

*Impact of Forex on Commodity Market for the year 2007*



**A STUDY ON IMPACT OF FOREX ON COMMODITY MARKET FOR THE  
YEAR 2007**

**BY**

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**KCT BUSINESS SCHOOL  
DEPARTMENT OF MANAGEMENT STUDIES  
KUMARAGURU COLLEGE OF TECHNOLOGY  
COIMBATORE**

**BONAFIDE CERTIFICATE**

Certified that this project titled “A STUDY ON IMPACT OF FOREX ON COMMODITY MARKET FOR THE YEAR 2007” is the bonafide work of **Mr.M.SENTHIL BALAJI (71206631049)** who carried out this research under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

**Prof. Col. N. Jothilingam**  
Faculty Guide

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Director

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**Evaluated and viva-voce conducted on .....**

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**Examiner I**

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**Examiner II**

Impact of Forex on Commodity Market for the year 2007

**DECLARATION**

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**DECLARATION**

I, hereby declare that this project report entitled as “A Study on impact of forex on commodity market for the year 2007”, has undertaken for academic purpose submitted to Anna University in partial fulfillment of requirement for the award of the degree of Master of Business Administration. The project report is the record of the original work done by me under the guidance of Prof. Col. N. Jothilingam during the academic year 2007-2008.

I, also declare hereby, that the information given in this report is correct to best of my knowledge and belief.

Date:

.....

Place: Coimbatore:

(M. Senthil Balaji)

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***EXECUTIVE SUMMARY***

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## **EXECUTIVE SUMMARY**

In Commodity market, impact of forex market is one of the most important factor. A measure that finds the level of relationship between price of \$ and € on Commodity, it is useful to predict the price and movement of commodities. The study is aimed in analysing the forex impact on select commodity market viz Gold, Crude oil, Copper and Silver.

The result about the relationship between Gold, Crude oil, Copper with dollar implies low negative correlation and inverse relationship but with silver it has positive correlation. In euro, gold, crude oil and silver have direct influence and is positively correlated but with copper it has negative correlation. The other variables that will affect the Gold, Crude oil, Copper and Silver prices like supply and demand, inflation rate and inventory, which are beyond the scope of the study. In the analysis it was found that influence percentage of \$ and €. Both gold and crude oil have high relationship and silver and copper have low relationship with dollar.

Gold have 55%, Crude oil have 72%, Copper have 8.4%, and Silver have 40% influences by dollar. Gold, silver, and crude oil have high relationship with Euro. Gold have 40.5%, Crude oil have 54%, Copper have 30%, and Silver have 43.5% influences by Euro. In autocorrelation in this data and the model has good fit with data. This study proves the prediction that price of commodity would rise in the near future.

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***INTRODUCTION***

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## **1. INTRODUCTION**

### **BACKGROUND**

#### **1.1 About Commodity:**

Commodities are the part and parcels of our life. Life without commodities is unimaginable. A commodity may be defined as an article, a product or material that is bought and sold. It can be classified as every kind of movable property, except Actionable Claims, Money & Securities. Improved use of commodities has changed the life of human being. Long ago when human beings were finding food for their existence, they started using grains. To get warmth and to protect him he needed fire started using energy sources. They felt a need of shelter and slowly he started using metals for this. All these are nothing else but commodities.

As these commodities are of so much importance in our life, the commodities markets have a great role to play. The world commodity markets are very dynamic and well developed while the commodity market in India is at its nascent stage. It came into existence after independence but didn't have much attention because it was not supported fully by the government much.

During inflation, these markets were attributed as the reason for hike in food grain prices and so were banned. But after the recommendations of the Kabra Committee, this matter was given a rethought and nationalized commodity markets were established from 2003 which has shown tremendous results.

Commodities actually offer immense potential to become a separate asset class for market-savvy investors, 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.

### **1.1.1. COMMODITY MARKET**

Commodity markets are markets where raw or primary products are exchanged. These raw commodities are traded on regulated commodities exchanges, in which they are bought and sold in standardized Contracts. Commodity Market is an organized traders' exchange in which standardized, graded products are bought and sold. Worldwide, there are 48 major commodity exchanges that trade over 96 commodities, ranging from wheat and cotton to silver and oil. Most trading is done in futures contracts, that is, agreements to deliver goods at a set time in the future for a price established at the time of the agreement.

Futures trading allow both hedging to protect against serious losses in a declining market and speculation for gain in a rising market. For example, a seller may sign a contract agreeing to deliver grain in two months at a set price. If the grain market declines at the end of two months, the seller will still get the higher price quoted in the futures contract. If the market rises, however, speculators buying grain to earn profit by paying the lower contract price for the grain and to reselling it at the higher market price. Spot contracts, a less widely used form of trading, call for immediate delivery of a specified commodity and are often used to obtain the goods necessary to fulfill a futures contract. An independent U.S. regulatory agency, the Commodity Futures Trading Commission was established in 1974 to regulate commodity markets. In 1982, the Chicago Mercantile Exchange introduced a futures contract for Standard & Poor's 500 U.S. companies that allow investors to speculate on the future prices of those stocks.

Trading of S&P 500 and other financial futures has broken down some of the barriers that once separated stock, bond, and commodity markets and made it easier for investors to hedge their stock investments. Critics charge that the future trading at the commodity markets in Chicago has made stock prices more volatile. The Chicago Board of Trade is the largest futures and options exchange in the United States. The largest in the world is Eurex, an electronic European exchange.

#### **1.1.1.1. EARLY HISTORY OF COMMODITY MARKETS**

Historically, dating from ancient Sumerian use of sheep or goats, or other people using pigs, rare seashells, or other items as commodity money, people have sought ways to standardize and trade contracts in the delivery of such items, to render trade itself more smooth and predictable. However, the Commodity status of living things is always subject to doubt - it was hard to validate the health or existence of sheep or goats. Excuses for non-delivery were not unknown, and there are recovered Sumerian letters that complain of sickly goats, sheep, etc.,

If a seller's reputation was good, individual "bankers" could decide to take the risk of "clearing" a trade. The observation that trust is always required between markets participants later led to credit money. But until relatively modern times, communication and credit were primitive.

Classical civilizations built complex global markets trading gold or silver for spices, cloth, wood and weapons, most of which had standards of quality and timeliness. Considering the many hazards of climate, piracy, theft and abuse of military fiat by rulers of kingdoms along the trade routes, it was a major focus of these civilizations to keep markets open and trading in these scarce commodities. Reputation and clearing became central concerns, and the states which could handle them most effectively became very powerful empires, trusted by many peoples to manage and mediate trade and commerce.

#### **1.1.1.2. EVOLUTION OF COMMODITIES MARKET IN INDIA**

India has a long history of futures trading in commodities. In India, trading in commodity futures has been in existence from the nineteenth century with organized trading in cotton, through the establishment of Bombay Cotton Trade Association Ltd. in 1875. Over a period of time, other commodities were permitted to be traded in futures exchanges. Spot trading in India occurs mostly in regional and unorganized markets, which are fragmented and isolated. There were booming activities in this market and at one time as many as 110 exchanges were conducting forward trade in various commodities in the country.

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The securities market was a poor cousin of this market as there were not many papers to be traded at that time. The era of widespread shortages in many essential commodities resulting in inflationary pressures and the tilt towards socialist policy, in which the role of market forces for resource allocation got diminished, saw the decline of this market since the mid-1960s. This coupled with the regulatory constraints in 1960s, resulted in virtual dismantling of the commodities future markets. It is only in the last decade that commodity future exchanges have been actively encouraged. However, the markets have been thin with poor liquidity and have not grown to any significant level.

Indian Policy makers have traditionally coped with the uncertainty and risks associated with price volatility by resorting to policy instruments which attempted to minimize or eliminate price volatility - a virtually closed external trade regime, price control, pervasive government controls on private sector activities extensive market interventions and crop insurance.

Liberalization of Indian economy since 1991 recognized the role of market and private initiative for the development of the economy. The much maligned market instruments such as the futures trading were also given due recognition. After some halting efforts since 1994 when Kabra Committee submitted its report, the late 1990s spilling into the new millennium, saw some bold initiatives in the commodity market.

A three-pronged approach has been adopted to revive and revitalize this market. Firstly, on policy front many legal and administrative hurdles in the functioning of the market have been removed. Forward trading was permitted in cotton and jute goods in 1998, followed by some oilseeds and their derivatives, such as groundnut, mustard seed, sesame, cottonseed etc. in 1999. A statement in the first ever National Agriculture Policy, issued in July, 2000 by the government that futures trading will be encouraged in increasing number of agricultural commodities was indicative of welcome change in the government policy towards forward trading. Secondly, strengthening of infrastructure and institutional capabilities of the regulator and the existing exchanges received priority. Thirdly, as the existing exchanges are slow to adopt reforms due to legacy or lack of resources, new promoters with resources and professional approach were being attracted

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with a clear mandate to set up demutualised, technology driven exchanges with nationwide reach and adopting best international practices.

The year 2003 marked the real turning point in the policy framework for commodity market when the government issued notifications for withdrawing all prohibitions and opening up forward trading in all the commodities. This period also witnessed other reforms, such as, amendments to the Essential Commodities Act, Securities (Contract) Rules, which have reduced bottlenecks in the development and growth of commodity markets. Of the country's total GDP, commodities related (and dependent) industries constitute about roughly 50-60 %, which itself cannot be ignored.

Most of the existing Indian commodity exchanges are single commodity platforms; are regional in nature, run mainly by entities which trade on them resulting in substantial conflict of interests, opaque in their functioning and have not used technology to scale up their operations and reach to bring down their costs. But with the strong emergence of: National Multi-commodity Exchange Ltd., Ahmedabad (NMCE), Multi Commodity Exchange Ltd., Mumbai (MCX), National Commodities and Derivatives Exchange, Mumbai (NCDEX), and National Board of Trade, Indore (NBOT), all these shortcomings will be addressed rapidly. These exchanges are expected to be role model to other exchanges and are likely to compete for trade not only among themselves but also with the existing exchanges.

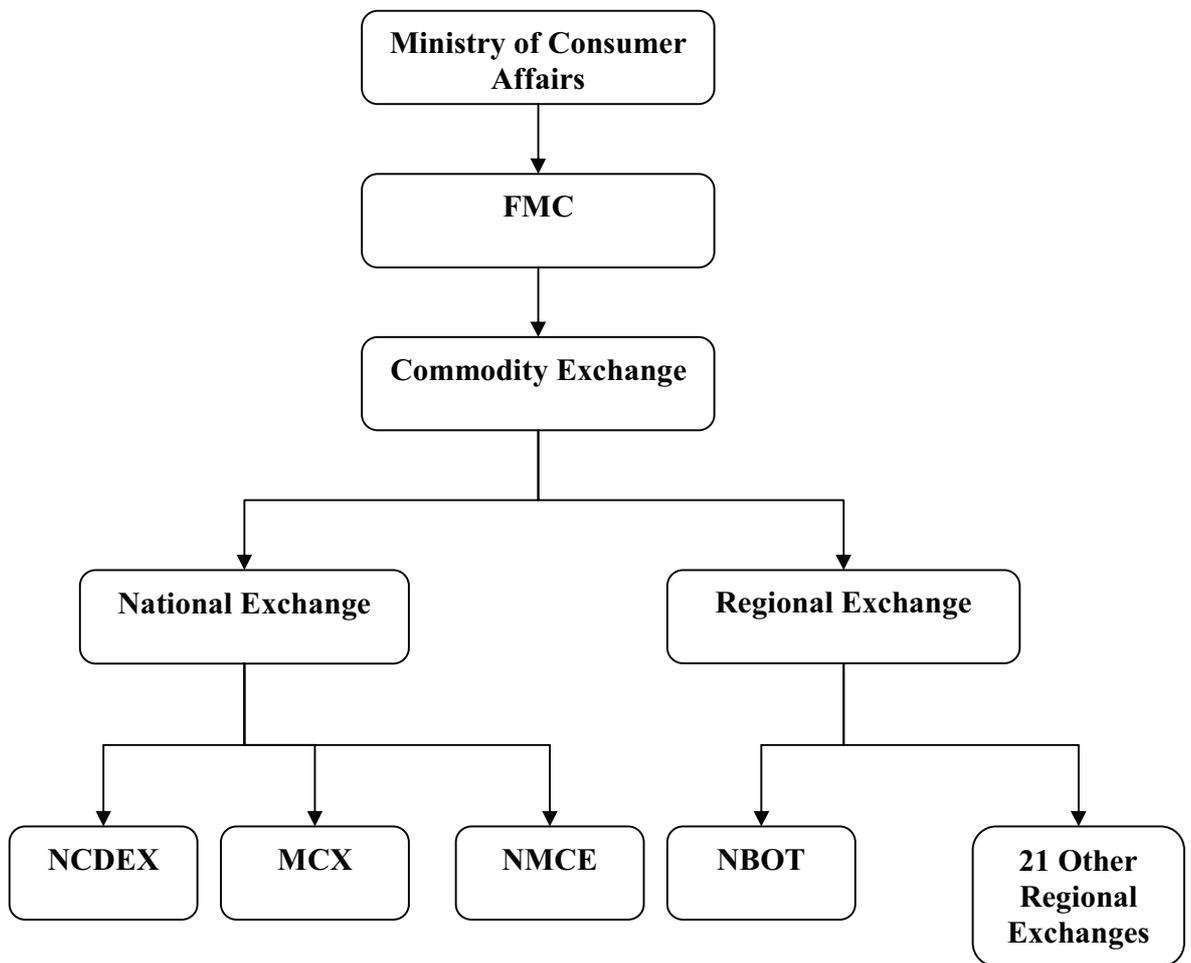
The recent policy changes and upbeat sentiments about the economy, particularly agriculture, have created lot of interest and euphoria about the commodity markets. Even though a large number of the traditional exchanges are showing flat volume, this has not weakened excitement among new participants. Many of these exchanges have been permitted with a view to extend the culture and tradition of forward trading to new areas and commodities and also to introduce new technology and practices.

