6,678.85**	**7,742.81**	**8,440.85**	**8,735.74**
Secured Loans	2,216.09	640.50	542.73	319.91	1,486.16
Unsecured Loans	955.45	725.43	1,158.07	1,865.44	5,177.67
Total Debt	**3,171.54**	**1,365.93**	**1,700.80**	**2,185.35**	**6,663.83**
Total Liabilities	**9,069.22**	**8,044.78**	**9,443.61**	**10,626.20**	**15,399.57**

	Mar '02	Mar '03	Mar '04	Mar '05	Mar '06
	12 mths	12 mths	12 mths	12 mths	12 mths
Application Of Funds					
Gross Block	10,244.85	10,754.32	11,387.43	12,393.17	13,479.25
Less: Accum. Depreciation	3,759.87	4,319.12	4,809.32	5,449.53	6,141.85
Net Block	6,484.98	6,435.20	6,578.11	6,943.64	7,337.40
Capital Work in Progress	304.38	347.68	496.14	786.84	2,363.88
Investments	2,133.42	2,015.22	2,048.42	1,756.84	4,027.64
Inventories	3,625.70	5,122.54	5,402.53	5,682.21	7,810.29
Sundry Debtors	784.39	862.37	1,000.29	1,048.61	1,392.26
Cash and Bank Balance	8.57	18.55	199.21	201.63	42.59
Total Current Assets	4,418.66	6,003.46	6,602.03	6,932.45	9,245.14
Loans and Advances	1,746.05	2,621.76	2,874.02	2,639.74	1,841.65
Total CA, Loans & Advances	6,164.71	8,625.22	9,476.05	9,572.19	11,086.79
Deferred Credit	-	-	-	-	-
Fixed Deposits	230.45	176.43	2.79	0.11	0.02
Current Liabilities	5,516.43	8,379.90	7,948.10	7,622.46	8,855.99
Provisions	501.84	998.64	1,207.01	810.85	560.15
Total CL & Provisions	6,018.27	9,378.54	9,155.11	8,433.31	9,416.14
Net Current Assets	146.44	(753.32)	320.94	1,138.88	1,670.65
Miscellaneous Expenses	-	-	-	-	-
Total Assets	**9,069.22**	**8,044.78**	**9,443.61**	**10,626.20**	**15,399.57**
Contingent Liabilities	1,502.54	1,686.68	1,906.70	2,243.62	3,275.96
Book Value (Rs)	174.07	197.12	228.47	249.04	257.74

Chapter VII

Technical Analysis

Indian Oil Corporation Ltd.
April 2004 – March 2007



Historic Graph 01-04-2004 to 31-03-2007

(For selected period)	BSE	NSE
High	622.00	621.95
Low	275.05	295.00

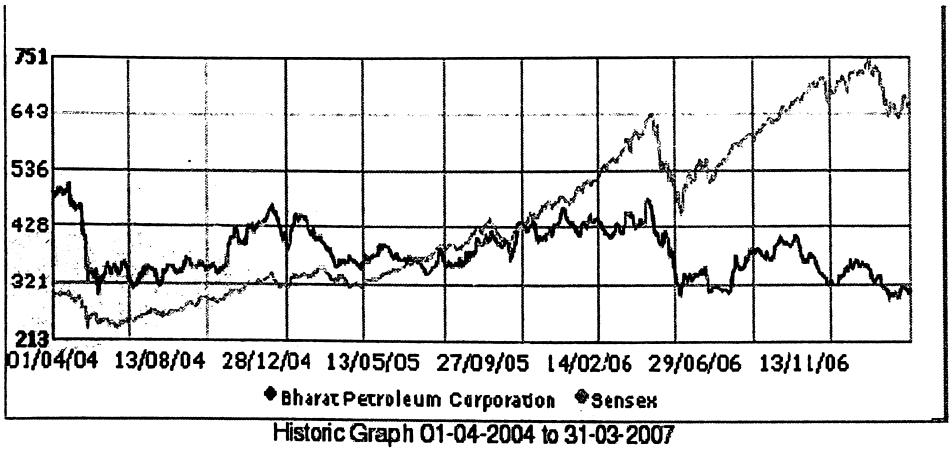
IOCL

	31/3/04	31/3/05	31/3/06	31/3/07	CAGR	Expected 31/03/08
MPS	496.25	438.55	584.15	399.60	(6.97)	***
EPS	75.45	57.28	39.85	40.33	(18.84)	32.73
Price Earning	6.58	7.66	14.66	9.91	14.63	14.63

