ESTIMATION OF RISK AND RETURN - A STUDY OF FUTURES AND OPTIONS ENVIRONMENT WITH RESPECT TO CRUDE OIL

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Abstract

In today's world when the annual income of each individual is increasing, there is a sudden inclination towards investing their savings to maximize it for the future. Investments in stock markets have become a preferred choice for these investors. Investments include investing in individual stocks i.e. shares of a particular company, mutual funds, or by entering into forwards and futures to trade in MCX index, Nifty or Sensex. Such investments in stock markets are associated with huge returns and risks as well. In this study the researcher make an attempt to find risk and return of Crude Oil Futures with different expiry dates from Febrearuy'2010 to September, 2010. This study take account of introduction to commodities trading in India including need and importance, scope, objectives ,methodology, industry profile, and theoretical framework of the study. The objectives of the present study include the examination of the daily price movement of Crude Oil Futures and identifying the risk and return of Crude Oil Futures. It can be noticed from the analysis presented and the relevant findings the average return on crude oil futures was negative in five out of eight months and the perfomance of crude oil futures is not favourable.The objectives of the study include the examination of the daily price movement of Crude Oil Futures with reference to Nifty and to find out risk and return of Crude Oil Futures with reference to Nifty. It can be noticed from the analysis presented and conclusions drawn that the average return on Crude Oil futures was not satisfactory and perfomance of the Crude Oil futures is not favourabale.

Introduction

Indian Commodity Futures Markets – Still Evolving…

Futures trading plays a key role in the marketing of a number of important agricultural and nonagricultural commodities as it provides the industrial and farming communities with a transparent price discovery platform, which also enables them to hedge their price risk and price volatility. The growth of Indian commodities futures trading towards an efficient, transparent and well-organized market has thrown open a window of opportunities and

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benefits to Indian producers and traders. Besides the primary benefits of its twin economic functions of price discovery and price risk management, commodity futures trading has also played an instrumental role in integrating various fragmented components of the commodity ecosystem, thus developing the overall infrastructure of agricultural commodities marketing in the country.

Origin

Forward/futures markets have come a long way since the days of the "rice tickets" in Japan and the first organised futures market in the form of the Chicago Board of Trade (CBOT) in the US. Forward contracts were the earliest form of commodity derivatives, and futures contracts have existed for centuries in one form or the other. In India, the earliest reference to "futures' can be found in Kautilya's Arthashastra, and the trade shot into prominence in the mid-nineteenth century when trading in agricultural commodity futures in the US became organised. After the first recorded instance of futures trading in "rice" in 17th century Japan, it took off in the US with "grain" contracts on CBOT (the first exchange to start there in 1848). Metals followed suit with contracts traded on the London Metal Exchange (LME) in 1878. Thereafter a number of commodity exchanges facilitating futures trading in numerous agriand non-agri commodities sprang up the world over. In India, organized commodity derivatives trading began with the Cotton Trade Association's debut in futures in 1875. Cotton merchants of Bombay took cues from the US and the UK, and to regulate futures trading the government in 1918 set up Cotton Contracts Committee, which was soon (1919) replaced by Cotton Contract Board. Futures trading in oilseeds were organized with the setting up of Gujarati Vyapari Mandali in 1900 in Bombay. And, over the years, the derivatives market developed in several other commodities in the country: raw jute and jute goods in Calcutta (1912), wheat in Hapur (1913) and then bullion in Bombay (1920). However, soon there were widespread fears that derivatives trading fuelled unnecessary speculation in essential commodities and was therefore detrimental to healthy functioning of the markets for the underlying commodities and, therefore, to farmers. To curb speculative activity in the cotton market, the Government of Bombay barred options trading in cotton in 1939. This was followed, in 1943, by a ban on forward trading in oilseeds and some other commodities such as food-grains, spices, vegetable oils, sugar and cloth. As, post-World War II, the Great Depression had its devastating effects on economies around the world during 1939-45 and the British rulers imposed controls over the financial markets, the Indian commodity futures market slipped into virtual extinction. It disintegrated and went into a

hibernation, only to continue negligibly in the form of over-the-counter (OTC) contracts. Almost a decade later, Parliament passed the Forward Contracts (Regulation) Act, 1952 (FCRA) to regulate commodity futures trading in the country. With the process of liberalization and globalization of the Indian economy and consequent reforms in its financial markets in the early 1990s, the Prof. K.N. Kabra-headed committee, set up by the Government in 1993 to examine the role of futures trading, made several recommendations including certain amendments to Forward Contracts (Regulation) Act 1952 and strengthening of the Forward Markets Commission (FMC). As it agreed to and acted upon most of these recommendations, the Government allowed futures trading in all the commodities recommended. The trade came into being after remaining in hibernation for nearly four decades, as realization that derivatives do perform a role in risk management dawned. The timing of this revival effort, from the four decades of restrictive government policies, turned out to be spot on, as the 1990s heralded an upswing in the commodity cycle, globally. FMC and the Government, on a fast-track mode, encouraged the idea of setting up commodity exchanges with state-of-the-art infrastructure and global best practices, and three national-level online exchanges — the Multi Commodity Exchange of India Ltd. (MCX), the National Commodity and Derivatives Exchange Ltd (NCDEX) and the National Multi- Commodity Exchange Ltd (NMCE) were born.

The Current Scenario

At present, 24 commodity futures exchanges are operational in India, which include 21 regional bourses and the three national-level players, with another three proposed exchanges on the cards. With the state-of the- art technology-powered modern, secure and efficient operational infrastructure these national exchanges are creating a near-perfect market situation with a much wider participation from the ecosystem stakeholders in a large number of domestic and global commodities during local and international timings. Since the reintroduction of commodity futures trading in India in 2003, the bulk of trading has been taking place on the three national exchanges. Despite being a late starter, MCX overtook other domestic exchanges and continues to be the No. 1 commodity futures exchange in the country (by numbers/lots of contracts traded) with a market share of 85% as on August 31, 2009. Speaking of the combined turnover of domestic commodities exchanges, what began with a notional value of Rs.1,29,364 crore in 2003-04 increased to Rs.36,77,226 crore in 2006-07. However, following a ban on some commodities in January 2007 and then in May 2008 as well as imposition of higher margins and stringent norms for trading, the growth in

trade volumes slowed down to Rs.40,65,983 crore in 2007-08. Nevertheless, the Indian commodity futures market staged a comeback in 2008-09 with a sharp increase in the turnover to Rs.52,48,956 crore, notwithstanding the ban. As the percentage of Gross Domestic Product (GDP) at market prices, the total trade accounted for 97.3% in 2006-07, which only marginally slipped to 94.1% in 2007-08 but shot up to 106.4% in 2008-09. In the current fiscal, for the April 1-August 31, 2009 period, the cumulative value of trade stands at Rs.27,29,248.80 crore, a y-o-y jump of 31%. And a major part of it was due to a surge in the trade volumes of agricultural commodities futures, which shot up by 53.5% to Rs. 405,671.40 crore, followed by the trade in the energy and industrial metals complex, which jumped by 27.5% to Rs.22,89,316.20 crore. After significant declines in the trade volumes of agricultural commodities in the previous two consecutive fiscals i.e. 2007-08 and 2008-09, the rise in agricultural commodities' trade in the current year is noteworthy.

The Indian commodity futures market has emerged as one of the fastest growing markets with a combined trade turnover of around Rs.52.48 trillion ($1.14 trillion), and the phenomenal growth (110% compounded annual average growth since the market's resurrection in 2003) is largely attributed to continuous outreach efforts and all-round innovation by its national-level electronic commodity futures exchanges, which includes launches of a slew of new products suitable to the fast-changing market dynamics and needs such as certified emission reduction (CER), aviation turbine fuel (ATF), gold guinea contracts, and so on. As per FMC estimates, total turnover of commodity futures trading is expected to cross Rs.60 lakh crore in the current fiscal (2009-10) and Rs.100 lakh crore by 2010-11, provided the FCRA amendment Bill is passed.

Given the growth in trading volumes and increasing integration of Indian economy with the rest of the world, the Indian commodity futures market has begun to be recognized among the top derivatives exchanges of the world. According to Futures Industry Association (FIA) and data put up by benchmark international exchanges, for the year ended March 31, 2009, MCX fares as the world No. 1 in Silver, No. 2 in Gold (followed by NYMEX and TOCOM) and No. 3 in Natural Gas, Crude Oil, Copper, and Zinc futures (by the number of contracts traded). Until August 31 of the current fiscal, MCX retained its leadership position with 85% of the total turnover of all the 24 exchanges.

Indian markets have recently thrown open a new avenue for retail investors and traders to participate: commodity derivatives. For those who want to diversify their portfolios beyond shares, bonds and real estate, commodities are the best option. Till some months ago, this wouldn't have made sense. For retail investors could have done very little to actually

invest in commodities such as gold and silver -- or oilseeds in the futures market. This was nearly impossible in commodities except for gold and silver as there was practically no retail avenue for punting in commodities. However, with the setting up of three multi-commodity exchanges in the country, retail investors can now trade in commodity futures without having physical stocks!

Commodities actually offer immense potential to become a separate asset class for market-savvy investors, arbitrageurs and speculators. Retail investors, who claim to understand the equity markets may find commodities an unfathomable market. But commodities are easy to understand as far as fundamentals of demand and supply are concerned. Retail investors should understand the risks and advantages of trading in commodities futures before taking a leap. Historically, pricing in commodities futures has been less volatile compared with equity and bonds, thus providing an efficient portfolio diversification option.

In fact, the size of the commodities markets in India is also quite significant. Of the country's GDP of Rs 13,20,730 crore (Rs 13,207.3 billion), commodities related (and dependent) industries constitute about 58 per cent. Currently, the various commodities across the country clock an annual turnover of Rs 1, 40,000 crore (Rs 1,400 billion). With the introduction of futures trading, the size of the commodities market grows many folds here on.