The current mindset of the people in India is that the Commodity exchanges are speculative (due to non delivery) and are not meant for actual users. In India, Interest rate risks, exchange rate risks are actively managed, but the same does not hold true for the

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commodity risks. Some additional impediments are centered on the safety, transparency and taxation issues.

**STRUCTURE OF COMMODITY MARKET IN INDIA**



### **1.1.3. COMMODITIES EXCHANGE:**

A commodities exchange is an exchange where various commodities and derivatives products are traded. Most commodity markets across the world trade in agricultural products and other raw materials (like wheat, barley, sugar, maize, cotton, cocoa, coffee, milk products, pork bellies, oil, metals, etc.) and contracts based on them. These contracts can include spot prices, forwards, futures and options on futures. Other sophisticated products may include interest rates, environmental instruments, swaps, or ocean freight contracts.

#### **Overview of commodities exchanges in India**

Forward Markets Commission (FMC) headquartered at Mumbai is a regulatory authority, which is overseen by the Ministry of Consumer Affairs and Public Distribution, Govt. of India. It is a statutory body set up in 1953 under the Forward Contracts (Regulation) Act, 1952.

"The Act Provides that the Commission shall consist of not less than two but not exceeding four members appointed by the Central Government out of them being nominated by the Central Government to be the Chairman thereof. Currently Commission comprises three members among whom Dr. Kewal Ram, IES, is acting as Chairman and Smt. Padma Swaminathan, and Dr. (Smt.) Jayashree Gupta, are the Members of the Commission."

#### **The functions of the Forward Markets Commission are as follows:**

- To advise the Central Government in respect of the recognition or the withdrawal of recognition from any association or in respect of any other matter arising out of the administration of the Forward Contracts (Regulation) Act 1952.
- To keep forward markets under observation and to take such action in relation to them, as it may consider necessary, in exercise of the powers assigned to it by or under the Act.

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- To collect and whenever the Commission thinks it necessary, to publish information regarding the trading conditions in respect of goods to which any of the provisions of the act is made applicable, including information regarding supply, demand and prices, and to submit to the Central Government, periodical reports on the working of forward markets relating to such goods.
- To make recommendations generally with a view to improving the organization and working of forward markets.
- To undertake the inspection of the accounts and other documents of any recognized association or registered association or any member of such association whenever it considers it necessary.

**The list of exchanges that has been allowed to trade in commodities are**

1. Bhatinda Om & Oil Exchange Ltd., Batinda.
2. The Bombay Commodity Exchange Ltd. Mumbai
3. The Rajkot Seeds oil & Bullion Merchants' Association Ltd
4. The Kanpur Commodity Exchange Ltd., Kanpur
5. The Meerut Agro Commodities Exchange Co. Ltd., Meerut
6. The Spices and Oilseeds Exchange Ltd.
7. Ahmedabad Commodity Exchange Ltd.
8. Vijay Beopar Chamber Ltd., Muzaffarnagar
9. India Pepper & Spice Trade Association. Kochi
10. Rajdhani Oils and Oilseeds Exchange Ltd. , Delhi
11. National Board of Trade. Indore.
12. The Chamber Of Commerce, Hapur
13. The East India Cotton Association Mumbai.
14. The Central India Commercial Exchange Ltd, Gwalior
15. The East India Jute & Hessian Exchange Ltd,
16. First Commodity Exchange of India Ltd, Kochi
17. Bikaner Commodity Exchange Ltd., Bikaner
18. The Coffee Futures Exchange India Ltd, Bangalore.

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19. Esugarindia Limited.
20. National Multi Commodity Exchange of India Limited. (NMCE)
21. Surendranagar Cotton oil & Oilseeds Association Ltd,
22. Multi Commodity Exchange of India Ltd. (MCX)
23. National Commodity & Derivatives Exchange Ltd. (NCDEX)
24. Haryana Commodities Ltd., Hissar
25. e-Commodities Ltd.

Out of these 25 commodities the MCX, NCDEX and NMCE are large exchanges and MCX is the biggest among them.

#### **1.1.3.1. Multi Commodity Exchange:**

**MCX** an independent and de-mutualised **Multi Commodity Exchange** has permanent recognition from Government of India for facilitating online trading, clearing and settlement operations for commodity futures markets across the country. Key shareholders of MCX include Financial Technologies (I) Ltd., State Bank of India (India's largest commercial bank) & associates, Fidelity International, National Stock Exchange of India Ltd. (NSE), National Bank for Agriculture and Rural Development (NABARD), HDFC Bank, SBI Life Insurance Co. Ltd., Union Bank of India, Canara Bank, Bank of India, Bank of Baroda and Corporation Bank.

Headquartered in Mumbai, MCX is led by an expert management team with deep domain knowledge of the commodity futures markets. Through the integration of dedicated resources, robust technology and scalable infrastructure, since inception MCX has recorded many first to its credit.

Inaugurated in November 2003 by Shri Mukesh Ambani, Chairman & Managing Director, Reliance Industries Ltd, MCX offers futures trading in the following commodity categories: Agri Commodities, Bullion, Metals- Ferrous & Non-ferrous, Pulses, Oils & Oilseeds, Energy, Plantations, Spices and other soft commodities. MCX

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has built strategic alliances with some of the largest players in commodities eco-system, namely, Bombay Bullion Association, Bombay Metal Exchange, Solvent Extractors' Association of India, Pulses Importers Association, Shetkari Sanghatana, United Planters Association of India and India Pepper and Spice Trade Association.

Today MCX is offering spectacular growth opportunities and advantages to a large cross section of the participants including Producers / Processors, Traders, Corporate, Regional Trading Centers, Importers, Exporters, Cooperatives, Industry Associations, amongst others MCX being nation-wide commodity exchange, offering multiple commodities for trading with wide reach and penetration and robust infrastructure, is well placed to tap this vast potential.

Today, MCX features amongst the world's top three bullion exchanges and top four energy exchanges. MCX is led by an expert management team with deep domain knowledge of the commodities futures market. Presently, the average daily turnover of MCX is around USD1.55 bn (Rs.7,000 crore - 2006), with a record peak turnover of 2007 is average turnover Rs.10338.5 crore. The exchange has also affected large deliveries in domestic commodities, signifying the efficiency of price discovery. Being a nation-wide commodity exchange having state-of-the-art infrastructure, offering multiple commodities for trading with wide reach and penetration, MCX is well placed to tap the vast potential poised by the commodities market.

#### **1.1.3.2. National Commodity & Derivatives Exchange Limited:**

**National Commodity & Derivatives Exchange Limited (NCDEX)** is a professionally managed online multi commodity exchange promoted by ICICI Bank Limited (ICICI Bank), Life Insurance Corporation of India (LIC), National Bank for Agriculture and Rural Development (NABARD) and National Stock Exchange of India Limited (NSE). Punjab National Bank (PNB), CRISIL Limited (formerly the Credit Rating Information Services of India Limited), Indian Farmers Fertiliser Cooperative Limited (IFFCO) and Canara Bank by subscribing to the equity shares have joined the initial promoters as shareholders of the Exchange. NCDEX is the only commodity

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exchange in the country promoted by national level institutions. This unique parentage enables it to offer a bouquet of benefits, which are currently in short supply in the commodity markets. The institutional promoters of NCDEX are prominent players in their respective fields and bring with them institutional building experience, trust, nationwide reach, technology and risk management skills.

NCDEX is a public limited company incorporated on April 23, 2003 under the Companies Act, 1956. It obtained its Certificate for Commencement of Business on May 9, 2003. It has commenced its operations on December 15, 2003. NCDEX is a nation-level, technology driven de-mutualized on-line commodity exchange with an independent Board of Directors and professionals not having any vested interest in commodity markets.

It is committed to provide a world-class commodity exchange platform for market participants to trade in a wide spectrum of commodity derivatives driven by best global practices, professionalism and transparency. NCDEX is regulated by Forward Market Commission in respect of futures trading in commodities. Besides, NCDEX is subjected to various laws of the land like the Companies Act, Stamp Act, Contracts Act, Forward Commission (Regulation) Act and various other legislations, which impinge on its working.

NCDEX is located in Mumbai and offers facilities to its members in more than 550 centres throughout India. The reach will gradually be expanded to more centres. NCDEX currently facilitates trading in 57 commodities **Agriculture-** Barley, Cashew, Castor Seed, Chana, Chilli, Coffee - Arabica, Coffee - Robusta, Crude Palm Oil, Cotton Seed Oilcake, Expeller Mustard Oil, Groundnut (in shell), Groundnut Expeller Oil, Guar gum, Guar Seeds, Gur, Jeera, Jute sacking bags, Indian Parboiled Rice, Indian Pusa Basmati Rice, Indian Traditional Basmati Rice, Indian Raw Rice, Indian 28.5 mm Cotton, Indian 31 mm Cotton, Masoor Grain Bold, Medium Staple Cotton, Mentha Oil, Mulberry Green Cocoons, Mulberry Raw Silk, Mustard Seed, Pepper, Potato, Raw Jute, Rapeseed-Mustard Seed Oilcake, RBD Palmolein, Refined Soy Oil, Rubber, Sesame Seeds, Soyabean, Sugar, Yellow Soybean Meal, Tur, Turmeric, Urad, V-797

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Kapas, Wheat, Yellow Peas, Yellow Red Maize. **Metals** - Aluminium Ingot, Electrolytic Copper Cathode, Gold, Mild Steel Ingots, Nickel Cathode, Silver, Sponge Iron, Zinc Ingot. **Energy** - Brent Crude Oil, Furnace Oil. At subsequent phases trading in more commodities would be facilitated.

#### **1.1.3.3. NATIONAL MULTI COMMODITY EXCHANGE:**

In 1999, first state-of-the-art demutualised multi-commodity Exchange, National Multi Commodity Exchange of India Ltd. (NMCE) was promoted by commodity-relevant public institutions, viz., Central Warehousing Corporation (CWC), National Agricultural Cooperative Marketing Federation of India (NAFED), Gujarat Agro-Industries Corporation Limited (GAICL), Gujarat State Agricultural Marketing Board (GSAMB), National Institute of Agricultural Marketing (NIAM), and Neptune Overseas Limited (NOL). While various integral aspects of commodity economy, viz., warehousing, cooperatives, private and public sector marketing of agricultural commodities, research and training were adequately addressed in structuring the Exchange, finance was still a vital missing link. Punjab National Bank (PNB) took equity of the Exchange to establish that linkage. Even today, NMCE is the only Exchange in India to have such investment and technical support from the commodity relevant institutions. These institutions are represented on the Board of Directors of the Exchange and also on various committees set up by the Exchange to ensure good corporate governance. Some of them have also lent their personnel to provide technical support to the Exchange management. The day-to-day operations of the Exchange are managed by the experienced and qualified professionals with impeccable integrity and expertise. None of them have any trading interest. The structure of NMCE is impossible to replicate in India.