Since PE = MPS/ EPS, or MPS = PE * EPS

For the Year 31.03.2008 the expected price of IOCL is Rs. Rs. 478.86

Bharat Petroleum Corporation Ltd.
April 2004 - March 2007



Historic Graph 01-04-2004 to 31-03-2007

(For selected period)	BSE	NSE
High	519.00	513.25
Low	215.05	230.00

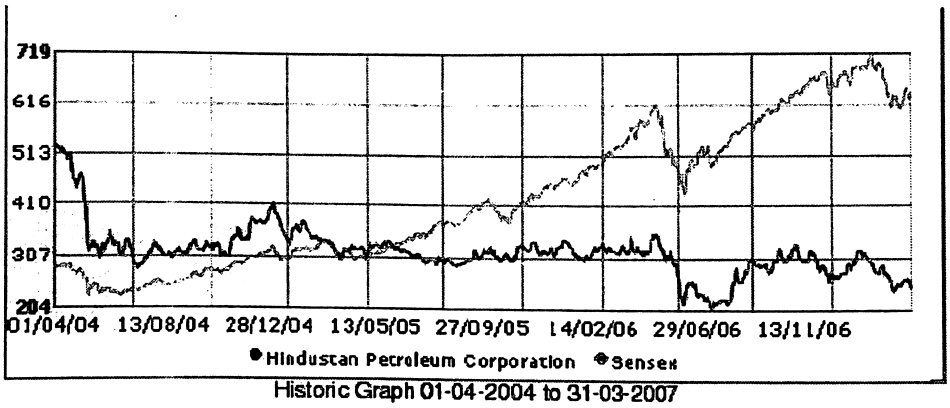
BPCL

	31/3/04	31/3/05	31/3/06	31/3/07	CAGR	Expected 31/03/08
MPS	478.8	353.8	426.05	302.25	(14.22)	***
EPS	40.00	54.24	30.46	9.30	(38.51)	5.72
Price Earning	11.97	6.52	13.99	32.50	39.51	39.51

Since PE = MPS/ EPS, or MPS = PE * EPS

For the Year 31.03.2008 the expected price of BPCL is Rs. 225.95

Hindustan Petroleum Corporation Ltd.
April 2004 – March 2007



Historic Graph 01-04-2004 to 31-03-2007

(For selected period)	BSE	NSE
High	538.50	539.00
Low	206.00	198.20

HPCL

	31/3/04	31/3/05	31/3/06	31/3/07	CAGR	Expected 31/03/08
MPS	507.60	305.95	322.90	246.70	(21.38)	***
EPS	43.06	53.36	35.59	11.55	(35.51)	7.45
Price Earning	11.79	5.73	9.07	21.36	21.91	21.91

Since PE = MPS/ EPS, or MPS = PE * EPS

For the Year 31.03.2008 the expected price of BPCL is Rs. 163.18

Chapter VII

Conclusion

From the Fundamental and Technical Analysis of financial and non financial data, the expected prices of the three stocks have been calculated. Given that this is a basic investigation into the expected price of the three stocks as on March 31, 2008, it is clear that the down stream segment of domestic petroleum industry is in for harder times, especially with crude prices likely to move southwards and remain in the region of USD 55 to USD 60.

The Primary Investment Advice for all the three domestic downstream companies is SELL.

The detailed recommendations are as follows:

Stock	Expected Price	Band		Range
IOCL	478.86	10%	Sell	526.75 (Resistance Level)
			Buy	430.98 (Support Level)
BPCL	225.95	10%	Sell	248.54 (Resistance Level)
			Buy	203.55 (Support Level)
HPCL	163.18	10%	Sell	179.50 (Resistance Level)
			Buy	146.86 (Support Level)