Like any other market, the one for commodity futures plays a valuable role in information pooling and risk sharing. The market mediates between buyers and sellers of commodities, and facilitates decisions related to storage and consumption of commodities. In the process, they make the underlying market more liquid. An investor is having three options to trade in Commodity Futures viz., the National Commodity and Derivative Exchange, the Multi Commodity Exchange of India Ltd and the National Multi Commodity Exchange of India Ltd. All three have electronic trading and settlement systems and a national presence.

Several already-established equity brokers have sought membership with NCDEX and MCX. The likes of Refco Sify Securities, SSKI (Sharekhan) and ICICI commtrade (ICICIdirect), ISJ Comdesk (ISJ Securities) and Sunidhi Consultancy are already offering commodity futures services. Some of them also offer trading through Internet just like the way they offer equities. The investor can also get a list of more members from the respective exchanges and decide upon the broker the investor want to choose from.

An investor can invest as low as Rs 5,000. All the investor need is money for margins payable upfront to exchanges through brokers. The margins range from 5-10 per cent of the value of the commodity contract. While investors can start off trading at Rs 5,000 with ISJ

Commtrade other brokers have different packages for clients. For trading in bullion, that is, gold and silver, the minimum amount required is Rs 650 and Rs 950 for on the current price of approximately Rs 65,00 for gold for one trading unit (10 gm) and about Rs 9,500 for silver (one kg).

The prices and trading lots in agricultural commodities vary from exchange to exchange (in kg, quintals or tonnes), but again the minimum funds required to begin will be approximately Rs 5,000. All the exchanges have both systems - cash and delivery mechanisms. The choice lies with the the investor. If an investor want his/her contract to be cash settled, he/she to indicate at the time of placing the order. If the investor plan to take or make delivery, there is a need to have the required warehouse receipts. The option to settle in cash or through delivery can be changed as many times as one wants till the last day of the expiry of the contract.

Crude oil is the most widely used energy material in the world. Crude oil is a mixture of hydrocarbons that exists in a liquid phase in natural underground reservoirs. Oil and gas account for about 60 per cent of the total world's primary energy consumption. Crude oil - as petroleum directly out of the ground is called - is a remarkably varied substance, both in its use and composition. Crude oil is formed from the preserved remains of prehistoric zooplankton and algae, which have been settled to the sea (or lake) bottom in large quantities under anoxic conditions. It was formed over millions of years from the remains of tiny aquatic plants and animals that lived in ancient seas due to compression and heating of ancient organic materials over geological time. The oldest oil-bearing rocks date back to more than 600 million years, the youngest being as old as about 1 million years.

India's crude oil basket has crossed US$84 per barrel after crude oil futures rose above US$87 in New York trading amid growing optimism over the health of the US economy, the world's largest. The US is the world's biggest energy consumer and so any improvement in its prospects is bound to increase fuel demand.

Oil climbed above US$87 a barrel yesterday for the first time in almost 18 months as last week's upbeat jobs report and a better-than-expected service sector gauge raised hopes of a faster growth in the US economy. Crude oil for May delivery was at US$86.89 a barrel, up 5 cents, in electronic trading on the New York Mercantile Exchange at 1:41 p.m. Singapore time. Yesterday, the contract rose 22 cents to settle at US$86.84. Futures reached US$87.09, the highest intraday price since Oct. 9, 2008. Oil prices have risen 9.5% this year.

US stocks finished Tuesday's session with modest gains, helped by continued assurances from the Federal Reserve that easy money conditions would continue for an

extended period of time. Fed officials saw signs of a strengthening recovery though high unemployment and tight credit remain the main pressure points. Some Fed officials also warned of raising rates too soon, according to minutes of the March meeting released yesterday. Separately, the Energy Department upgraded its 2010 price estimate on forecasts that the US economy will rebound through the end of the year.

West Texas Intermediate oil, the US benchmark, will average US$80.74 a barrel this year, up from last month's forecast of US$80.06, according to the monthly Short-Term Energy Outlook. That is 31% higher than the 2009 average price of US$61.66. US gasoline inventories fell 2.96 million barrels to 220.2 million, the industry-funded American Petroleum Institute (API) said yesterday. Distillate fuel supplies, including heating oil and diesel, climbed 723,000 barrels to 148.3 million, ending a six-week drawdown. Crude oil stockpiles rose 1.07 million barrels last week to 353 million, the API report showed.

Crude oil futures prices rose by Rs 18 to Rs 3,887 per barrel as traders created fresh positions on the back of firming global trend. Trading sentiment turned strong here after reports that crude oil traded near USD 87 a barrel in New York. Crude oil climbed above USD 87 yesterday for the first time in almost 18 months on reports of growth in American jobs and service industries. At the Multi Commodity Exchange counter, crude oil for May contract rose by Rs 18, or 0.47 per cent, to Rs 3,887 per barrel with an open interest of 3,089 lots. The oil for delivery in April also moved up by Rs 17, or 0.44 per cent, to Rs 3,861 per barrel in 16,065 lots. Market analysts said fresh buying by traders in tandem with a firming global trend mainly led to rise in crude oil prices at futures market. Meanwhile, crude oil for May delivery was up four cent at USD 86.88 a barrel on the New York Mercantile Exchange.

Crude oil futures prices rose for the second straight day in futures trading today by adding Rs 9 to Rs 3,852 per barrel on sustained buying amid firming global trend. At the Multi Commodity Exchange, crude oil for April contract rose by Rs 9, or 0.23 per cent to Rs 3,852 per barrel with an open interest of 15,932 lots.

Similarly, the oil for delivery in May contract edged up by Rs 8, or 0.21 per cent to Rs 3,876 per barrel in 2,775 lots. Trading sentiments remained firm as crude oil traded nearly the highest in 17 months in New York as growth in the US service industries signalled the economy is recovering from the worst recession since the 1930s.

Traders said sustained buying in tandem with a firming global trend mainly led to rise in crude oil prices at futures market. Meanwhile, crude oil rose by 2.10 per cent to 86.62 dollar a barrel in New York yesterday, a 17-month high.

Crude oil prices rose by Rs 45 or 1.17 per cent to Rs 3,900 per barrel in futures trading on Monday as traders indulged in creating fresh positions on the back of firming global trend. At the Multi Commodity Exchange, crude oil for far-month July contract shot up by Rs 45 or 1.17 per cent to Rs 3,900 per barrel, with an open interest of 23 lots.

The oil for delivery in June contract also inched up by Rs 23 or 0.60 per cent to Rs 3,881 per barrel in 112 lots, while April contract gained Rs 3 or 0.08 per cent to Rs 3,833 per barrel in 16,604 lots. Traders said, fresh buying by traders in tandem with a firming global trend mainly pushed up crude oil prices at futures market. Meanwhile, New York's crude for delivery in May was up by 84 cents to USD 85.71 a barrel.

Need and Importance of the Study

The present study on Commodity Derivates with reference to Crude oil Futures is very much appreciable on the grounds that it gives deep insights about commodities market. It would be essential for the perfect way of trading commodities. The study elucidates the role of crude oil futures in Indian financial markets. Studies of this type are more useful to academicians and scholars to make further insights into the trading of commodities. An investor can choose the right underlying for investment, which is risk free. The study included the changes in daily price movement and buying and selling signals to the selected commodities. This helps the investor to take right decisions regarding trading in commodities.

Scope of the Study

The present study concentrates on the risk and return of commodity futures with reference to Crude Oil traded on Multi Commodity Stock Exchange during the period Jan-09 to Feb-10. This study helps the investors who invest in Crude Oil commodity futures as a means of investment alternative. There are several factors which may affect the risk and return of Crude Oil Commodity futures. This study gives a glance the past performance of currency futures and the trend of the market. This study covers the movement of price changes.

Objectives of the Study

The following are the major objectives of the study.

1. To observe the daily price movement of Crude Oil Futures.
2. To find out risk and return of Crude Oil Futures.

3. To find out the relationship between the returns of the Index and the select Commodity.

Methodology of the Study

The Methodology of the study consists of Source of data collection, Statistical tool and Data Analysis.

Source of data collection: The data had been collected through Primary and Secondary sources.

- **Primary Sources :**

The data has been collected from the Karvy House.

- **Secondary Sources :**

The data had been collected through Books, Journals and Websites.

Data Analysis Tools: The data had been analyzed using statistical tools such as weighted average, standard deviation and correlation.

Methodolgy:

Formula for Calculation of Return

An investor's earning is the change in the market price of the commodity. The investment amount is equal to the market price of the commodity at the beginning of the year. The investor's return can be calculated using the following formula:

Return (R) = (Closing Market Price - Opening Market Price)/ Opening Market Price.

Steps for Calculation of Risk (Variability in Returns)

Standard deviation is a widely used measure of the variability or dispersion in returns (risk). Standard deviation is a statistical measure of spread or variability. The standard deviation is the root mean square (RMS) deviation of the values from their arithmetic mean. Variance is the square of the standard deviation. It is a measure of the degree of spread among a set of values; a measure of the tendency of individual values to vary from the mean value. The following are the various steps in calculation of standard deviation.

Step 1 : Calculate the mean of returns (Σ R/n)

Where $\Sigma R = R_1 + R_2 + R_3 + \ldots\ldots\ldots\ldots + R_n$

n = number of observations

R_1 = return in the commodity

Step 2 : Subtract each return from the average return (mean) to find out deviations

Step 3 : Square the deviations and find out the sum.

Step 4 : Divide the sum of the squared deviations by n-1 (one less than the total number of observations). This is the variance

Step 5 : Find square root of the variance to get standard deviation.

Limitations of the Study

The limitations of the study are:

1. The sample size chosen is limited to Crude Oil futures only.

2. The limited period of study may not be detailed and full-fledged in all aspects.

Prevailing Duties & Levies on Crude Oil

Particulars	**Rates**
Basic Customs Duty	10%
Cess	Rs.1800 per metric tonne
NCCD*	Rs.50 per metric tonne
Education cess	2%
Octroi	3%
Wharfage	Rs.57 per metric tonne

International Exchanges Dealing In Crude Oil Futures

- The New York Mercantile Exchange (NYMEX).
- The International Petroleum Exchange of London (IPE).
- The Tokyo Commodity Exchange (TOCOM).