NMCE is unique in many other respects. It is a zero-debt company; following widely accepted prudent accounting and auditing practices. It has robust delivery mechanism making it the most suitable for the participants in the physical commodity markets. The exchange does not compromise on its delivery provisions to attract speculative volume. Public interest rather than commercial interest guide the functioning

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of the Exchange. It has also established fair and transparent rule-based procedures and demonstrated total commitment towards eliminating any conflicts of interest. It is the only Commodity Exchange in the world to have received ISO 9001:2000 certification from British Standard Institutions (BSI).

NMCE commenced futures trading in 24 commodities on 26th November, 2002 on a national scale and the basket of commodities has grown substantially since then to include cash crops, food grains, plantations, spices, oil seeds, metals & bullion among others. Research Desk of NMCE is constantly in the process of identifying the hedging needs of the commodity economy and the basket of products is likely to grow even further. NMCE has also made immense contribution in raising awareness about and catalyzing implementation of policy reforms in the commodity sector. NMCE was the first Exchange to take up the issue of differential treatment of speculative loss. It was also the first Exchange to enroll participation of high net-worth corporate securities brokers in commodity derivatives market. It was the Exchange, which showed a way to introduce warehouse receipt system within existing legal and regulatory framework. It was the first Exchange to complete the contractual groundwork for dematerialization of the warehouse receipts. Innovation is the way of life at NMCE.

NMCE follows best international risk management practices. The contracts are marked to market on daily basis. The system of upfront margining based on Value at Risk is followed to ensure financial security of the market. In the event of high volatility in the prices, special intra-day clearing and settlement is held. NMCE has also set up a Trade Guarantee Fund. Well-capitalized in-house clearinghouse assumes counter-party risk of settlement. NMCE was the first to initiate process of dematerialization and electronic transfer of warehoused commodity stocks. The unique strength of NMCE is its settlements via a Delivery Backed System, an imperative in the commodity trading business. These deliveries are executed through a sound and reliable Warehouse Receipt System, leading to guaranteed clearing and settlement

**TURNOVER ON COMMODITY FUTURES MARKETS**

EXCHANGE	2005	2006	2007
MCX	165,147	961,633	2,293,000
NCDEX	266,338	1,066,686	1,167,000
NMCE	13,988	18,385	117,000
OTHER EXCHANGES	126,286	108,418	120,000
ALL EXCHANGES	571,759	2,155,122	3,697,000

**1.1.4. PLAYERS IN COMMODITY FUTURES MARKET:**

➤ **Hedgers:**

Futures markets believed to be originally developed to meet the requirements of hedgers or producers who wanted to safeguard against the price risk. However the scope of commodity futures has expanded later avoids the risk and enters into contract with speculator

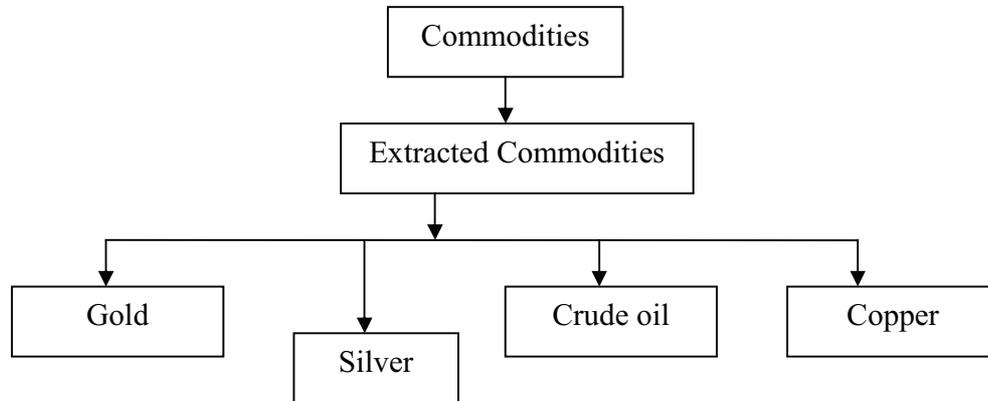
➤ **Speculators:**

Speculation is the opposite of hedging speculators on the other hand wish to take risk that hedgers want to avoid with a motive to make profits and provide the necessary liquidity through bids and offers that result into a continuous flow of transactions. Commodities are becoming increasingly attractive to investor and hedge fund managers as an alternative asset class that may allow reduction in overall risk of financial portfolio and enhance returns.

➤ **Arbitrager:**

Arbitrage is a risk-less profit realized by simultaneous trading in two or more markets. However arbitrage opportunities are very desirable but not easy to uncover, as they do not longer since the prices get adjusted soon with buying and selling.

### **1.1.5. Commodity Products:**



### **Other Commodities**

- Bullion (Gold, Silver)
- Oil & Oil Seeds (Castor Oil, Mustard Oil etc.,)
- Spices (Cardomom, Jeera, Pepper, Red Chilli, Turmeric)
- Metal (Aluminium, Copper, Lead, Nickel, Zinc, Tin, etc.,)
- Fiber (Cotton, Kapas, Raw jute)
- Pulses (Chana, Masur, Yellow peas)
- Cereals (Maize)
- Energy (Crude oil, Natural Gas)
- Plantations (Cashew, Coffee, Rubber, Areca nut)
- Petrochemicals (PVC, Polypropylene)
- Weather (Carbon Credit)

#### **1.1.5.1. Gold:**

A very ductile and malleable, brilliant yellow precious metal that is resistant to air and water corrosion. Gold is a unique asset, based on few Basic characteristics. First, it is primarily a monetary asset and partly a commodity. As currency, gold is a universal currency, two thirds of gold's total accumulated holdings relate to "store of value" considerations. Gold is the oldest precious metal known to man. Therefore, it is a timely subject for several reasons. It is the opinion of the more objective market experts that the traditional investment vehicles of stocks and bonds are in the areas of their all-time highs and may be due for a severe correction.

- Gold is primarily a monetary asset used to hedge against inflation rather than being a commodity.
- Even today two-thirds of total accumulated holding are with the central banks holding as reserves and private players.
- Less than one-third of gold's accumulated holding is as a commodity for jewelry in western markets and usage in industry.
- Gold has more stock than demand, so the price of gold is driven by the stock equilibrium rather than of flow equilibrium.

The price of gold is fixed twice daily in London by the five members of the London gold pool, all members of the London Bullion Market Association. The fixes start at 10.30 a.m., and 3.00 p.m. London time. The London Gold Market closed in 1939, and re-opened on 22nd March 1954. The length of time taken to reach an agreed fixing price can vary. Nowadays it is often reached in minutes, but we have known in take several hours on at least one occasion. There are a number of common misconceptions about the London gold fix. London Bullion Market Association represents the interests of the participants of the London Bullion Market.

One of its primary tasks is to ensure that refiners of gold and silver meet the required standards of quality before their inclusion in the Market's Good Delivery lists. The Association maintains close links with the Bank of England, the latter being

### Impact of Forex on Commodity Market for the year 2007

responsible for the supervision of the most active members of the market and for publishing the Code of Conduct. Price is actually fixed in pounds sterling, (GBP), US dollars and Euros.

The bullion market represented by Gold and Silver is another major market in India. The Reserve Bank of India's long-term focus is on creating an environment conducive for more productive use of Gold asset. RBI also closely monitors the Global Bullion markets and has provided the necessary impetus for gold market reforms in India by helping in evolving what may be termed as the New Gold Policy. As a central bank, RBI's interest in gold is due to the fact that gold has the characteristics of currency.

It is a precious metal that is very soft when pure (24 Kt.). Gold is the most malleable (hammer able) and ductile (able to be made into wire) metal. Gold is alloyed (mixed with other metals, usually silver and copper) to make it less expensive and harder. The purity of gold jewelry is measured in karats. Some countries hallmark gold with a three-digit number that indicates the parts per thousand of gold. In this system, "750" means 750/1000 gold (equal to 18K); "500" means 500/1000 gold (equal to 12K). Alloyed gold comes in many colors. Process by which the daily price is set for gold traded on the spot market. It occurs in London, Paris, and Zurich at 10:30 A.M. and 3:30 P.M. London time of every business day. This price is the average price at which all major bid orders are filled, and is set by gold trading specialists at gold trading financial institutions operating in these cities.

#### **Major gold producing countries**

- South Africa
- United States
- Australia
- China
- Canada
- Russia
- Indonesia Etc.,

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**Gold Contract Details:**

<b>Trading Basis</b>	
<b>Trading Unit</b>	1 Kg
<b>Quotation/Base Value</b>	10 grams
<b>Maximum Order Price</b>	10 Kg
<b>Tick Size</b> (minimum price movement)	Re. 1 per 10 grams
<b>Daily Price Limits</b>	2.5%
<b>Price Quote</b>	Ex-Mumbai (inclusive of all taxes and levies relating to import duty, customs and sales tax calculated @ 1% on landed cost but excluding any other additional tax or surcharge on sales tax, local taxes and octroi.)
<b>Initial Margin</b>	3.5 %
<b>Special Margin</b>	In case of additional volatility, a special margin of 2 % or such other percentage, as deemed fit, will be imposed immediately on both buy and sale side in respect of all outstanding position, which will remain in force for next 3 days, after which the special margin will be relaxed.
<b>Delivery Basis</b>	
<b>Delivery Unit</b>	1 Kg
<b>Delivery Center(s)</b>	Mumbai and Ahmedabad at designated Clearing House facilities of Group 4 Securities at these centers.
<b>Quality Specifications</b>	995purity It should be serially numbered Gold bars supplied by LBMA approved suppliers or other suppliers as may be approved by MCX to be submitted alongwith supplier's quality certificate.
<b>If the seller offers delivery of 999 purity</b>	Seller will get a proportionate premium and sale proceeds will be calculated in the manner of Rate of delivery* 999/ 995 If the quality is less than 995, it is rejected.

### **1.1.5.2. Crude oil:**

The Indian government has now permitted oil companies in India to hedge against commodity price risks while importing crude and petroleum products. This initiative has been taken by the Indian government in a bid to protect the economy from the volatility of international crude prices. All oil companies having underlying exposures in crude and petroleum products will now be allowed to import and hedge future prices against the drastic volatility of the prices in the hydrocarbon sector. This has almost become a necessity for a country like India, which imports 70 percent of its petroleum requirement and needs to be protected against such price movements in the International oil markets.

Oil companies such as the Indian Oil Corporation (IOC), Reliance Petroleum and MRPL are expected to be the beneficiaries of this move from the government. The hedging facility is to be subjected to detailed guidelines to be issued by the RBI and is expected to make Indian producers more efficient and enable them to compete in the International markets.

OPEC stands for 'Organization of Petroleum Exporting Countries'. It is an organization of eleven developing countries that are heavily dependent on oil revenues as their main source of income. The current Members are Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates and Venezuela. OPEC controls almost 40 percent of the world's crude oil. It accounts for about 75 per cent of the world's proven oil reserves. Its exports represent 55 per cent of the oil traded internationally.

- 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.
- Almost all industries including agriculture are dependent on oil in one way or other. Oil & lubricants, transportation, petrochemicals, pesticides and insecticides, paints, perfumes, etc. are largely and directly affected by the oil prices.
- Aviation gasoline, motor gasoline, naphtha, kerosene, jet fuel, distillate fuel oil, residual fuel oil, liquefied petroleum gas, lubricants, paraffin wax, petroleum

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coke, asphalt and other products are obtained from the processing of crude and other hydrocarbon compounds.

**Oil Contract & units:**

- **1 Tonne** = 7.33 Barrel  
= 1.165 Cubic Metres (kilolitres)
- **1 Barrel** = 0.136 Tonnes  
= 0.159 Cubic Metres (Kilolitres)

<b>Trading Basis</b>	
<b>Trading Period</b>	Monday through Saturdays
<b>Trading Session</b>	Monday to Friday: 1st session: 10.00 am to 5.00 pm 2nd session: 5. 30 pm to 8.00 pm Saturdays: 10.00 am to 2.00 pm
<b>Trading Unit</b>	100 barrels
<b>Quotation/Base Value</b>	Rs. per barrel
<b>Maximum Order Price</b>	10,000 barrels
<b>Tick Size (minimum price movement)</b>	Re. 1 per 10 barrels
<b>Price Quote</b>	Ex - Mumbai excluding all taxes and levies
<b>Daily Price Limits</b>	4%
<b>Initial margin</b>	5 %
<b>Special Margin</b>	In case of additional volatility, a special margin at such percentage, as deemed fit, will be imposed immediately.
<b>Delivery Basis</b>	
<b>Delivery Unit</b>	50,000 barrels with +/- 2% tolerance limit
<b>Delivery Center(s)</b>	Port installation at Mumbai / JNPT port
<b>Quality Specifications</b>	Sulfur 0.42% by weight or less, API Gravity: Between 37 degree - 42 degree, All volumes are defined at 60 degree Fahrenheit

### 1.1.5.3. Copper

Copper ranks third in world metal consumption after steel and aluminum. It is a product whose fortunes directly reflect the state of the world's economy. Copper is the best non-precious metal conductor of electricity. The metal's exceptional strength, ductility, and resistance to creeping and corrosion, makes it the preferred and safest conductor for building wiring.