International Oil Price Variation

Particular	**Frequency of % variation**			
	0 to 3.1%	3.2 to 6.2%	6.3 to 9.3%	More than 9.3%
Refiner acquisition cost for Crude oil (composite) - Average monthly price from Apr 01 to Mar 04	8	16	4	>8

Industry Profile

History of Karvy Group

The Karvy group was formed in 1983 at Hyderabad, India. Karvy ranks among the top player in almost all the fields it operates. Karvy Computershare Limited is India's largest Registrar and Transfer Agent with a client base of nearly 500 blue chip corporates, managing over 2 crore accounts. Karvy Stock Brokers Limited, member of National Stock Exchange of India and the Bombay Stock Exchange, ranks among the top 5 stock brokers in India. With over 6,00,000 active accounts, it ranks among the top 5 Depositary Participant in India, registered with NSDL and CDSL. Karvy Comtrade, Member of NCDEX and MCX ranks among the top 3 commodity brokers in the country. Karvy Insurance Brokers is registered as a Broker with IRDA and ranks among the top 5 insurance agent in the country. Registered with AMFI as a corporate Agent, Karvy is also among the top Mutual Fund mobilizer with over Rs. 5,000 crores under management. Karvy Realty Services, which started in 2006, has quickly established itself as a broker who adds value, in the realty sector. Karvy Global offers niche off shoring services to clients in the US. Karvy has 575 offices over 375 locations across India and overseas at Dubai and New York. Over 9,000 highly qualified people staff Karvy.

Organisation

Karvy was started by a group of five chartered accountants in 1979. The partners decided to offer, other than the audit services, value added services like corporate advisory services to their clients. The first firm in the group, Karvy Consultants Limited was incorporated on 23rd July, 1983. In a very short period, it became the largest Registrar and Transfer Agent in India. This business was spun off to form a separate joint venture with Computershare of Australia, in 2005. Karvy's foray into stock broking began with marketing IPOs, in 1993. Within a few years, Karvy began topping the IPO procurement league tables and it has consistently maintained its position among the top 5. Karvy was among the first few members of National Stock Exchange, in 1994 and became a member of The Stock Exchange, Mumbai in 2001. Dematerialization of shares gathered pace in mid-90s and Karvy was in the forefront educating investors on the advantages of dematerializing their shares. Today Karvy is among the top 5 Depositary Participant in India. While the registry business is a 50:50 Joint Venture with Computershare of Australia, we have equity participation by ICICI Ventures Limited and Barings Asia Limited, in Karvy Stock Broking Limited.

Karvy has always believed in adding value to services it offers to clients. A top-notch research team based in Mumbai and Hyderabad supports its employees to advise clients on their investment needs. With the information overload today, Karvy's team of analysts help investors make the right calls, be it equities, mf, insurance. On a typical working day Karvy:

- Has more than 25,000 investors visiting our 575 offices
- Publishes / broadcasts at least 50 buy / sell calls
- Attends to 10,000+ telephone calls
- Mails 25,000 envelopes, containing Annual Reports, dividend cheques / advises, allotment / refund advises
- Executes 150,000+ trades on NSE / BSE
- Executes 50,000 debit / credit in the depositary accounts
- Advises 3,000+ clients on the investments in mutual funds.

Where Karvy Stands in the Market?

KARVY is a legendary name in financial services, Karvy's credit is defined by its mission to succeed, passion for professionalism, excellent work ethics and customer centric values. Today KARVY is well known as a premier financial services enterprise, offering a broad spectrum of customized services to its clients, both corporate and retail. Services that KARVY constantly upgrade and improve are because of company's skill in leveraging technology. Being one of the most techno-savvy organizations around helps company to deliver even more cost effective financial solutions in the shortest possible time.

What bears ample testimony to Karvy's success is the faith reposed in company by valued investors and customers, all across the country. Indeed, with Karvy's wide network touching every corner of the country, even the most remote investor can easily access Karvy's services and benefit from company's expert advice.

Karvy Group

Karvy Consultants Limited

Karvy Securities Limited

Karvy Investor Services Limited

Karvy Stock broking Limited

Karvy Computer Shares Pvt. Ltd.

Quality Objectives of Karvy

- Build in-house processes that will ensure transparent and harmonious relationships with its clients and investors to provide high quality of services.
- Establish a partner relationship with its investor service agents and vendors that will help in keeping up its commitments to the customers.
- Provide high quality of work life for all its employees and equip them with adequate knowledge & skills so as to respond to customer's needs.
- Continue to uphold the values of honesty & integrity and strive to establish unparalleled standards in business ethics.
- Use state-of-the art information technology in developing new and innovative financial products and services to meet the changing needs of investors and clients.
- Strive to be a reliable source of value-added financial products and services and constantly guide the individuals and institutions in making a judicious choice of same.
- Strive to keep all stake-holders (shareholders, clients, investors, employees, suppliers and regulatory authorities) proud and satisfied.

Mission Statement of 'Karvy'

An organization exists to accomplish something or achieve something. The mission statement indicates what an organization wants to achieve. The mission statement may be changed periodically to take advantage of new opportunities or respond to new market conditions. Karvy's mission statement is **"To Bring Industry, Finance and People together."** Karvy is work as intermediary between industry and people. Karvy work as investment advisor and helps people to invest their money same way Karvy helps industry in achieving finance from people by issuing shares, debentures, bonds, mutual funds, fixed deposits etc. Company's mission statement is clear and thoughtful which guide geographically dispersed employees to work independently yet collectively towards achieving the organization's goals.

Vision of Karvy

Company's vision is crystal clear and mind frame very directed. **"To be pioneering financial services company. And continue to grow at a healthy pace, year after year, decade after decade."** Company's foray into IT-enabled services and internet business has

provided an opportunity to explore new frontiers and business solutions. To build a corporate that sets benchmarks for others to follow.

Karvy Values:

Integrity

Responsibility

Reliability

Unity

Understanding

Excellence

Confidentiality

Karvy has adequate internal control systems and procedures commensurate with the size nature of its business. These system and procedures provide reasonable assurance of maintenance of proper accounting records, reliability of financial information, protection of resources and safeguarding of assets against unauthorized use.

Karvy Services – An Overview

1. Stock broking
2. Demat services
3. Investment product distribution
4. Investment advisory services
5. Corporate finance & Merchant banking
6. Insurance
7. Mutual fund services
8. IT enabled services
9. Registrars & Transfer agents
10. Loans

Data Analysis and Interpretation

A stock index tracks changes in the value of a hypothetical portfolio of stocks. The weight of a stock in the portfolio equals the proportion of the portfolio invested in the stock. The percentage increase in the stock index over a small interval of time is set to equal to the percentage increase in the value of the hypothetical portfolio. Dividends are usually not

included in the calculation so that index tracks the capital gain/loss from investing in the portfolio.

If the hypothetical portfolio of stocks remains fixed, the weights assigned to individual stocks in the portfolio do not remain fixed. When the price of one particular stock in the portfolio rises more sharply than others, more weight is automatically given to that stock. Some indices are constructed from a hypothetical portfolio consisting of one of each of a number of stocks. The weights assigned to the stocks are then proportional to their market prices, with adjustments being made when there are stock splits. Other indices are constructed so that weights are proportional to market capitalization i.e the product of stock price and number of shares outstanding. The underlying portfolio is then automatically adjusted to reflect stock splits, stock dividends and new equity shares.

The vast majority of futures contracts do not lead to delivery. The reason is that most traders choose to close out their positions prior to the delivery period specified in the contract. Closing out a position means entering into the opposite trade to the original one. Delivery is so unusual that traders sometimes forget how the delivery process works. The contract size specifies the amount of the asset that has to be delivered under one contract. This is an important decision for the exchange. If the contract size is too large, many investors who wish to hedge relatively small exposures or who wish to take relatively small speculative positions will be unable to use the exchange. On the other hand, if the contract size is too small, trading may be expensive as there is a cost associated with each contract traded. The correct size for a contract clearly depends on the likely user.

The place where delivery will be made must be specified by the exchange. This is particularly important for commodities that involve significant transportation costs. When alternative delivery locations are specified, the price received by the party with the short position is sometimes is adjusted according the location chosen by that party. The price tends to the higher for delivery locations that are relatively far from the main sources of the commodity.

In the following tables 1 and 2 the data relating to crude oil futures traded contracts in lots and value is given. It can be observed that the quantum of traded contracts increased from a low of 51,57,811 lots in 2005 to a high of 4,10,91,240 lots in 2009. It shows the genuine involvement and interest of investors and traders in crude oil futures

Table No: 1

Crude Oil Futures Traded Contracts (In Lots) and Value (Rs. In Lakhs)

Year	Traded Contracts (in Lots)	Value (Rs. In Lakhs)
2005	5157811	13770885.61
2006	4466538	13032562.32
2007	13938813	42113266.31
2008	20507001	85947248.64
2009	41091240	121015141.7
2010	3831858	13610778.05

Source : www.mcxindia.com

It can be observed that the crude oil futures traded contracts was stood at 27,031 lots in February 2005 rose up to 10,19,288 lots in August, 2005. An all time high of 43,79,692 lots traded in the month of March, 2009. It is also observed a variable trend in the number crude oil futures traded contracts from February, 2005 to February, 2010

Table No: 2

Crude Oil Futures Traded Contracts (In Lots)

Month	2005	2006	2007	2008	2009	2010
Jan	--	327377	1033732	1272840	3774301	2033487
Feb	27031	425591	1040775	1188877	3434198	1798371
Mar	56075	474103	1220169	1251741	4379692	--
Apr	117502	234414	922023	1216976	3650692	--
May	183038	200439	933112	1745803	3389258	--
Jun	417471	129799	1014159	1968091	3430757	--
Jul	763996	175149	1175924	1877485	4122330	--
Aug	1019288	243508	1378084	1485585	3364276	--
Sep	933607	429136	1003894	1900925	2867961	--
Oct	723130	610963	1392318	1598334	3065883	--
Nov	540111	629447	1388335	1883187	2968073	--
Dec	376562	586612	1436288	3117157	2643819	--

Source : www.mcxindia.com

A futures contact is referred to by its delivery month. The exchange must specify the precise period during the month when delivery can be made. For many futures contracts, the delivery period is the whole month. The delivery month vary from contract to contract and are chosen by the exchange to meet the needs of market operations. At any time, contracts trade for the closet delivery month and a number of subsequent delivery months. The exchange specifies when trading in a particular month's contract will begin. The exchange also specifies the last day on which trading can take place for a given contract. Trading generally ceases a few days before the last day on which delivery can be made.