Copper is also used in power cables, either insulated or uninsulated, for high, medium and low voltage applications. Copper is an essential component of energy efficient motors and transformers and automobiles.

Copper has a wide range of attributes which is why it has so many applications today. It was found to be a very efficient conductor of electricity and heat as well as being flexible, strong, durable and resistant to corrosion. As such it has been key to many of man's technological advances, the two biggest being telegraphic communications and electricity. But it is also widely used for heating, air conditioning, plumbing, roofing, brass fittings and for so much of the electrical environment we now take for granted: TV, radio, lighting, computers, mobile phones etc all require copper wiring, electrical leads, adapters, transformers and motors.

#### **Copper Contract Details:**

<b>Trading</b>	
<b>Trading Unit</b>	1 Ton
<b>Quotation/Base Value</b>	1 Kg
<b>Maximum Order Price</b>	1MT
<b>Tick Size</b> (minimum price movement)	5 paise per Kg
<b>Daily Price Limits</b>	4 %

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<b>Price Quote</b>	Ex-Bhiwandi (exclusive of all taxes and levies relating to import duty, customs, sales tax, special additional duty and octroi). At the time of delivery, the buyer has to pay these taxes and levies in addition to delivery order rate.
<b>Initial Margin</b>	5%
<b>Special Margin</b>	In case of additional volatility, a special margin of 2 % or such other percentage, as deemed fit, will be imposed immediately on both buy and sale side in respect of all outstanding position, which will remain in force for next 3 days, after which the special margin will be relaxed.
<b>Maximum Allowable Open Position</b>	For individual clients: 1000 MT For a member collectively for all clients: Not more than 25 % of the market's open position in a contract at any point of time
<b>Delivery</b>	
<b>Delivery Unit</b>	9 MT with tolerance limit of + / - 1 % (90 Kg)
<b>Delivery Center(s)</b>	Within 20 Kilometers outside Mumbai octroi limit.
<b>Quality Specifications</b>	Grade 1 electrolytic copper as per B115 specification

#### 1.1.5.4. Silver

A soft white precious univalent metallic element having the highest electrical and thermal conductivity of any metal; occurs in argentite and in free form; used in coins and jewellery and tableware and photography coins made of silver.

Silver's unique properties include its strength, malleability, ductility, electrical and thermal conductivity, sensitivity to high reflectance of light and despite it being classified as a precious metal, its reactivity which is the basis for its use in catalysts and photography. World mine production is more a function of the prices of other metals. Often a faster growth in demand against supply leads to drop in stocks with government and investors. Economically viable primary silver mine is a function of the world silver price level.

Silver demand stands on three pillars – jewellery & silverware, industrial and photography, which are in turn factors of monsoon & agricultural output, overall

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industrial growth and performance of the tourism & services industry at large, respectively. In India the real industrial demand occupies a small share in the total industrial demand of silver in sharp contrast to most developed economies like Japan and US. In India like Gold the Silver demand is also determined to a large extent by its price level and volatility.

**Silver Contract Details:**

<b>Trading</b>	
<b>Trading Unit</b>	30 Kg
<b>Quotation/Base Value</b>	1 Kg.
<b>Maximum Order Price</b>	600 Kg
<b>Tick Size (minimum price movement)</b>	Re. 1 per Kg.
<b>Daily Price Limits</b>	4%
<b>Price Quote</b>	Ex-Ahmedabad (inclusive of all taxes and levies relating to import duty, customs and sales tax calculated @ 1% on landed cost but excluding any other additional tax or surcharge on sales tax, local taxes and octroi)
<b>Initial Margin</b>	5 %
<b>Special Margin</b>	In case of additional volatility, a special margin of 2 % or such other percentage, as deemed fit, will be imposed immediately on both buy and sale side in respect of all outstanding position.
<b>Maximum Allowable Open Position</b>	For individual client: 50 MT collectively for all contracts in Silver (i.e. including Silver M and Silver HNI contracts)
<b>Delivery</b>	
<b>Delivery Unit</b>	30 Kg
<b>Delivery Center(s)</b>	Ahmedabad at designated Clearing House facilities of Group 4 securities.
<b>Delivery period</b>	1st to 6th of the contract maturity month
<b>Quality Specifications</b>	Grade: 999 and Fineness: 999 (as per IS 2112: 1981) If it is below 999 purity it is rejected. It should be serially numbered silver bars supplied by LBMA approved suppliers or other suppliers as may be approved by MCX.

### **1.1.6. Foreign Exchange:**

The foreign exchange (currency or forex or FX) market exists wherever one currency is traded for another. It is by far the largest financial market in the world, and includes trading between large banks, central banks, currency speculators, multinational corporations, governments, and other financial markets and institutions. The average daily trade in the global forex and related markets currently is over US\$ 3 trillion.

- Dollar (US Currency)
- Euro (European Currency)

#### **Dollar:**

The dollar (currency code USD) is the unit of currency of the United States. The U.S. dollar has also been adopted as the official and legal currency by the governments in a few other countries. The U.S. dollar is normally abbreviated as the dollar sign, \$, or as USD or US\$ to distinguish it from other dollar-denominated currencies and from others that use the \$ symbol. It is divided into 100 cents.

#### **Euro:**

The euro (currency sign: €; banking code: EUR) is the official currency of the European Union (EU), used in 15 member states, known collectively as the Eurozone (Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovenia, Spain). It is also used in 9 other countries around the world, 7 of those being in Europe. Hence it is the single currency for over 320 million Europeans. Including areas using currencies pegged to the euro, the euro directly affects close to 500 million people worldwide. The euro was introduced to world financial markets as an accounting currency in 1999 and launched as physical coins and banknotes on 1 January 2002. It replaced the former European Currency Unit (ECU) at a ratio of 1:1.

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The euro is managed and administered by the Frankfurt-based European Central Bank (ECB) and the Eurosystem (composed of the central banks of the euro zone countries). As an independent central bank, the ECB has sole authority to set monetary policy. The Eurosystem participates in the printing, minting and distribution of notes and coins in all member states, and the operation of the Eurozone payment systems.

#### **Dollar vs Euro:**

Not long after the introduction of the euro (€ ; ISO 4217 code EUR) as a cash currency in 2002, the dollar began to depreciate steadily in value. As U.S. trade and budget deficits continued to increase, the euro started rising in value. By December 2004, the dollar had fallen to new lows against all major currencies; the euro rose above \$1.36/€ (under €0.74/\$) for the first time, in contrast to previous lows in early 2003 (€0.87/\$). In the first quarter of 2004 the U.S. dollar, with the advantage of Federal Reserve's policy of raising the interest rates, regained some standing against all major currencies, climbing from €0.78/\$ to €0.84/\$. However, all gains were lost in the second half of 2004, and the dollar stood at €0.74/\$ at the end of 2004. Since 2002, the only year in which the dollar actually recovered against the euro was 2005. Although some analysts previewed the dollar dropping as far as \$1.60/€ (€0.63/\$), it finished 2005 with an increase against the euro, climbing to €0.83/\$.

An interest rate reduction by the Federal Reserve on September 18, 2007, raised the euro's value significantly and caused the dollar to fall below €0.70 one month later, to new record lows. Economists like Alan Greenspan suggest that another reason for the continued fall of the dollar is its decreasing role as the world's reserve currency. Jim Rogers declared that he thinks the dollar's value will fall even further, especially against the Chinese yuan. Chinese officials signaled plans to diversify the nation's \$1.43 trillion reserve in response to a falling U.S. currency which also set the dollar under pressure. The dollar sank to new lows against the euro in the days following 4 March 2008, following a series of dour reports on the U.S. economy and expectations that the Federal Reserve will continue slashing interest rates.

## 1.2 REVIEW OF LITERATURE

❖ **The study on market integration based on the stock market, foreign exchange market and the Bullion market.**

A study by **Manjri Damele, Yamini Karmarkar, G Kawadia** analyzes the market integration based on the stock market, foreign exchange market and the Bullion market. This study shows that there is an inverse relationship between BSE Sensex and exchange rate and hence an increase in BSE Sensex decreases the exchange rate. The rupee Dollar exchange rate is considered to see the movement in Forex market. The prices of Gold and Silver were considered to represent the bullion market. The compound growth rate is calculated using annual data from 1979 to 2001. For calculating the coefficient of variance their study used monthly averages of all indicators for the period of 1991-92, 1992-93 and 2000-2001. The regression analysis is done to estimate the response functions in these markets based on the daily closing prices data for the period April 2002 and May 2002.

**Source: Finance India, Vol XVIII No 2, June 2004, Pages 859-869**

❖ **A analyzes on Gold, Crude and exchange rates.**

A study by **K L Rao and Ravinder Kumar** analyzes Gold, Crude and exchange rates. The increase in the international spot prices of the precious yellow metal in the year 2007 is driven by the weak US economic performance, increase in crude oil prices, and inflation in the US housing sector and disequilibrium between demand and supply as compared to the previous years. The gain in gold price was not just because of the weakening dollar but supported by the supply and demand, expectation of rising interest rate by the US federal government and some geopolitical factors also.

**Source: Treasury Management, September 2007**

❖ **“Is Gold a Hedge or a Safe Haven? an Analysis of Stocks, Bonds and Gold”**

**Dirk Baur** has addresses two questions. First, they investigate whether gold is a hedge against stocks and/or bonds and second, they investigate whether gold is a safe haven for investors if either stocks or bonds fall. A safe haven is defined as a security that loses none of its value in case of a market crash. This is counterpoised against a hedge, defined as a security that does not co-move with stocks or bonds on average. This paper studies constant and time-varying relationships between stocks, bonds and gold in order to investigate the existence of a hedge and a safe haven. The empirical analysis examines US, UK and German stock and bond prices and returns and their relationship with the Gold price. We find that (i) Gold is a hedge against stocks, (ii) Gold is a safe haven in extreme stock market conditions and (iii) Gold is a safe haven for stocks only for 15 trading days after an extreme shock occurred.

**Source: [www.ssrn.com](http://www.ssrn.com)**

❖ **The Sagging Agricultural Commodity Exchanges:  
Growth Constraints and Revival Policy Options**

**K.G. Sahadevan, Ph.D, Associate Professor, Indian Institute of Management**, Commodity derivatives have a crucial role to play in managing price risk especially in agriculture dominated economies. However, they have been utilized in a very limited scale in India. As long as prices of many commodities are restrained to certain extent by Government intervention in production, supply and distribution, forwards and futures markets for hedging price risk in those commodities have only limited practical relevance. A review of the nature of institutional and policy level constraints facing this segment calls for more focused and pragmatic approach from government, the regulator and the exchanges for making the agricultural futures markets a vibrant segment for risk management.

**Source: Economic and Political Weekly, Vol XXXVII No. 30, July 27-Aug. 02.**

❖ **The commodity question: new thinking on old problems - Volatility, Decline in prices**

**Peter Gibbon Danish, Institute for International Studies,** This paper reviews more and less mainstream policy options in relation to the 'commodity question' in the light both of its classical definition and of the emerging concern about oligopoly. It begins by updating the evidence concerning commodity price decline and volatility, and examining the implications of these phenomena for macro-economic performance and livelihoods in producing countries.

**Source: [www.iis.co.uk](http://www.iis.co.uk)**

❖ **Futures Trading and Investor Returns: An Investigation of Commodity Market Risk Premiums**

**Katherine Dusak,** the long-standing controversy over whether speculators in a futures market earn a risk premium is analyzed within the context of the capital asset pricing model recently developed by Sharpe, Lintner, and others. Under that approach the risk premium required on a futures contract should depend not on the variability of prices but on the extent to which the variations in prices are systematically related to variations in the return on total wealth. The systematic risk was estimated for a sample of wheat, corn, and soybean futures contracts over the period 1952 to 1967 and found to be close to zero in all three cases. Average realized holding period returns on the contracts over the same period were close to zero.