Risk and return are the two key determinants of an investment decision. Risk, in simple terms is associated with the variability of the rates of return from an investment. Risk is measured by one of the measures of dispersion such as co-efficient of range, variance and standard deviation. The most important tenet of finance literature is that there is a trade-off between risk and return. The risk-return relationship requires that the return on a security should be commensurate with its riskiness.

The risk and return of crude oil futures with reference to their expiry date is analysed in the following pages. Table No.3 portrays the risk and return of crude oil futures which expires in the month of February, 2010. The average return of crude oil futures is 0.01 percent and the variability in returns is 1.45 percent. The return on crude oil futures followed a variable trend till the expiry. The price movement is minimal and varied between Rs. 3758 and Rs.3705. The returns are varied between a high positive return of 3.19 percent and a negative return 4.29 percent during the period. The variability in returns is negligible being small changes in the prices.

Table No: 3

Risk and Return of Crude Oil Futures - Expiry Month Feb 2010

Date	Open (Rs)	Close (Rs)	RETURN (%)
1-Jan-10	3758	3756	-0.05
2-Jan-10	3759	3762	0.08
4-Jan-10	3757	3798	1.09
5-Jan-10	3801	3803	0.05
6-Jan-10	3803	3816	0.34
7-Jan-10	3825	3812	-0.34
8-Jan-10	3805	3824	0.50
9-Jan-10	3822	3818	-0.10
11-Jan-10	3818	3776	-1.10
12-Jan-10	3770	3733	-0.98
13-Jan-10	3714	3678	-0.97
14-Jan-10	3664	3664	0.00
15-Jan-10	3656	3621	-0.96
16-Jan-10	3615	3610	-0.14
18-Jan-10	3600	3606	0.17
19-Jan-10	3610	3610	0.00
20-Jan-10	3616	3592	-0.66
21-Jan-10	3601	3536	-1.81
22-Jan-10	3530	3482	-1.36
23-Jan-10	3475	3445	-0.86
25-Jan-10	3455	3477	0.64
27-Jan-10	3469	3445	-0.69
28-Jan-10	3434	3416	-0.52
29-Jan-10	3430	3412	-0.52
30-Jan-10	3409	3378	-0.91
1-Feb-10	3374	3435	1.81
2-Feb-10	3444	3554	3.19
3-Feb-10	3550	3573	0.65
4-Feb-10	3565	3412	-4.29
5-Feb-10	3420	3319	-2.95
6-Feb-10	3343	3374	0.93
8-Feb-10	3362	3364	0.06
9-Feb-10	3358	3436	2.32
10-Feb-10	3426	3466	1.17
11-Feb-10	3471	3494	0.66
12-Feb-10	3475	3412	-1.81
13-Feb-10	3424	3433	0.26
15-Feb-10	3440	3432	-0.23
16-Feb-10	3434	3543	3.17
17-Feb-10	3550	3559	0.25
18-Feb-10	3554	3628	2.08
19-Feb-10	3625	3705	2.21
AVERAGE RETURN (%)			0.01
RISK (VARIABLITY IN RETURNS) %			1.45

Source : www.mcxindia.com

Figure No:1

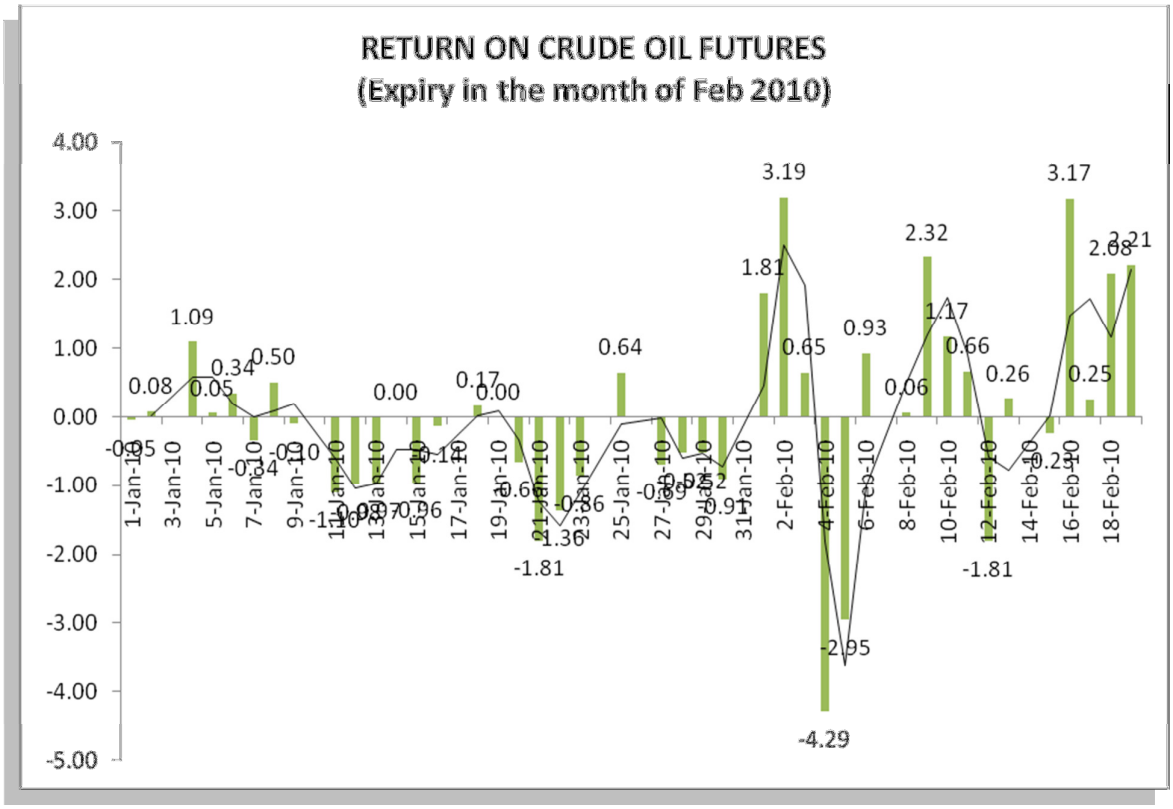

Table No.4 portrays the risk and return of crude oil futures which expires in the month of March, 2010. The average return of crude oil futures is -0.05 percent and the variability in returns is 1.36 percent. The average return is negative for the futures which expire in the month of March 2010. It is an unfavorable sign for the investors who trade in crude oil futures. The return on crude oil futures followed a variable trend till the expiry. The futures price of crude oil varied between Rs. 3789 and Rs.3649. The returns are varied between a high positive return of 3.24 percent and a negative return 3.88 percent during the period. The crude oil futures are reasonably risky.

Table No: 4
Risk and Return of Crude Oil Futures - Expiry Month Mar 2010

Date	Open(Rs)	Close(Rs)	RETURN (%)
1-Jan-10	3789	3789	0.00
2-Jan-10	3790	3791	0.03
4-Jan-10	3795	3825	0.79
5-Jan-10	3839	3830	-0.23
6-Jan-10	3836	3844	0.21
7-Jan-10	3848	3840	-0.21
8-Jan-10	3831	3851	0.52
9-Jan-10	3843	3843	0.00
11-Jan-10	3858	3807	-1.32
12-Jan-10	3790	3769	-0.55
13-Jan-10	3750	3714	-0.96
14-Jan-10	3697	3705	0.22
15-Jan-10	3780	3667	-2.99
16-Jan-10	3655	3654	-0.03
18-Jan-10	3645	3640	-0.14
19-Jan-10	3638	3640	0.05
20-Jan-10	3655	3624	-0.85
21-Jan-10	3623	3569	-1.49
22-Jan-10	3550	3510	-1.13
23-Jan-10	3497	3475	-0.63
25-Jan-10	3488	3506	0.52
27-Jan-10	3510	3477	-0.94
28-Jan-10	3468	3446	-0.63
29-Jan-10	3460	3439	-0.61
30-Jan-10	3420	3408	-0.35
1-Feb-10	3400	3465	1.91
2-Feb-10	3483	3583	2.87
3-Feb-10	3587	3599	0.33
4-Feb-10	3580	3441	-3.88
5-Feb-10	3450	3345	-3.04
6-Feb-10	3345	3404	1.76
8-Feb-10	3390	3391	0.03
9-Feb-10	3385	3463	2.30
10-Feb-10	3446	3492	1.33
11-Feb-10	3502	3521	0.54
12-Feb-10	3502	3442	-1.71
13-Feb-10	3453	3460	0.20
15-Feb-10	3469	3461	-0.23
16-Feb-10	3459	3571	3.24
17-Feb-10	3580	3586	0.17
18-Feb-10	3580	3647	1.87
19-Feb-10	3640	3690	1.37
20-Feb-10	3695	3711	0.43
22-Feb-10	3722	3699	-0.62
23-Feb-10	3700	3657	-1.16
24-Feb-10	3664	3689	0.68
25-Feb-10	3695	3609	-2.33
26-Feb-10	3613	3668	1.52
27-Feb-10	3668	3669	0.03
1-Mar-10	3680	3624	-1.52
2-Mar-10	3618	3702	2.32
3-Mar-10	3690	3687	-0.08
4-Mar-10	3688	3688	0.00
5-Mar-10	3691	3724	0.89
6-Mar-10	3729	3725	-0.11
8-Mar-10	3735	3707	-0.75
9-Mar-10	3705	3723	0.49
10-Mar-10	3722	3711	-0.30
11-Mar-10	3709	3740	0.84
12-Mar-10	3739	3701	-1.02
13-Mar-10	3700	3704	0.11
15-Mar-10	3695	3645	-1.35
16-Mar-10	3633	3719	2.37
17-Mar-10	3728	3746	0.48
18-Mar-10	3749	3747	-0.05
19-Mar-10	3739	3649	-2.41
AVERAGE RETURN (%)			-0.05
RISK (VARIABLITY IN RETURNS) %			1.36

Figure No: 2

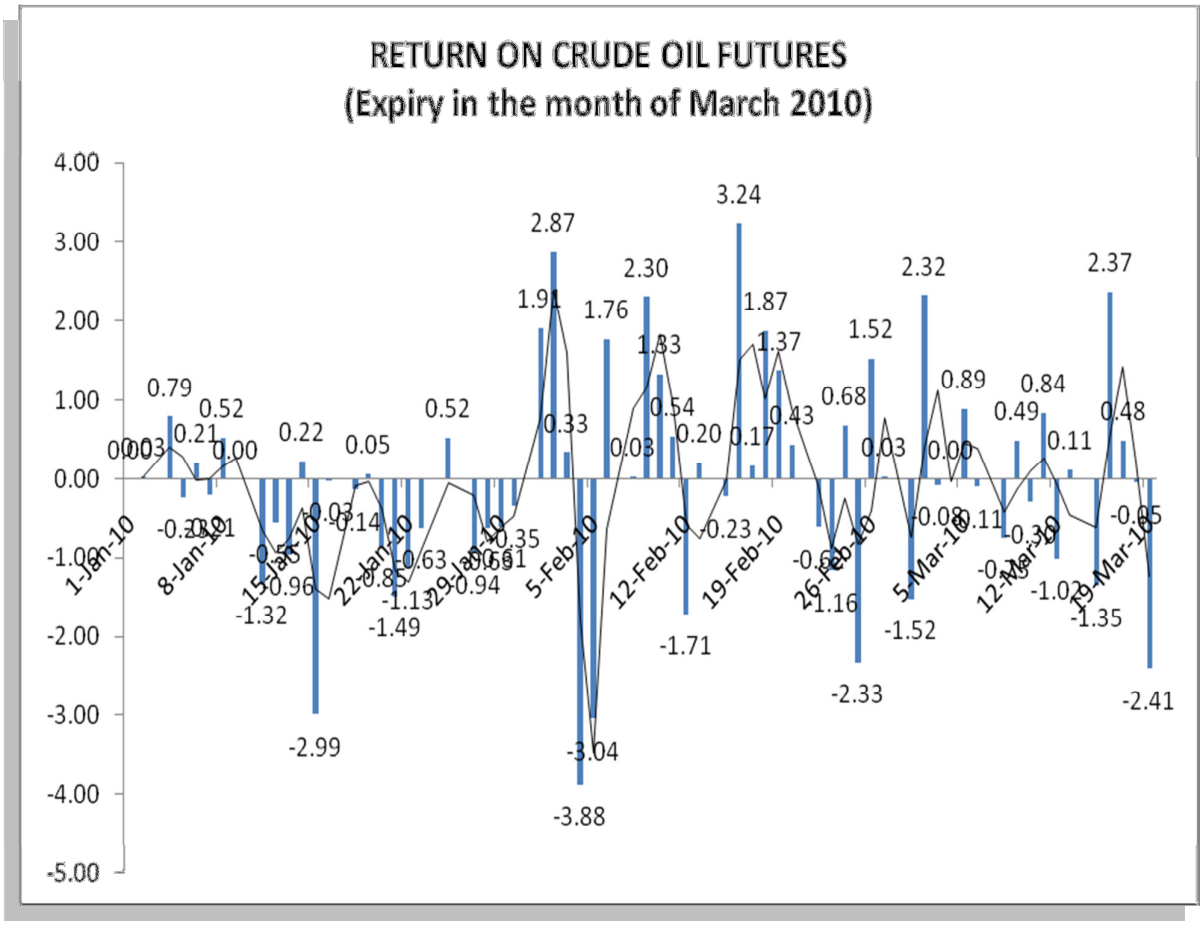

Table No.5 portrays the risk and return of crude oil futures which expires in the month of April, 2010. The average return of crude oil futures is -0.03 percent and the variability in returns is 1.13 percent. The average return is negative for the futures which expire in the month of April, 2010. It is an unfavorable sign for the investors who trade in crude oil futures. The return on crude oil futures followed a variable trend till the expiry. The futures price of crude oil varied between Rs. 3835 and Rs.3627. The returns are varied between a high positive return of 2.83 percent and a negative return 3.53 percent during the period. The crude oil futures are reasonably risky.

Table No: 5
Risk and Return of Crude Oil Futures - Expiry Month April 2010

Date	Open(Rs)	Close(Rs)	RETURN (%)
4-Jan-10	3835	3835	0.00
5-Jan-10	3860	3861	0.03
6-Jan-10	3820	3820	0.00
7-Jan-10	3892	3873	-0.49
8-Jan-10	3905	3887	-0.46
11-Jan-10	3897	3876	-0.54
12-Jan-10	3835	3816	-0.50
13-Jan-10	3750	3737	-0.35
14-Jan-10	3770	3754	-0.42
15-Jan-10	3710	3708	-0.05
16-Jan-10	3677	3677	0.00
18-Jan-10	3665	3680	0.41
19-Jan-10	3656	3650	-0.16
20-Jan-10	3673	3649	-0.65
21-Jan-10	3655	3605	-1.37
22-Jan-10	3576	3547	-0.81
23-Jan-10	3520	3510	-0.28
25-Jan-10	3524	3528	0.11
27-Jan-10	3530	3525	-0.14
28-Jan-10	3500	3484	-0.46
29-Jan-10	3487	3464	-0.66
30-Jan-10	3432	3439	0.20
1-Feb-10	3441	3490	1.42
2-Feb-10	3520	3614	2.67
3-Feb-10	3617	3620	0.08
4-Feb-10	3600	3473	-3.53
5-Feb-10	3473	3384	-2.56
6-Feb-10	3466	3435	-0.89
8-Feb-10	3425	3426	0.03
9-Feb-10	3421	3489	1.99
10-Feb-10	3486	3519	0.95
11-Feb-10	3537	3553	0.45
12-Feb-10	3481	3482	0.03
13-Feb-10	3502	3498	-0.11
15-Feb-10	3503	3494	-0.26
16-Feb-10	3502	3601	2.83
17-Feb-10	3611	3613	0.06
18-Feb-10	3605	3673	1.89
19-Feb-10	3655	3714	1.61
20-Feb-10	3728	3736	0.21
22-Feb-10	3745	3725	-0.53
23-Feb-10	3723	3684	-1.05
24-Feb-10	3690	3714	0.65
25-Feb-10	3716	3633	-2.23
26-Feb-10	3653	3690	1.01
27-Feb-10	3690	3690	0.00
1-Mar-10	3717	3651	-1.78
2-Mar-10	3650	3722	1.97
3-Mar-10	3690	3708	0.49
4-Mar-10	3715	3711	-0.11
5-Mar-10	3704	3745	1.11
6-Mar-10	3745	3747	0.05
8-Mar-10	3755	3732	-0.61
9-Mar-10	3736	3745	0.24
10-Mar-10	3745	3733	-0.32
11-Mar-10	3730	3759	0.78
12-Mar-10	3757	3721	-0.96
13-Mar-10	3722	3725	0.08
15-Mar-10	3710	3664	-1.24
16-Mar-10	3660	3733	1.99
17-Mar-10	3747	3760	0.35
18-Mar-10	3763	3765	0.05
19-Mar-10	3760	3674	-2.29
20-Mar-10	3679	3689	0.27
22-Mar-10	3680	3711	0.84
23-Mar-10	3709	3729	0.54
24-Mar-10	3718	3692	-0.70
25-Mar-10	3686	3692	0.16
26-Mar-10	3680	3627	-1.44
AVERAGE RETURN (%)			-0.03
RISK (VARIABLITY IN RETURNS) %			1.13