**Source: *Journal of Political Economy*, Vol. 81, No. 6 (Nov.-Dec., 1973), pp. 1387-1406**

❖ **Agricultural commodity markets in India: Policy issues for growth**

**Susan Thomas** has studied the strengthening institutions in spot and derivative markets for commodities is a necessary ingredient of the liberalization process in agriculture, and can impact upon the lives of millions. In this paper, we describe the existing market design prevalent on both the spot and the futures markets. We show some evidence on the role played by the nascent futures markets in price discovery. We

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document the problems of both the spot and the futures markets. We offer three policy proposals: using reference rates for strengthening transparency, exploring a greater role for cash settlement, and treating warehouse receipts as securities.

**Source: <http://www.igidr.ac.in/susant@mayin.org>, May 21 2003**

❖ **Commodity Derivatives and Futures Trading: A Study of the Sources of Market Failure and the Policy Options for its Revival, Report of consulting assignment for Forward Markets Commission, Mumbai, August 2003.**

**Ravinder Kumar**, he studies the lack of standards and certification Prices can be quoted and compared across the country once there is a good standardization of commodities. Once commodities can be clearly categorized as one standard as opposed to the other, then prices become more meaningful for comparison at one Mandy versus another. These standards should be applicable equally across all states.

**Source: [www.fmc.com](http://www.fmc.com)**

### **1.3 STATEMENT OF THE PROBLEM**

Investments have become basic necessity for everyone. In our country there is a rapid growth for investment. More number of investors is investing their funds in different types of investment opportunities. Investing wisely is a function of investor's specific needs and goals. The prices of gold, crude oil, silver and copper experience fluctuations due to like factors demand and supply, foreign exchange fluctuations, returns on stock market, and macro economic variables. Jewellery made of gold and silver has a long tradition in India as an auspicious gift for Indian marriages, and a lifetime saving for brides, while the share market was regarded with some trepidation.

Though record-breaking run by India's commodities market has elevated its profile in society, there is a big impact of dollar and euro on Indian commodity market, which could affect the future prospects and hence there is a need to find strategies and tactics to overcome and also to judge any possible risk due to various influencing factors like demand and supply, macro economic factors, foreign exchange fluctuations etc. So that stability and growth could be ensured.

#### **1.4 OBJECTIVES OF THE STUDY**

**The Primary objective of the study is**

- ❖ To study the impact of forex on commodity market for India Infoline Limited for the year 2007-2008.

**The Secondary objectives of the study are.**

- ❖ To find the strength and relationship between dollar with gold, crude oil, copper, and silver of Indian economy.
- ❖ To find the strength and relationship between euro with gold, crude oil, copper, and silver of Indian economy.
- ❖ To find out the time lag which influencing the pricing dollar and euro on the gold, crude oil, copper, and silver.
- ❖ To predict the price of gold, crude oil, copper, and silver for variations in dollar and euro.

## **1.5 SCOPE OF THE STUDY**

This study shows the relationship between Forex (Dollar, Euro) and Commodities (Gold, Copper, Silver, and Crude oil) also tries to predict the rate of change in commodities prices when dollar and euro reaches a particular Level.

## **1.6 METHODOLOGY**

### **1.6.1 TYPE OF STUDY**

The type of study used for this project is analytical research. Researcher has to use the facts and information already available and analyse these to make critical evaluation of the impact of forex over selected commodity.

### **1.6.2 RESEARCH DESIGN**

Research design constitutes the blueprint for the collection, measurements, and analysis of the data. The present study is based on descriptive research design. The objective of a descriptive study is to learn who, what, when, where, and how from the topic. The present study is about finding the impact of dollar and euro on commodity market and also to find variables which have direct changes on commodity market.

### **1.6.3 DATA COLLECTION**

#### **1.6.3.1. Nature of the data:**

The data used is the secondary data.

#### **1.6.3.2. Source of data:**

Secondary Data in this study includes Magazines, Journals and websites. Data were collected for a period of one year. As the commodity market was in extreme conditions and number of fluctuations was seen in the year 2007, it was chosen for collection of data. The data for the year 2007 is collected on the daily basis for the purpose of analysis. Gold prices are collected for one troy ounce which equals 31.1034768 grams. Crude oil is measured in barrels. Copper and silver are measured in kilograms.

#### **1.6.4 Tools of Analysis:**

The tools used for this project are correlation and regression. The explanation for these techniques is given below.

##### **1.6.4.1 Correlation:**

Correlation is a statistical technique which can show whether and how strongly pairs are related. For example, height and weight are related-taller people tend to be heavier than short people. The relationship isn't perfect. People of the same height vary in weight, and anyone can easily think of two people where the shorter one is heavier than the taller one. Nonetheless, the average weight of people 5'5" is less than the average weight of people 5'6", and their average weight is less than that of people 5'7", etc., Correlation can tell just how much of the variation in peoples' weights is related to their heights.

Although this correlation is fairly obvious the data may contain unsuspected correlations. One may also suspect there are correlations, but don't know which are strongest. An intelligent correlation analysis can lead to a greater understanding of the data.

##### **1.6.4.2 Regression:**

Regression analysis is a statistical procedure for analyzing associative relationships between a metric dependent variable and one or more independent variables. A regression analysis helps in determining the following objectives in the study:

Determines whether the independent variable explain a significant variation in the dependent variable: i.e., whether a relationship exists, by testing hypothesis constructed. It determines strength of relationship between dependent and independent variables. Forex and commodity were alternative proposals. The results were expressed through different analysis for each of the above cases.

## **1.7 LIMITATIONS OF THE STUDY**

- Correlation was calculated for one year data, in order to get a proper picture of data over various time periods that has to be analyzed.
- Gold and crude oil prices are in Indian market price was taken it would not give the appropriate picture. Because Gold, silver and copper was priced in London market price and crude are priced in dollars.

## **1.8 CHAPTER SCHEME**

### **Chapter 1: Introduction**

The first chapter deals with the background, objectives, scope of the study, methodology used in data collection, limitations of the study, and brief introduction of all the chapters.

### **Chapter 2: Organization Profile**

Organization profile includes details on the history of the organization, management and organization structure, product profile and market potential, competitive strength of the company and a brief description on various functional areas of the organization.

### **Chapter 3: Macro –Micro Economic Analysis**

Macro-Micro analysis deals with the prevailing scenario of the organization with respect to its respective industry.

### **Chapter 4: Data Analysis and Interpretation**

The Chapter mainly deals with various correlation and regression analysis related to find the impact over forex on commodity market.

### **Chapter 5: Conclusion**

Conclusion includes the results and the discussions put forth regarding the performance of the market for the 2007 year and the considered recommendations.

*Impact of Forex on Commodity Market for the year 2007*

***ORGANISATION PROFILE***

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## **2. ORGANISATION PROFILE:**

### **2.1. HISTORY OF THE ORGANISATION**

In 1995, a group of professionals formed a company called “Probity Research and Services pvt ltd”. The name was later changed to “India Infoline ltd”. The objective was to provide unbiased independent information to market intermediaries and investors. In 1999, the company made all the research available free on the web, the number of users jump from 250 to 2.5 million.

In 2001, the internet bubble started bursting faster than anybody could have imagined. India Infoline decided to narrow its focus on business where it could leverage its core competencies to the maximum. The key business lines that emerged were mutual funds, life insurance and e-broking. They also forayed into portfolio management services and commodities broking, again leveraging upon their core competencies in research and technology.

In the last ten years, India Infoline has faced numerous ups and downs, but has never compromised on integrity. They continue to ensure highest standards of corporate governance. Turnover of the company is 52.5 bn it will increase over 66% over next quater.

#### **2.1.2. SISTER CONCERNS**

##### **2.1.2.1. India Infoline Group**

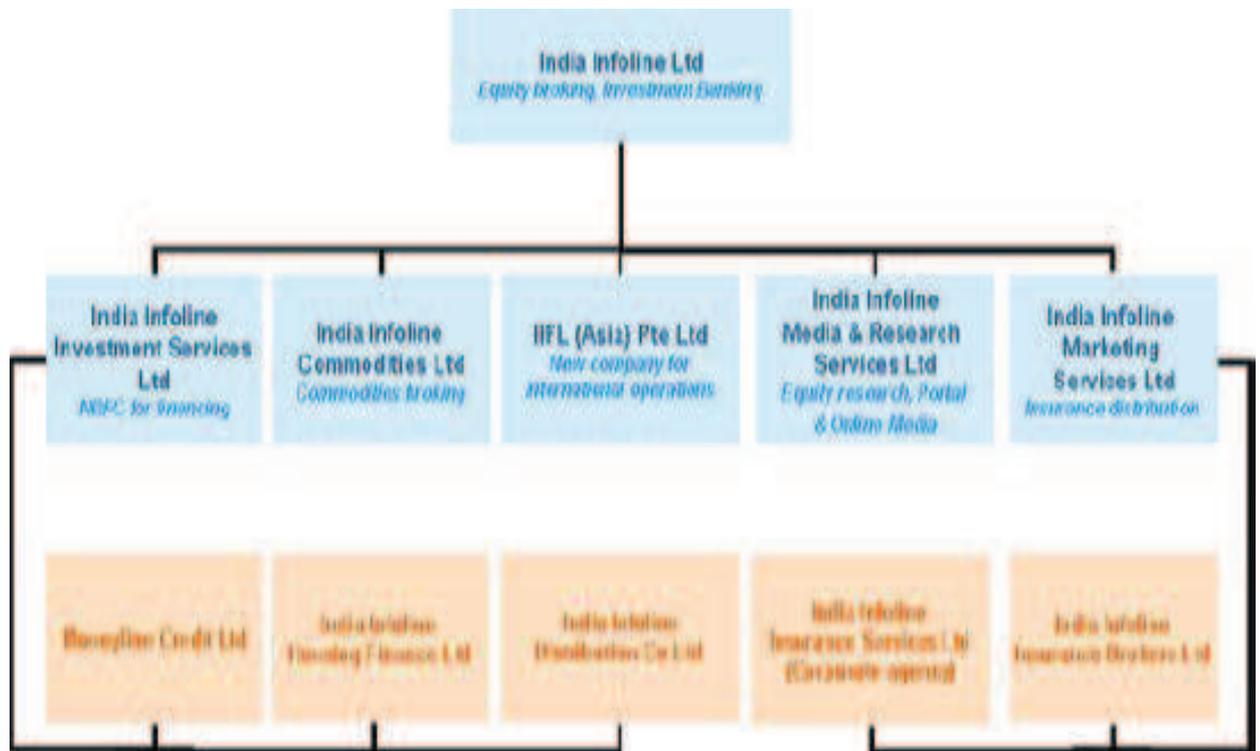
The India Infoline group, comprising the holding company, India Infoline Limited and its wholly-owned subsidiaries, straddle the entire financial services space with offerings ranging from Equity research, Equities and derivatives trading, Commodities trading, Portfolio Management Services, Mutual Funds, Life Insurance, Fixed deposits, GOI bonds and other small savings instruments to loan products and Investment banking. India Infoline also owns and manages the websites [www.indiainfoline.com](http://www.indiainfoline.com) and [www.5paisa.com](http://www.5paisa.com).

The company has a network of 596 branches spread across 345 cities and towns. It has more than 500,000 customers.

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**2.1.2.2. India Infoline Limited**

India Infoline Limited is listed on both the leading stock exchanges in India, viz. the Stock Exchange, Mumbai (BSE) and the National Stock Exchange (NSE) and is also a member of both the exchanges. It is engaged in the businesses of Equities broking, Wealth Advisory Services and Portfolio Management Services. It offers broking services in the Cash and Derivatives segments of the NSE as well as the Cash segment of the BSE. It is registered with NSDL as well as CDSL as a depository participant, providing a one-stop solution for clients trading in the equities market. It has recently launched its Investment banking and Institutional Broking business.



A SEBI authorized Portfolio Manager; it offers Portfolio Management Services to clients. These services are offered to clients as different schemes, which are based on differing investment strategies made to reflect the varied risk-return preferences of clients.

**2.1.2.3. India Infoline Media and Research Services Limited:**

The content services represent a strong support that drives the broking, commodities, mutual fund and portfolio management services businesses. Revenue generation is through the sale of content to financial and media houses, Indian as well as global.

It undertakes equities research which is acknowledged by none other than Forbes as 'Best of the Web' and '...a must read for investors in Asia'. India Infoline's research is available not just over the internet but also on international wire services like Bloomberg (Code: IILL), Thomson First Call and Internet Securities where India Infoline is amongst the most read Indian brokers.

**2.1.2.4. India Infoline Commodities Limited:**

India Infoline Commodities Pvt Limited is engaged in the business of commodities broking. Our experience in securities broking empowered us with the requisite skills and technologies to allow us offer commodities broking as a contra-cyclical alternative to equities broking. We enjoy memberships with the MCX and NCDEX, two leading Indian commodities exchanges, and recently acquired membership of DGCX. We have a multi-channel delivery model, making it among the select few to offer online as well as offline trading facilities.

**2.1.2.5. India Infoline Marketing & Services:**

India Infoline Marketing and Services Limited is the holding company of India Infoline Insurance Services Limited and India Infoline Insurance Brokers Limited.

(a) India Infoline Insurance Services Limited is a registered Corporate Agent with the Insurance Regulatory and Development Authority (IRDA). It is the largest Corporate Agent for ICICI Prudential Life Insurance Co Limited, which is India's largest private Life Insurance Company. India Infoline was the first corporate agent to get licensed by IRDA in early 2001.

### Impact of Forex on Commodity Market for the year 2007

(b) India Infoline Insurance Brokers Limited India Infoline Insurance Brokers Limited is a newly formed subsidiary which will carry out the business of Insurance broking. We have applied to IRDA for the insurance broking licence and the clearance for the same is awaited. Post the grant of license, we propose to also commence the general insurance distribution business.

#### **2.1.2.6. India Infoline Investment Services Limited:**

Consolidated shareholdings of all the subsidiary companies engaged in loans and financing activities under one subsidiary. Recently, Orient Global, a Singapore-based investment institution invested USD 76.7 million for a 22.5% stake in India Infoline Investment Services. This will help focused expansion and capital raising in the said subsidiaries for various lending businesses like loans against securities, SME financing, distribution of retail loan products, consumer finance business and housing finance business. India Infoline Investment Services Private Limited consists of the following step-down subsidiaries:

- India Infoline Distribution Company Limited (distribution of retail loan products)
- Money line Credit Limited (consumer finance)
- India Infoline Housing Finance Limited (housing finance)

#### **2.1.2.7. IIFL (Asia) Private Limited:**

IIFL (Asia) Private Limited is wholly owned subsidiary which has been incorporated in Singapore to pursue financial sector activities in other Asian markets. Further to obtaining the necessary regulatory approvals, the company has been initially capitalized at 1 million Singapore dollars.

#### **2.1.3. Milestones**

- Incorporated on October 18, 1995 as Probity Research & Services by a group of professionals.
- Launched Internet portal [www.indiainfoline.com](http://www.indiainfoline.com) in May 1999 – Rated as “Best of the Web” by Forbes.

### Impact of Forex on Commodity Market for the year 2007

- Launched 5paisa.com – revolutionized brokerage rates.
- Largest distributor of ICICI Prudential Life Insurance.
- Commenced distributon of personal finance products like mutual funds and RBI bonds in april 2000.
- Became a depository participant of NSDL in Septemper 2001.
- Launched stock messaging service in May 2003.
- Acquired commodities broking license in March 2004.
- Launched portfolio management services in August 2004.
- Listed on NSE and BSE on May 2005.
- Acquired NBFC license in May 2005.
- Acquired 75% stake holding in money tree consultancy services in October 2005.
- Acquired 100% equity marchmont capital advisors pvt ltd in December 2005.
- Bennett coleman and co ltd (BCCL) invested twenty crores in India infoline in December 2005.
- Became a depository participant of CDSL in june 2006.
- Entered into an alliance with bank of baroda e-trading in February 2007.
- IRDA license for insurance broking in april 2007.

## **2.2. MANAGEMENT**

### **Mr. Nirmal Jain**

Nirmal Jain, MBA (IIM, Ahmedabad) and a Chartered and Cost Accountant, founded India's leading financial services company India Infoline Ltd. in 1995, providing globally acclaimed financial services in equities and commodities broking, life insurance and mutual funds distribution, among others. Mr. Jain began his career in 1989 with Hindustan Lever's commodity export business, contributing tremendously to its growth.

### Impact of Forex on Commodity Market for the year 2007

He was also associated with Inquire-Indian Equity Research, which he co-founded in 1994 to set new standards in equity research in India.

#### **Mr. R Venkataraman**

R Venkataraman, co-promoter and Executive Director of India Infoline Ltd., is a B. Tech (Electronics and Electrical Communications Engineering, IIT Kharagpur) and an MBA (IIM Bangalore). He joined the India Infoline board in July 1999. He previously held senior managerial positions in ICICI Limited, including ICICI Securities Limited, their investment banking joint venture with J P Morgan of USA and with BZW and Taib Capital Corporation Limited. He was also Assistant Vice President with G E Capital Services India Limited in their private equity division, possessing a varied experience of more than 16 years in the financial services sector.

#### **2.2.1. THE BOARD OF DIRECTORS**

Apart from Nirmal Jain and R Venkataraman, the Board of Directors of India Infoline comprises:

#### **Mr. Sat Pal Khattar (Non Executive Director)**

Mr. Sat Pal Khattar, - Board member since April 2001 - Presidential Council of Minority Rights member, Chairman of the Board of Trustee of Singapore Business Federation, is also a life trustee of SINDA, a non profit body, helping the under-privileged Indians in Singapore. He joined the India Infoline board in April 2001. Mr. Khattar is a Director of public and private companies in Singapore, India and Hong Kong; Chairman of Guocoland Limited listed in Singapore and its parent Guoco Group Ltd listed in Hong Kong, a leading property company of Singapore, China and Malaysia. A Board member of India Infoline Ltd, Gateway Distriparks Ltd — both listed — and a number of other companies he is also the Chairman of the Khattar Holding Group of Companies with investments in Singapore, India, UK and across the world.

**Mr. Nilesh Vikamsey (Independent Director)**

Mr. Vikamsey, Board member since February 2005 - a practising Chartered Accountant and partner (Khimji Kunverji & Co., Chartered Accountants), a member firm of HLB International, headed the audit department till 1990 and thereafter also handles financial services, consultancy, investigations, mergers and acquisitions, valuations etc; an ICAI study group member for Proposed Accounting Standard — 30 on Financial Instruments — Recognition and Management, Finance Committee of The Chamber of Tax Consultants (CTC), Law Review, Reforms and Rationalization Committee and Infotainment and Media Committee of Indian Merchants' Chamber (IMC) and Insurance Committee and Legal Affairs Committee of Bombay Chamber of Commerce and Industry (BCCI).

Mr. Vikamsey is a director of Miloni Consultants Private Limited, HLB Technologies (Mumbai) Private Limited and Chairman of HLB India.

**Mr. Kranti Sinha (Independent Director)**

Mr. Kranti Sinha — Board member since January 2005 — completed his masters from the Agra University and started his career as a Class I officer with Life Insurance Corporation of India. He served as the Director and Chief Executive of LIC Housing Finance Limited from August 1998 to December 2002 and concurrently as the Managing Director of LICHFL Care Homes (a wholly owned subsidiary of LIC Housing Finance Limited). He retired from the permanent cadre of the Executive Director of LIC; served as the Deputy President of the Governing Council of Insurance Institute of India and as a member of the Governing Council of National Insurance Academy, Pune apart from various other such bodies. Mr. Sinha is also on the Board of Directors of Hindustan Motors Limited, Larsen & Toubro Limited, LICHFL Care Homes Limited, Gremach Infrastructure Equipments and Projects Limited and Cinemax (India) Limited.

## **2.3 Products and Services:**

- Equities
- Portfolio Management Services
- Research
- Commodities
- Mortgages
- Invest online
- SMS
- Insurance
- Wealth Management Services
- Newsletters

### **2.3.1 EQUITIES:**

Indiainfoline provided the prospect of researched investing to its clients, which was hitherto restricted only to the institutions. Research for the retail investor did not exist prior to Indiainfoline. Indiainfoline leveraged technology to bring the convenience of trading to the investor's location of preference (residence or office) through computerised access. Indiainfoline made it possible for clients to view transaction costs and ledger updates in real time.

### **2.3.2. PMS:**

Our Portfolio Management Service is a product wherein an equity investment portfolio is created to suit the investment objectives of a client. We at Indiainfoline invest your resources into stocks from different sectors, depending on your risk-return profile. This service is particularly advisable for investors who cannot afford to give time or don't have that expertise for day-to-day management of their equity portfolio.

### **2.3.3. Research Reports:**

Sound investment decisions depend upon reliable fundamental data and stock selection techniques. Indiainfoline Equity Research is proud of its reputation for, and we want you to find the facts that you need. Equity investment professionals routinely use our research and models as integral tools in their work. They choose Ford Equity Research when they can clear your doubts.

### **2.3.4. Commodities:**

Indiainfoline's extension into commodities trading reconciles its strategic intent to emerge as a one-stop solutions financial intermediary. Its experience in securities broking has empowered it with requisite skills and technologies. The Company's commodities business provides a contra-cyclical alternative to equities broking. The Company was among the first to offer the facility of commodities trading in India's young commodities market (the MCX commenced operations only in 2003). Average monthly turnover on the commodity exchanges increased from Rs 0.34 bn to Rs 20.02 bn. The commodities market has several products with different and non-correlated cycles. On the whole, the business is fairly insulated against cyclical gyrations in the business.

### **2.3.5. Mortgages:**

During the year under review, Indiainfoline acquired a 75% stake in Money tree Consultancy Services to mark its foray into the business of mortgages and other loan products distribution. The business is still in the investing phase and at the time of the acquisition was present only in the cities of Mumbai and Pune. The Company brings on board expertise in the loans business coupled with existing relationships across a number of principals in the mortgage and personal loans businesses. Indiainfoline now has plans to roll the business out across its pan-Indian network to provide it with a truly national scale in operations.

### **2.3.6. Invest Online:**

India Infoline has made investing in Mutual funds and primary market so effortless. All you have to do is register with us and that's all. No paperwork no queues and No registration charges.

#### ➤ **Invest In MF**

Indiainfoline offers you a host of mutual fund choices under one roof, backed by in-depth research and advice from research house and tools configured as investor friendly.

#### ➤ **APPLY IN IPO'S**

You could also invest in Initial Public Offers (IPO's) online without going through the hassles of filling ANY application form/ paperwork.

### **2.3.7. SMS (stay connected to the market):**

The trader of today, you are constantly on the move. But how do you stay connected to the market while on the move? Simple, subscribe to India Infoline's Stock Messaging Service and get Market on your Mobile. There are three products under SMS Service: Market on the move. Best of the lot. VAS (Value Added Service)

### **2.3.8. Insurance**

An entry into this segment helped complete the client's product basket; concurrently, it graduated the Company into a one-stop retail financial solutions provider. To ensure maximum reach to customers across India, we have employed a multi pronged approach and reach out to customers via our Network, Direct and Affiliate channels. Following the opening of the sector in 1999-2000, a number of private sector insurance service providers commenced operations aggressively and helped grow the market.

The Company's entry into the insurance sector derisked the Company from a predominant dependence on broking and equity-linked revenues. The annuity based income generated from insurance intermediation result in solid core revenues across the policy.

**2.3.9. Wealth Mangement Service:**

Imagine a financial firm with the heart and soul of a two-person organization. A world-leading wealth management company that sits down with you to understand your needs and goals. We offer you a dedicated group for giving you the most personal attention at every level.

**2.3.10. Newsletters:**

The Daily Market Strategy is your morning dose on the health of the markets. Five intra-day ideas, unless the markets are really choppy coupled with a brief on the global markets and any other cues, which could impact the market. Ocassionally an investment idea from the research team and a crisp round up of the previous day's top stories. That's not all. As a subscriber to the Daily Market Strategy, you even get research reports of India Infoline research team on a priority basis.

The Indiainfoline Weekly Newsletter is your flashback for the week gone by. A weekly outlook coupled with the best of the web stories from India infoline and links to important investment ideas, Leader Speak and features is delivered in your inbox every Friday evening.

## **2.4 Competitive Strength of the Company:.**

### **➤ Knowledge**

Economic times, business standard and business line are given to the employees to enrich the knowledge of the employees in India infoline. Passing NCFM, AMFI, IRDA exams also help the employees to get basic domain understanding.

### **➤ Technology**

The trading interface used in India infoline called ODIN is absolutely world class. Basic training in this terminal is given to all employees. Every client is educated in this terminal for better trading.