Source : www.mcxindia.com

Figure No: 3

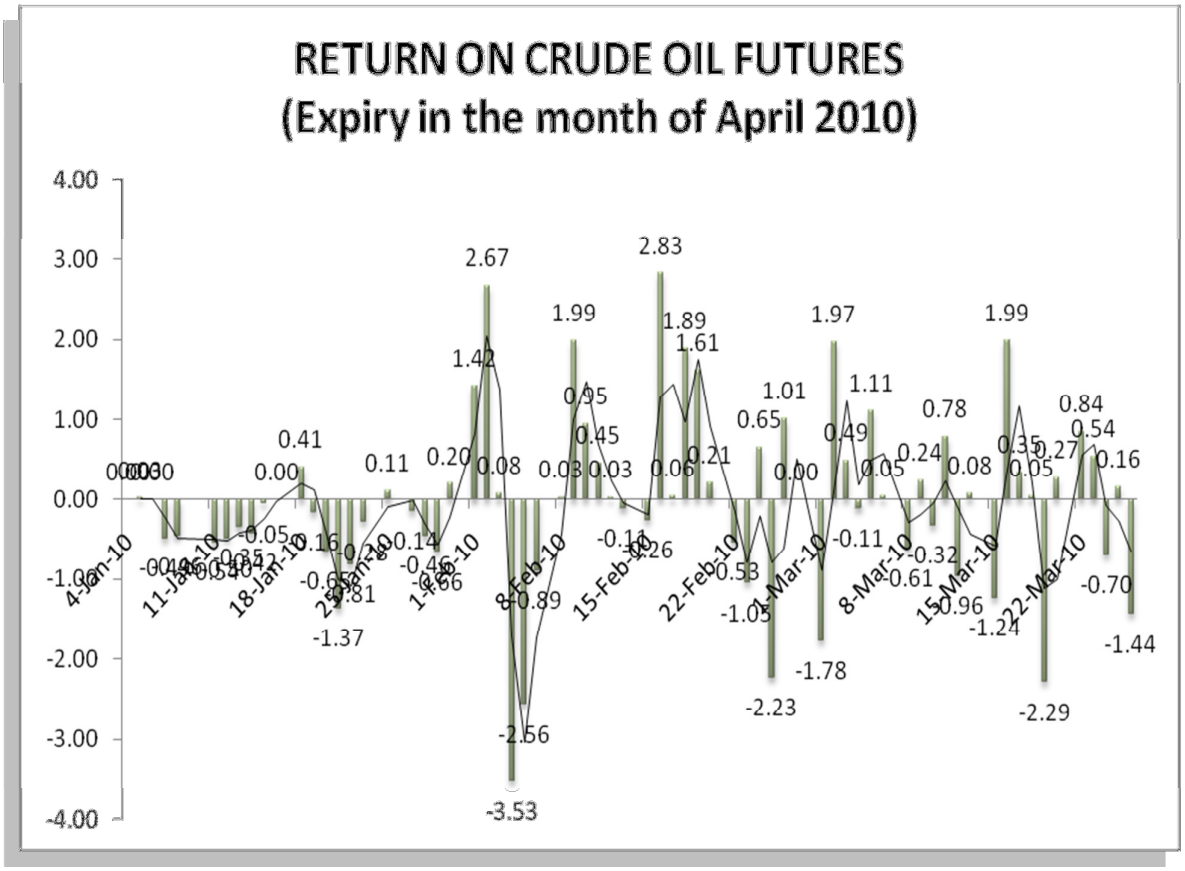

Table No.6 portrays the risk and return of crude oil futures which expires in the month of May, 2010. The average return of crude oil futures is -0.03 percent and the variability in returns is 0.88 percent. The average return is negative for the futures which expire in the month of May, 2010. It is an unfavorable sign for the investors who trade in crude oil futures. The return on crude oil futures followed a variable trend till the expiry. The futures price of crude oil varied between Rs. 3850 and Rs.3849. The returns are varied between a high positive return of 2.87 percent and a negative return 2.3 percent during the period. The crude oil futures are reasonably risky.

Table No: 6

RISK AND RETURN OF CRUDE OIL FUTURES - EXPIRY MONTH MAY 2010

Date	Open(Rs)	Close(Rs)	RETURN (%)
23-Nov-09	3850	3850	0.00
24-Nov-09	3775	3773	-0.05
25-Nov-09	3735	3738	0.08
27-Nov-09	3720	3710	-0.27
30-Nov-09	3783	3750	-0.87
1-Dec-09	3800	3820	0.53
2-Dec-09	3811	3811	0.00
3-Dec-09	3799	3823	0.63
4-Dec-09	3800	3800	0.00
8-Dec-09	3800	3804	0.11
9-Dec-09	3751	3706	-1.20
10-Dec-09	3743	3657	-2.30
14-Dec-09	3670	3628	-1.14
16-Dec-09	3624	3629	0.14
17-Dec-09	3670	3654	-0.44
18-Dec-09	3688	3683	-0.14
19-Dec-09	3540	3540	0.00
21-Dec-09	3560	3662	2.87
22-Dec-09	3649	3626	-0.63
23-Dec-09	3656	3687	0.85
24-Dec-09	3710	3720	0.27
26-Dec-09	3742	3743	0.03
28-Dec-09	3795	3801	0.16
29-Dec-09	3800	3800	0.00
30-Dec-09	3801	3822	0.55
31-Dec-09	3849	3849	0.00
AVERAGE RETURN (%)			-0.03
RISK (VARIABLITY IN RETURNS) %			0.88

Source : www.mcxindia.com

Figure No: 4

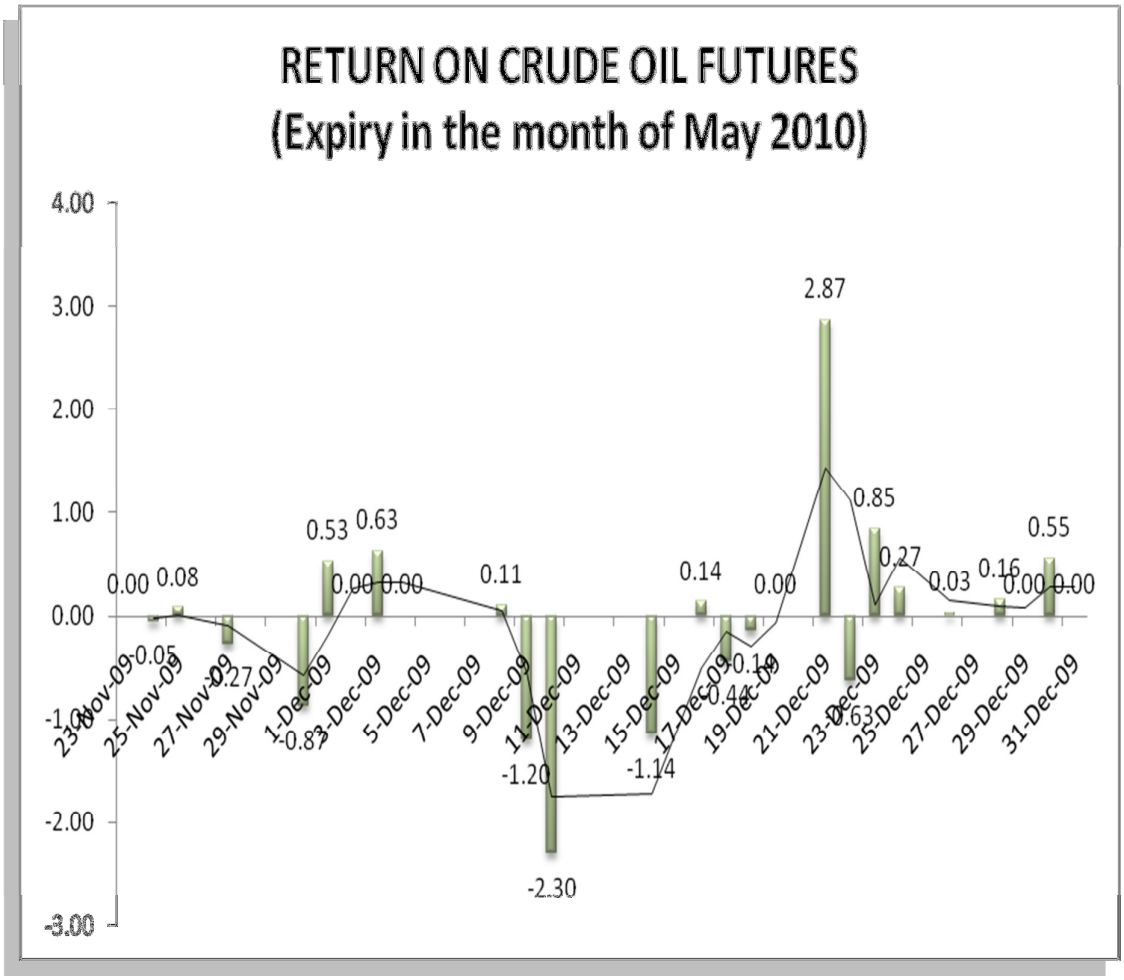

Table No.7 portrays the risk and return of crude oil futures which expires in the month of June, 2010. The average return of crude oil futures is -1.29 percent and the variability in returns is 0.55 percent. The average return is negative for the futures which expire in the month of June, 2010. It is an unfavorable sign for the investors who trade in crude oil futures. The return on crude oil futures followed a variable trend till the expiry. The futures price of crude oil varied between Rs. 3850 and Rs.3676. The returns are varied between a high positive return of 1.0 percent and a negative return 2.02 percent during the period. The crude oil futures are reasonably risky.

Table No: 7

Risk and Return of Crude Oil Futures - Expiry Month June 2010

Date	Open(Rs)	Close(Rs)	RETURN (%)
1-Jan-10	3850	3847	-0.08
4-Jan-10	3940	3940	0.00
5-Jan-10	3900	3913	0.33
6-Jan-10	3935	3920	-0.38
11-Jan-10	3925	3923	-0.05
13-Jan-10	3766	3766	0.00
14-Jan-10	3815	3804	-0.29
15-Jan-10	3780	3773	-0.19
18-Jan-10	3873	3873	0.00
19-Jan-10	3733	3731	-0.05
20-Jan-10	3721	3723	0.05
21-Jan-10	3725	3675	-1.34
22-Jan-10	3655	3657	0.05
23-Jan-10	3590	3590	0.00
1-Feb-10	3520	3520	0.00
2-Feb-10	3599	3635	1.00
4-Feb-10	3600	3600	0.00
5-Feb-10	3550	3542	-0.23
8-Feb-10	3503	3524	0.60
9-Feb-10	3542	3544	0.06
11-Feb-10	3610	3593	-0.47
12-Feb-10	3540	3540	0.00
13-Feb-10	3533	3533	0.00
18-Feb-10	3674	3674	0.00
19-Feb-10	3744	3744	0.00
20-Feb-10	3814	3793	-0.55
22-Feb-10	3756	3781	0.67
23-Feb-10	3747	3746	-0.03
24-Feb-10	3720	3753	0.89
25-Feb-10	3762	3686	-2.02
26-Feb-10	3720	3741	0.56
27-Feb-10	3737	3737	0.00
1-Mar-10	3760	3725	-0.93
2-Mar-10	3750	3753	0.08
3-Mar-10	3758	3764	0.16
4-Mar-10	3700	3735	0.95
5-Mar-10	3795	3795	0.00
6-Mar-10	3805	3805	0.00
8-Mar-10	3817	3814	-0.08
9-Mar-10	3765	3763	-0.05
10-Mar-10	3765	3782	0.45
12-Mar-10	3815	3798	-0.45
15-Mar-10	3751	3729	-0.59
16-Mar-10	3788	3788	0.00
17-Mar-10	3794	3792	-0.05
18-Mar-10	3807	3804	-0.08
19-Mar-10	3785	3759	-0.69
20-Mar-10	3730	3732	0.05
22-Mar-10	3716	3746	0.81
23-Mar-10	3753	3763	0.27
24-Mar-10	3750	3728	-0.59
25-Mar-10	3727	3748	0.56
26-Mar-10	3724	3676	-1.29
AVERAGE RETURN (%)			-0.06
RISK (VARIABLITY IN RETURNS) %			0.55

Source : www.mcxindia.com

Figure No: 4.5

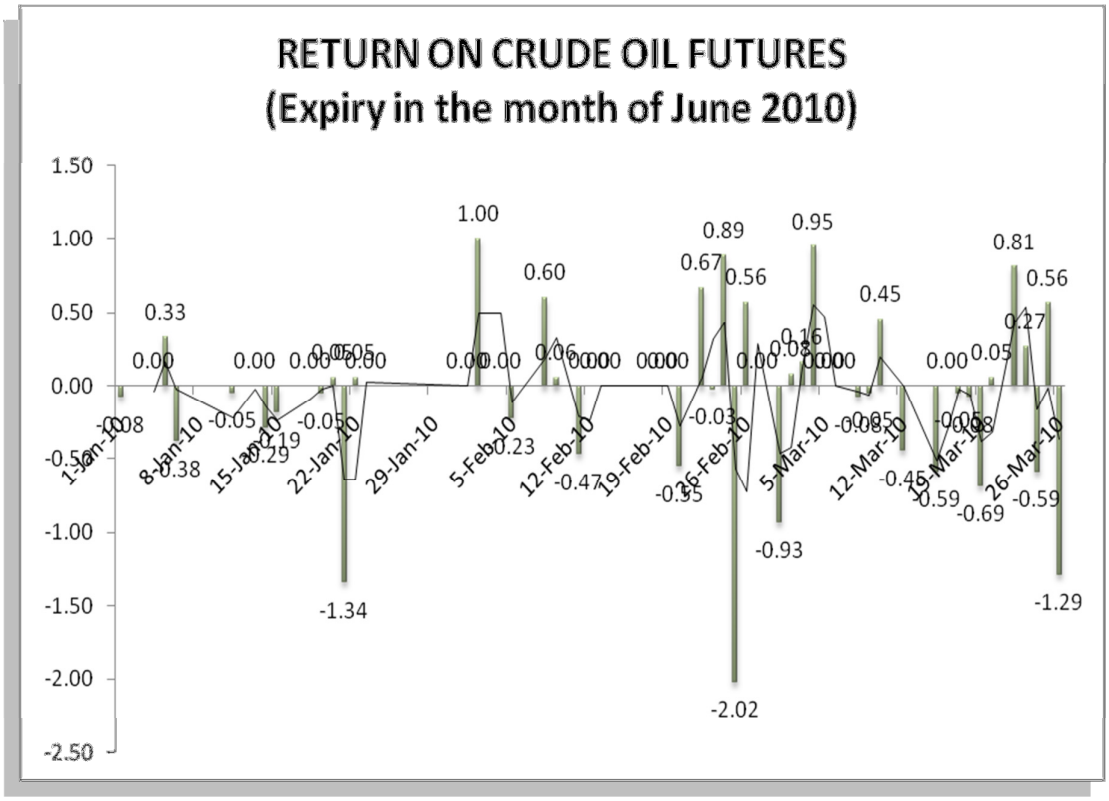

Table No.8 portrays the risk and return of crude oil futures which expires in the month of July, 2010. The average return of crude oil futures is -0.07 percent and the variability in returns is 0.54 percent. The average return is negative for the futures which expire in the month of July 2010. It is an unfavorable sign for the investors who trade in crude oil futures. The return on crude oil futures followed a variable trend till the expiry. The futures price of crude oil varied between Rs. 3701 and Rs.3697. The returns are varied between a high positive return of 1.27 percent and a negative return 1.73 percent during the period. The crude oil futures are reasonably risky.

Table No: 8

RISK AND RETURN OF CRUDE OIL FUTURES - EXPIRY MONTH JULY 2010

Date	Open(Rs)	Close(Rs)	RETURN (%)
20-Jan-10	3701	3701	0.00
21-Jan-10	3711	3711	0.00
22-Jan-10	3690	3690	0.00
23-Jan-10	3630	3630	0.00
27-Jan-10	3677	3641	-0.98
28-Jan-10	3580	3580	0.00
29-Jan-10	3585	3585	0.00
3-Feb-10	3725	3723	-0.05
4-Feb-10	3720	3693	-0.73
5-Feb-10	3635	3572	-1.73
11-Feb-10	3601	3601	0.00
13-Feb-10	3535	3535	0.00
15-Feb-10	3580	3580	0.00
17-Feb-10	3723	3723	0.00
18-Feb-10	3678	3713	0.95
19-Feb-10	3830	3830	0.00
22-Feb-10	3797	3801	0.11
23-Feb-10	3801	3784	-0.45
24-Feb-10	3775	3783	0.21
25-Feb-10	3740	3740	0.00
26-Feb-10	3770	3785	0.40
1-Mar-10	3799	3758	-1.08
4-Mar-10	3699	3746	1.27
5-Mar-10	3817	3831	0.37
8-Mar-10	3829	3820	-0.24
9-Mar-10	3786	3799	0.34
10-Mar-10	3793	3794	0.03
12-Mar-10	3829	3811	-0.47
18-Mar-10	3839	3839	0.00
20-Mar-10	3791	3790	-0.03
22-Mar-10	3740	3755	0.40
23-Mar-10	3762	3770	0.21
24-Mar-10	3738	3753	0.40
25-Mar-10	3782	3757	-0.66
26-Mar-10	3718	3697	-0.56
AVERAGE RETURN (%)			-0.07
RISK (VARIABLITY IN RETURNS) %			0.54

Source : www.mcxindia.com

Figure No: 6

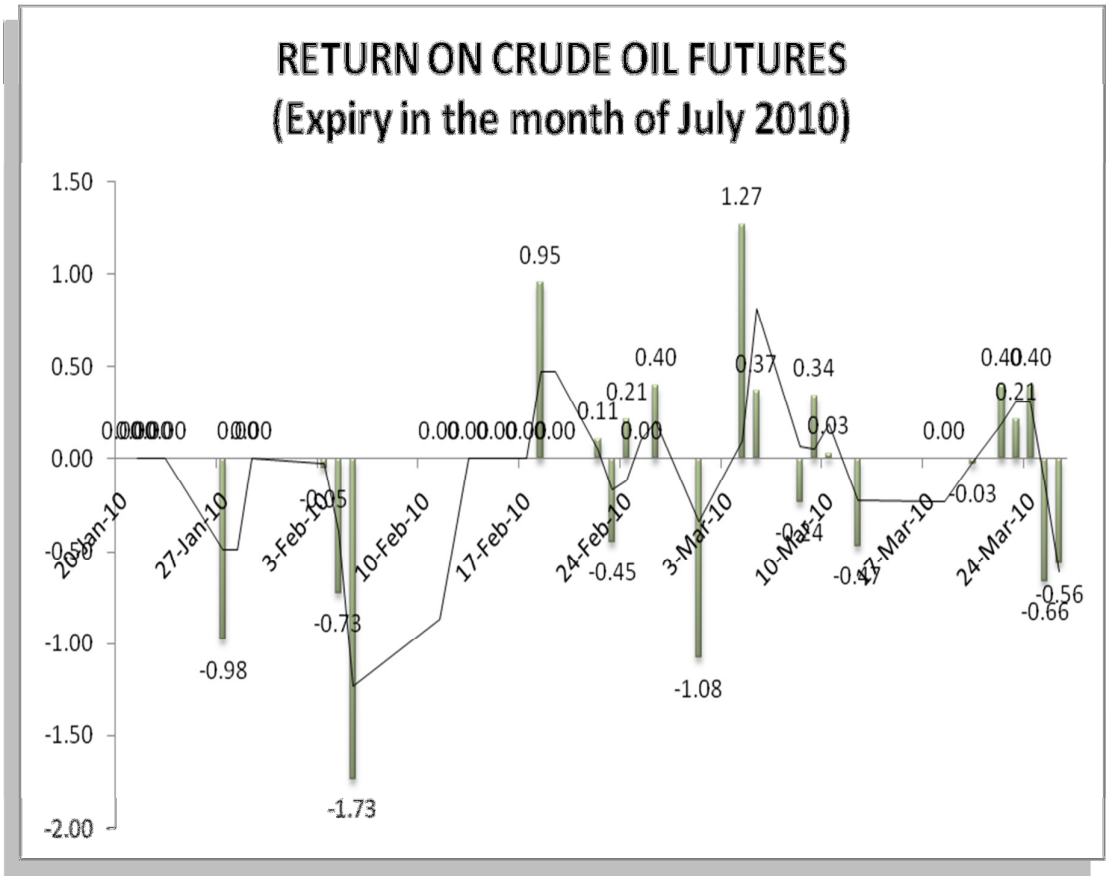

Table No. 9 portrays the risk and return of crude oil futures which expires in the month of August, 2010. The average return of crude oil futures is 0.10 percent and the variability in returns is 0.95 percent. The return on crude oil futures followed a variable trend till the expiry. The price movement is minimal and varied between Rs. 3895 and Rs.3745. The returns are varied between a high positive return of 2.66 percent and a negative return 1.68 percent during the period. The variability in returns is negligible being small changes in the prices.