### **➤ Service**

Today service is the key driver for growth in financial services. In India infoline, the customer service is warm, friendly and responsive, that customers can feel and appreciate. The tips for intra day, short term and long term are given for the clients for better trading.

*Impact of Forex on Commodity Market for the year 2007*

## **MACRO – MICRO ANALYSIS**

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*Impact of Forex on Commodity Market for the year 2007*

***MACRO – MICRO ANALYSIS***

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### **3. MACRO-MICRO ANALYSIS**

The Macro & Micro analysis of financial services industries in economic growth, Competitive strength, career growth, opportunities etc in domestic and foreign countries the brief discussion given below.

#### **3.1 Macro Analysis**

Financial services refers to services provided by the finance industry. The finance industry encompasses a broad range of organizations that deal with the management of money. Among these organizations are banks, credit card companies, insurance companies, consumer finance companies, stock brokerages, and some government sponsored enterprises. As of 2004, the financial services industry represented 20% of the market capitalization of the S&P 500 in the United States.

Philadelphia was the centre of American finance during the first forty years of the new United States. In 1790, the country's first stock exchange was founded there and Chestnut Street was home to the nation's most powerful financial institutions. However, in the 1820s a shift to New York City began and for more than one hundred and fifty years Wall Street has been synonymous with the stock brokerage business. Some sources suggest that historical top-level brokers and a number of other firms rose to prominence over that time with the top-ranked brokerages in the early 1950s being:

- Merrill Lynch
- Paine Webber & Company
- Morgan Stanley
- Goldman Sachs
- Bear Stearns

Since the 1980s stockbroking firms have also been allowed to be market makers as long as the appropriate Chinese walls are put in place.

### Impact of Forex on Commodity Market for the year 2007

With the advent of automated stockbroking systems on the Internet the client often has no personal contact with his/her stockbroking firm. The stockbroker's system performs all the stockbroking functions: it obtains the best price from the market, executes and settles the trade.

Today, most of the once well-known corporate brand names including mid-sized firms such as Smith Barney have been swallowed up by global financial conglomerates. Only a few firms remain independent, such as Edward Jones Investments, Stifel Nicolaus, Oppenheimer & Co and Raymond James. Discount brokers (such as E\*TRADE, Scottrade, TD Ameritrade, and Charles Schwab) have taken a large share of the business by offering highly discounted commissions. Discount brokers may offer limited advisory services, but their primary focus tends to be servicing self directed retail accounts.

The financial services industry constitutes the largest group of companies in the world in terms of earnings and equity market cap. However it is not the largest category in terms of revenue or number of employees. It is also a slow growing and extremely fragmented industry, with the largest company (Citigroup), only having a 3 % US market share.

In contrast, the largest home improvement store in the US, Home Depot, has a 30 % market share, and the largest coffee house Starbucks has a 32 % market share, etc. Despite this fragmentation, financial service companies as a group are by far the most profitable in the world, and if any grew to the same market share percentages as any other retail industry, the potential profit would be large.

The term "financial services" became more prevalent in the United States partly as a result of the Gramm-Leach-Bliley Act of the late 1990s, which enabled different types of companies in the US financial services industry to merge. In the USA almost every company now which previously described themselves as a bank, insurance company, or brokerage house, now describes themselves in some way as a financial services institution.

### Impact of Forex on Commodity Market for the year 2007

Companies usually have two distinct approaches to this new type of business. One approach would be a bank which simply buys an insurance company or an investment bank, keeps the original brands of the acquired firm, and adds the acquisition to its holding company simply to diversify its earnings. Outside the U.S., e.g., in Japan, non-financial services companies are permitted within the holding company. In this scenario, each company still looks independent, and has its own customers, etc. In the other style, a bank would simply create its own brokerage division or insurance division and attempt to sell those products to its own existing customers, with incentives for combining all things with one company.

TD AMERITRADE Holding Corporation (NASDAQ: AMTD) is the owner of TD AMERITRADE Inc., the largest online brokerage in the world in number of online equity trades placed per day. Services offered include common and preferred stocks, ETFs, option trades, mutual funds, fixed income, margin lending, and cash management services.

#### **3.1.1. COMMODITIES EXCHANGES AROUND THE WORLD:**

##### **➤ CHICAGO BOARD OF TRADE:**

The Chicago Board of Trade (CBOT) NYSE: CME, established in 1848, is the world's oldest futures and options exchange. More than 50 different options and futures contracts are traded by over 3,600 CBOT members through open outcry and eTrading. Volumes at the exchange in 2003 were a record breaking 454 million contracts. On 12 July 2007, the CBOT merged with the CME and ceased to exist as an independent entity.

##### **➤ Chicago Mercantile Exchange (CME)**

Chicago Mercantile Exchange (CME) is the largest futures exchange in US. The exchange trades on interest rates, equities, foreign exchange and agricultural commodities. It has both open cry as well as electronic trading. Agricultural commodities traded on the exchange include dairy products (butter, milk cheese) and live stock futures (cattle and pork).

Impact of Forex on Commodity Market for the year 2007

➤ **NEW YORK BOARD OF TRADE (NYBOT)**

New York Board of Trade (NYBOT) is the world's largest commodities exchange for Coffee, Sugar, Cotton and Frozen Concentrated Orange Juice. The exchange was founded as the New York Cotton Exchange in 1870. NYBOT also facilitates trades in foreign currencies and derivative indices for equities.

➤ **KANSAS BOARD OF TRADE**

Kansas Board of Trade in US specializes in hard red winter wheat. Hard winter wheat constitutes the maximum of US production. This exchange is benchmark for bread wheat prices.

➤ **LONDON METAL EXCHANGE**

London Metal Exchange trades in Metals and non ferrous metals like aluminum, copper, lead, nickel, tin and copper. Consumers as well as producers of metals use the official prices of LME for their long term contracts pricing. There are over 400 LME approved warehouse in some 32 locations covering USA, Europe, the middle & the Far East. (At the moment there is none in India) Have both open outcry as well as electronic.

➤ **NEW YORK MERCANTILE EXCHANGE (NYMEX)**

New York Mercantile Exchange in its current form was created in 1994 by the merger of the former New York Mercantile Exchange and the Commodity Exchange of New York (COMEX). Together they represent one of world's largest exchanges for precious metals and energy.

➤ **TOKYO COMMODITY EXCHANGE (TOCOM)**

Tokyo Commodity Exchange (TOCOM) is the largest exchange in Japan and second largest commodity exchange in the world for futures and options. Crude oil, gasoline, kerosene, gas oil, gold, silver, aluminum, platinum and rubber are the commodities that are actively traded.

**Top 20 brokers in world:**

- A.B. WATLEY DIRECT
- BANC OF AMERICA
- CHARLES SCHWAB
- DIRECT ACCESS ELITE
- E\*TRADE FINANCIAL
- FIDELITY INVESTMENTS
- FIRSTRAD SECURITIES
- INTERACTIVE BROKERS
- MB TRADING
- OPTIONSPRESS
- SCOTTRADE
- SHAREBUILDER
- SIEBERTNET
- TD AMERITRADE
- THINKORSWIM
- TRADEKING
- TRADESTATION SECURITIES
- WALLSTREET\*E
- WELLS FARGO
- ZECCO

**3.2. Micro analysis**

The Indian retail brokerage industry consists of companies that primarily act as agents for the buying and selling of securities (e.g. stocks, shares, and similar financial instruments) on a commission or transaction fee basis.

The Indian retail brokerage market is showing phenomenal growth. The total trading volume of brokerage companies has increased from US\$1239.1 billion in 2004 to US\$1492.1 billion in 2005, and is expected to reach US\$6535.7 billion by 2015.

### Impact of Forex on Commodity Market for the year 2007

Though the Indian brokerage industry has been consolidating steadily over the last 10 years, the share of the top 10 brokers has risen to only around one-fourth of the total industry revenues. In this fragmented market, leading players such as ICICI Direct, Kotak Securities, Indiabulls, Sharekhan, and 5 Paisa, apart from many small players, compete on the basis of low brokerage fees and customer service. Buoyed by the bullish Indian stock market, foreign banks such as Société Générale (SocGen), BNP Paribas, Standard Chartered, and Macquarie Bank (Australia) are eyeing stakes in Indian retail brokerages.

**The major growth drivers for brokerage revenue and trading volume are:**

- Continuous fall in brokerage fees
- Adoption of technology — screen-based trading, electronic matching, and paperless securities Centralized operations, effective risk management, and control on large interconnected operations spanning multiple locations, which is enabled by telecom connectivity and low costs
- Increasing access to capital and the ability to provide margin finance

#### **3.2.1. SIZE:**

India has a rapidly growing Banking and Financial Services sector based on sound fundamentals (low NPAs, Basel I compliant) Total banking assets of about \$450 billion in 2004; growth of 15% p.a. since 1991. Liquid and well regulated equity markets – Market cap of over \$450 billion. Turnover has grown to \$1,170 billion in 2003-04 from \$285 billion in 2002-03.

Mutual Funds assets of \$45 billion; growth of 13% p.a. since 1993 when private mutual funds were launched 40 Venture Capital and Private Equity Funds operate in India.

### **3.2.2. STRUCTURE:**

Public Sector (Government owned) banks account for 75% of the assets; however, Indian private banks and foreign banks are growing very fast Standard Chartered Bank, Citibank and HSBC are the top three foreign banks in India with more than 65% of the total assets of foreign banks. Most global players in banking & financial services - Morgan Stanley, Merrill Lynch, JP Morgan, Deutsche Bank, UBS, ABN Amro, Barclays, Calyon etc. - are in India.

The Mutual Funds industry has both domestic and foreign companies - UTI Mutual Fund, Prudential ICICI, HDFC, Franklin Templeton, Birla and Tata

#### **Top stock brokers in India**

- ICICI Securities Ltd
- Kotak Securities Ltd
- Indiabulls Financial Services Limited
- India Infoline
- IL&FS Investmart Ltd
- SSKI Ltd
- Motilal Oswal Securities
- Fortis Securities (Religare)
- Karvy
- Geojit Securities
- HDFC Securities

### **3.3. Commodity Products at Macro and Micro Level**

#### **3.3.1. World Gold Markets**

- London as the great clearing house
- New York as the home of futures trading
- Zurich as a physical turntable
- Istanbul, Dubai, Singapore and Hong Kong as doorways to important consuming regions

### Impact of Forex on Commodity Market for the year 2007

- Tokyo where TOCOM sets the mood of Japan
- Mumbai under India's liberalized gold regime

#### **3.3.1.1. Indian Gold Market**

- Gold is valued in India as a savings and investment vehicle and is the second preferred investment after bank deposits.
- India is the world's largest consumer of gold in jewellery as investment.
- In July 1997 the RBI authorized the commercial banks to import gold for sale or loan to jewellers and exporters. At present, 13 banks are active in the import of gold.
- This reduced the disparity between international and domestic prices of gold from 57 percent during 1986 to 1991 to 8.5 percent in 2001.
- The gold hoarding tendency is well ingrained in Indian society.
- Domestic consumption is dictated by monsoon, harvest and marriage season. Indian jewellery offtake is sensitive to price increases and even more so to volatility.
- In the cities gold is facing competition from the stock market and a wide range of consumer goods.
- Facilities for refining, assaying, making them into standard bars in India, as compared to the rest of the world, are insignificant, both qualitatively and quantitatively.

#### **3.3.1.2. Market Moving Factors**

- Above ground supply from sales by central banks, reclaimed scrap and official gold loans
- Producer / miner hedging interest
- World macro-economic factors - US Dollar, Interest rate
- Comparative returns on stock markets
- Domestic demand based on monsoon and agricultural output

### **3.3.2. Indian Scenario of Crude Oil:**

- India ranks among the top 10 largest oil-consuming countries.
- Oil accounts for about 30 per cent of India's total energy consumption. The country's total oil consumption is about 2.2 million barrels per day. India imports about 70 per cent of its total oil consumption and it makes no exports.
- India faces a large supply deficit, as domestic oil production is unlikely to keep pace with demand. India's rough production was only 0.8 million barrels per day.
- The oil reserves of the country (about 5.4 billion barrels) are located primarily in Mumbai High, Upper Assam, Cambay, Krishna-Godavari and Cauvery basins.
- Balance recoverable reserve was about 733 million tones (in 2003) of which offshore was 394 million tones and on shore was 339 million tones.
- India had a total of 2.1 million barrels per day in refining capacity.
- Government has permitted foreign participation in oil exploration, an activity restricted earlier to state owned entities.
- Indian government in 2002 officially ended the Administered Pricing Mechanism (APM). Now crude price is having a high correlation with the international market price. As on date, even the prices of crude bi-products are allowed to vary +/- 10% keeping in line with international crude price, subject to certain government laid down norms/ formulae.
- Disinvestment/restructuring of public sector units and complete deregulation of Indian retail petroleum products sector is under way.