Table No: 9

Risk and Return of Crude Oil Futures - Expiry Month Aug 2010

Date	Open(Rs)	Close(Rs)	RETURN (%)
22-Feb-10	3895	3885	-0.26
23-Feb-10	3780	3780	0.00
2-Mar-10	3800	3736	-1.68
3-Mar-10	3771	3779	0.21
4-Mar-10	3804	3794	-0.26
5-Mar-10	3700	3739	1.05
6-Mar-10	3725	3824	2.66
8-Mar-10	3821	3810	-0.29
9-Mar-10	3806	3823	0.45
10-Mar-10	3830	3812	-0.47
11-Mar-10	3820	3833	0.34
12-Mar-10	3827	3797	-0.78
15-Mar-10	3790	3773	-0.45
16-Mar-10	3743	3795	1.39
17-Mar-10	3824	3831	0.18
18-Mar-10	3831	3906	1.96
19-Mar-10	3828	3807	-0.55
20-Mar-10	3781	3781	0.00
22-Mar-10	3767	3778	0.29
23-Mar-10	3791	3800	0.24
24-Mar-10	3802	3784	-0.47
25-Mar-10	3779	3765	-0.37
26-Mar-10	3778	3745	-0.87
AVERAGE RETURN (%)			0.10
RISK (VARIABLITY IN RETURNS) %			0.95

Source : www.mcxindia.com

Figure No: 7

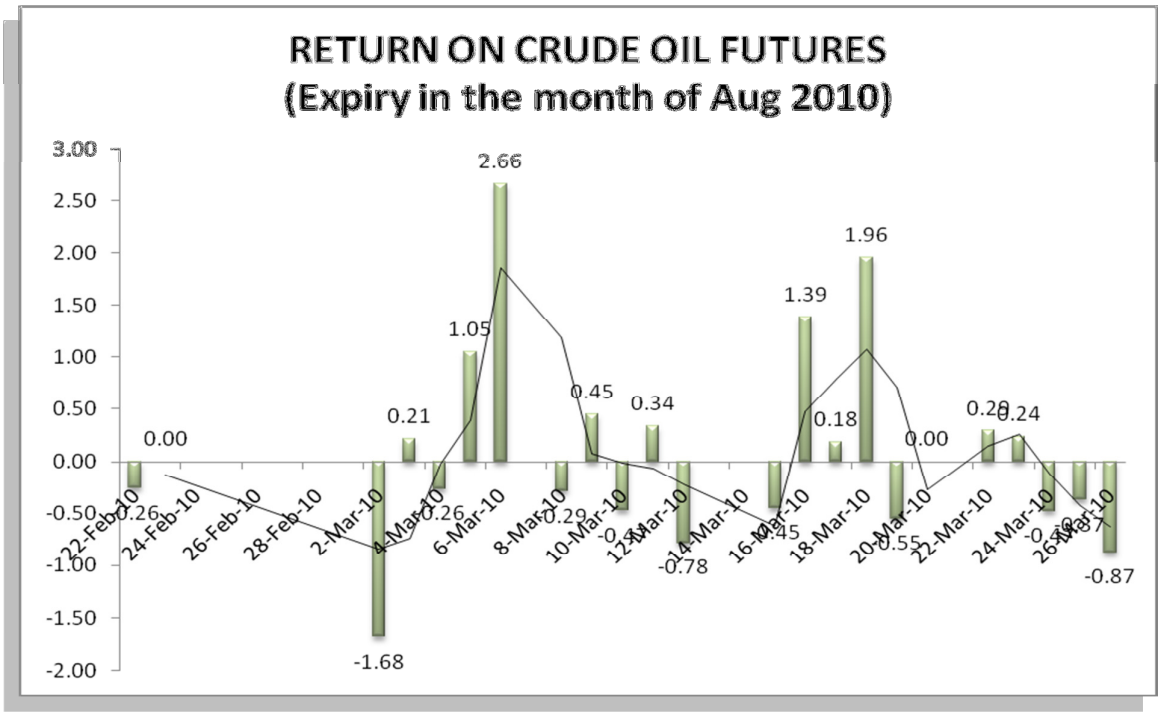

Table No.10 portrays the risk and return of crude oil futures which expires in the month of September, 2010. The average return of crude oil futures is 0.05 percent and the variability in returns is 0.60 percent. The return on crude oil futures followed a variable trend till the expiry. The price movement is minimal and varied between Rs. 3765 and Rs.3775. The returns are varied between a high positive return of 1.01 percent and a negative return 0.52 percent during the period. The variability in returns is negligible being small changes in the prices.

Table No: 10

Risk and Return of Crude Oil Futures - Expiry Month Sep 2010

Date	**Open(Rs)**	**Close(Rs)**	**RETURN (%)**
22-Mar-10	3765	3803	1.01
23-Mar-10	3827	3821	-0.16
24-Mar-10	3819	3799	-0.52
25-Mar-10	3788	3797	0.24
26-Mar-10	3787	3775	-0.32
AVERAGE RETURN (%)			0.05
RISK (VARIABLITY IN RETURNS) %			0.60

Source : www.mcxindia.com

Figure No: 8

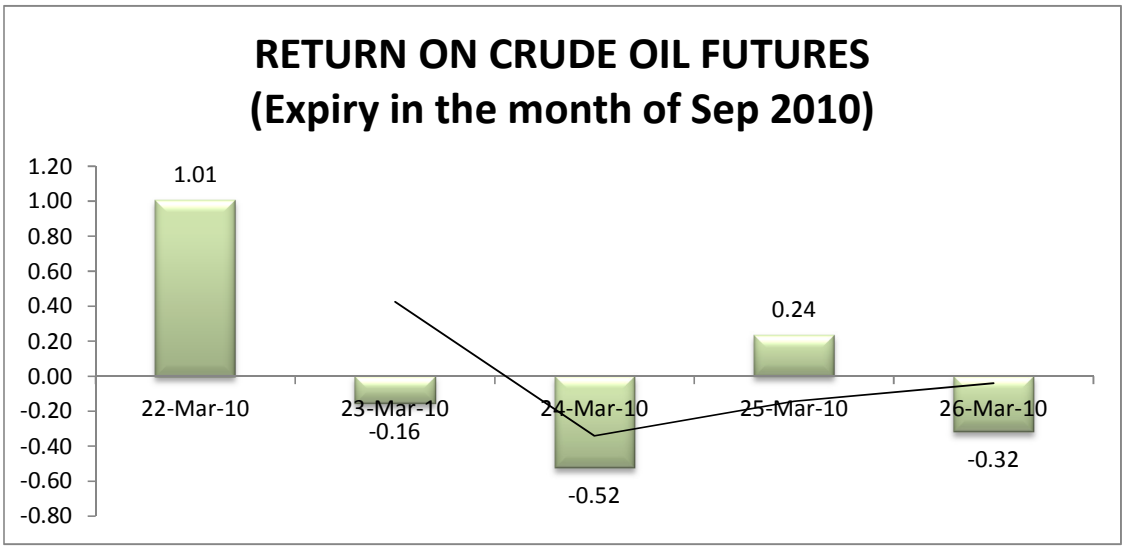

Table No: 11

SUMMARY OF RESULTS

S.No	Expiry Month	Average Return (%)	Risk (%)
1	February, 2010	0.01	1.45
2	March, 2010	-0.05	1.36
3	April, 2010	-0.03	1.13
4	May, 2010	-0.03	0.88
5	June, 2010	-0.06	0.55
6	July, 2010	-0.07	0.54
7	August, 2010	0.10	0.95
8	September, 2010	0.05	0.60

It can noticed from the data furnished in Table No.10 that the average return on crude oil futures was negative in five out of eight months. Moreover, the average return was limited to only 0.10 percent. The variablity in returns is high in Febreaury, 2010 and minimum in July, 2010. From the above analysis it can noticed that the perfomance of crude oil futures is not favourable.

Findings and Suggestions

Findings

- The average return from the crude oil futures expire in February, 2010 is 0.01 percent and the maximum return in the entire month is 3.19 percent. Hence the crude oil futures expire in February, 2010 were not a viable investment avenue for an investor. Higher risk observed for these futures. A variable trend in returns is identified.
- The average return of crude oil futures is -0.05 percent and the variability in returns is 1.36 percent for the crude oil futures expires in the month of March, 2010. The average return is negative for the futures which expire in the month of March 2010. It is an unfavorable investment avenue for the investors and the return on crude oil futures followed a variable trend till the expiry. Hence, these futures are very risky.
- The average return of crude oil futures is -0.03 percent and the variability in returns is 1.13 percent for the crude oil futures expires in the month of April, 2010. The average return is negative for the futures which expire in the month of April, 2010. It is an unfavorable investment avenue for the investors and the return on crude oil futures followed a variable trend till the expiry. Higher risk is noticed for these futures.
- The average return of crude oil futures is -0.03 percent and the variability in returns is 0.88 percent for the crude oil futures which expire in the month of May, 2010. The average return is negative for the futures which expire in the month of May, 2010. It is an unfavorable investment avenue for the investors and the return on crude oil futures followed a variable trend till the expiry. Higher risk is noticed for these futures.
- The average return of crude oil futures is -1.29 percent and the variability in returns is 0.55 percent for the crude oil futures expires in the month of June, 2010. The average return is negative for the futures which expire in the month of June, 2010. It is an unfavorable investment avenue for the investors and the return on crude oil futures followed a variable trend till the expiry. Higher risk is noticed for these futures.
- The average return of crude oil futures is -0.07 percent and the variability in returns is 0.54 percent for the crude oil futures expire in the month of July, 2010. The average return is negative for the futures which expire in the month of July 2010. It is an unfavorable investment avenue for the investors and the return on crude oil futures followed a variable trend till the expiry. Higher risk is noticed for these futures.

- The average return of crude oil futures is 0.10 percent and the variability in returns is 0.95 percent for the crude oil futures expire in the month of July, 2010. The return on crude oil futures followed a variable trend till the expiry. The price movement is minimal and varied between Rs. 3895 and Rs.3745. The returns are varied between a high positive return of 2.66 percent and a negative return 1.68 percent during the period. The variability in returns is negligible being small changes in the prices.
- The average return of crude oil futures is 0.05 percent and the variability in returns is 0.60 percent for the crude oil futures expire in the month of July, 2010. The return on crude oil futures followed a variable trend till the expiry. The price movement is minimal and varied between Rs. 3765 and Rs.3775. The returns are varied between a high positive return of 1.01 percent and a negative return 0.52 percent during the period. The variability in returns is negligible being small changes in the prices.

Conclusion:

From the above analysis it can noticed that the perfomance of crude oil futures is not favourable.

Suggestions For Investors

- Crude oil Futures were not profitable investment alternative, hence the investors have to identify some other commodity or other derivative instrument for maximizing their expected reurn.
- The investors may prefer a portfolio of commodity instead of one commodity to minimize the risk proportion.
- The best investment alternative for the investors is to trade on the index where a collective advantage.
- The investor is careful about the proportion of total investment in commodities trading. If the investor combines the trading with some risk free securities, it may give buffer for earning minimum returns.

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