#### **3.3.2.1 Market Influencing Factors of Crude Oil:**

- OPEC output and supply.
- Terrorism, Weather/storms, War and any other unforeseen geopolitical factors that causes supply disruptions.
- Global demand particularly from emerging nations.
- Dollar fluctuations.
- DOE / API imports and stocks.

### Impact of Forex on Commodity Market for the year 2007

- Refinery fires & funds buying.

#### **3.3.3. Global Scenario of Copper**

- Economic, technological and societal factors influence the supply and demand of copper. As society's need for copper increases, new mines and plants are introduced and existing ones expanded.
- Land-based resources are estimated at 1.6 billion tons of copper, and resources in deep-sea nodules are estimated at 0.7 billion tons.
- The global production of refined copper is around 15 million tons.
- The major copper-consuming nations are Western Europe (28.5%), the United States (19.1%), Japan (14%), and China (5.3%).
- Copper and copper alloy scrap composes a significant share of the world's supply.
- The largest international sources for scrap are the United States and Europe. Chile, Indonesia, Canada and Australia are the major exporters and Japan, Spain, China, Germany and Philippines are the major importers.

##### **3.3.3.1. World Copper Markets**

- LME and NYMEX are the two international markets, which provide direction to the copper prices.
- The eight leading refining nations, viz., United States, Japan, Chile, Canada, Zambia, Belgium, and the Federal Republic of Germany account for 67% of total refined metal production.

##### **3.3.3.2. Indian Scenario**

- The size of Indian Copper Industry is around 4 lakh tons, which as percentage of world copper market is 3 %.
- Birla Copper, Sterilite Industries are two major private producers and Hindustan Copper Ltd the public sector producers.

### Impact of Forex on Commodity Market for the year 2007

- India is emerging as net exporter of copper from the status of net importer on account of rise in production by three companies.
- Copper goes into various usage such as Building, Cabling for power and telecommunications, Automobiles etc. Two major states owned telecommunications service providers; BSNL and MTNL consume 10% of country's copper production. Growth in the building construction and automobile sector would keep demand of copper high.

#### **3.3.3.3. Factors Influencing Copper Markets**

- Copper prices in India are fixed on the basis of the rates that rule on LME the preceding day.
- World copper mine production through exploration of new mine and expansion of existing mine.
- Economic growth of the major consuming countries such as China, Japan, Germany etc.
- Growth and development in the Building, electronics and electrical industry.

#### **3.4. Silver global scenario**

- London Bullion Market is the global hub of OTC (Over-The-Counter) trading in silver.
- Comex futures in New York is where most fund activity is focused

##### **3.4.1. Indian Scenario**

- Silver imports into India for domestic consumption in 2002 was 3,400 tons down 25 % from record 4,540 tons in 2001.
- Open General License (OGL) imports are the only significant source of supply to the Indian market.
- Non-duty paid silver for the export sector rose sharply in 2002, up by close to 200% year-on-year to 150 tons.

Impact of Forex on Commodity Market for the year 2007

- Around 50% of India's silver requirements last year were met through imports of Chinese silver and other important sources of supply being UK, CIS, Australia and Dubai.
- Indian industrial demand in 2002 is estimated at 1375 tons down by 13 % from 1,579 tons in 2001. In spite of this fall, India is still one of the largest users of silver in the world, ranking alongside those Industrial giants, Japan and the United States.

By contrast with United States and Japan, Indian industrial offtake for fabrication in hardcore industrial applications like electronics and brazing alloys accounts for only 15 % and the rest being for foils for use in the decorative covering of food, plating of jewelry and silverware and jari.

- In India silver price volatility is also an important determinant of silver demand as it is for gold.

*Impact of Forex on Commodity Market for the year 2007*

***DATA ANALYSIS AND INTERPRETATION***

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## 4. ANALYSIS & INTREPRETATION

### 4.1 Correlation Coefficient for Gold and Dollar

The correlations table displays Pearson correlation coefficients, significance values, and the number of cases. Correlation coefficients assume the data are normally distributed. Pearson correlation coefficient is a measure of linear association between two variables. The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (Positive or negative).

**Table 4.1**

**Table showing the Correlation Coefficient for Gold and Dollar**

		<b>Dollar</b>	<b>Gold</b>
<b>Dollar</b>	Pearson Correlation Coefficient	1	-0.220**
	Sample Size (N)	261	261
<b>Gold</b>	Pearson Correlation Coefficient	-0.220	1
	Sample Size (N)	261	261
** Correlation is significant at the 0.01 level (2-tailed).			

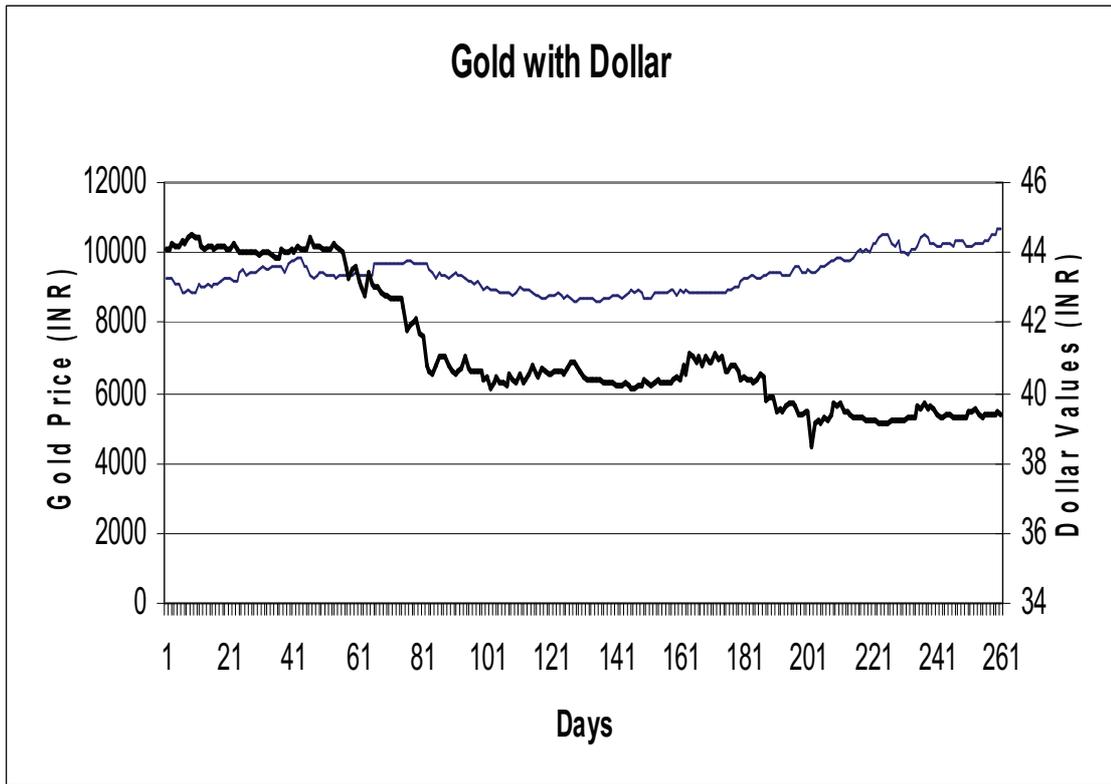
#### **Interpretation:**

The above table shows correlation coefficient between gold and dollar is -0.220. It is low negative correlation and statistically significant. Gold and Dollar has inverse relationship it means which moves in opposite direction i.e. when Gold increases Dollar decreases and vice versa. The direction of relationship is negative. The relationship between Gold and Dollar is shown in Fig (4.1).

#### **Inference:**

It was found that the correlation coefficient of Gold and dollar is -0.220 it shows low negatively correlated and significant. Gold and dollar has inverse relationship that is gold increases dollar decreases and vice versa.

**FIGURE 4.1**



**Table 4.2**

**Table showing the Correlation Coefficient for Crude oil and Dollar**

		<b>Dollar</b>	<b>Crude Oil</b>
<b>Dollar</b>	Pearson Correlation Coefficient	1	-0.746**
	Sample Size (N)	261	261
<b>Crude Oil</b>	Pearson Correlation Coefficient	-0.746	1
	Sample Size (N)	261	261
<b>**</b> Correlation is significant at the 0.01 level (2-tailed).			

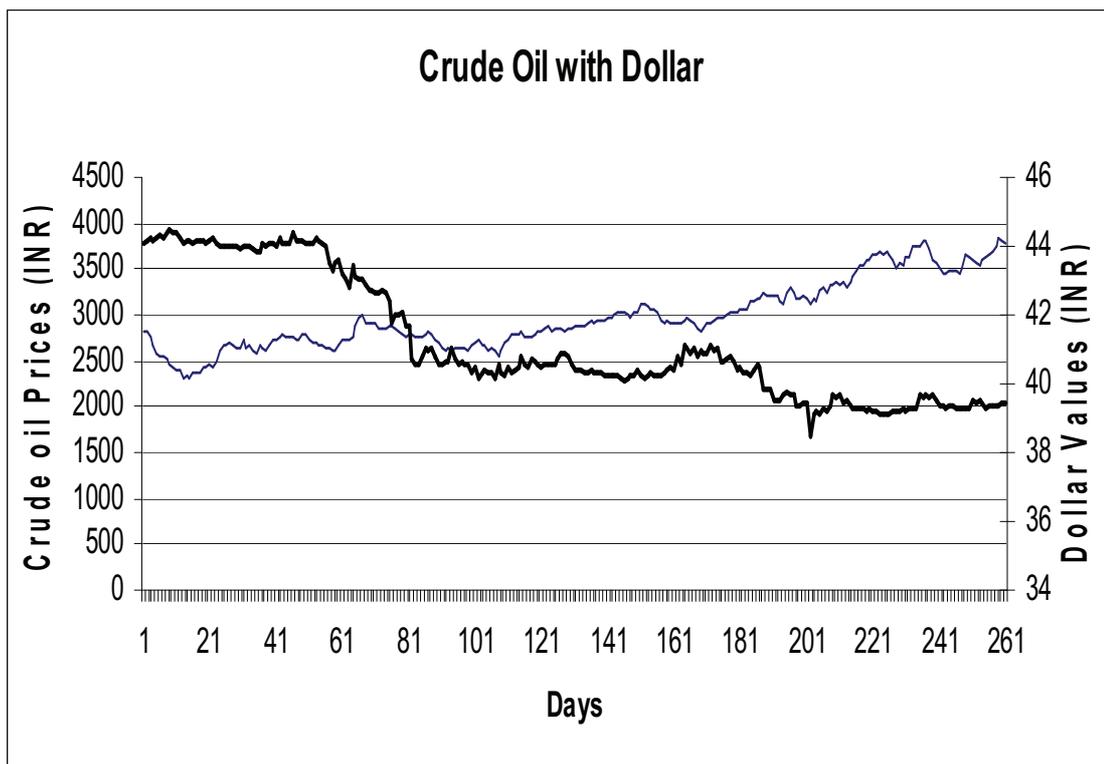
**Interpretation:**

The above table shows correlation coefficient between Crude oil and Dollar is -0.746. It shows high negative correlation and statistically significant. Crude oil and Dollar has inverse relationship it means which moves in opposite direction i.e. when Crude oil increases Dollar decreases and vice versa. The direction of relationship is negative. The relationship between Crude oil and Dollar is shown in Fig (4.2).

**Inference:**

It was found that the correlation coefficient of Crude oil and dollar is -0.746 it shows high negatively correlated and significant. Crude oil and dollar has inverse relationship that is Crude oil increases dollar decreases and viceversa.

**FIGURE 4.2**



**Table 4.3**

**Table showing the Correlation Coefficient for Copper and Dollar**

		<b>Dollar</b>	<b>Copper</b>
<b>Dollar</b>	Pearson Correlation Coefficient	1	-0.296**
	Sample Size (N)	261	261
<b>Copper</b>	Pearson Correlation Coefficient	-0.296	1
	Sample Size (N)	261	261
<b>**</b> Correlation is significant at the 0.01 level (2-tailed).			

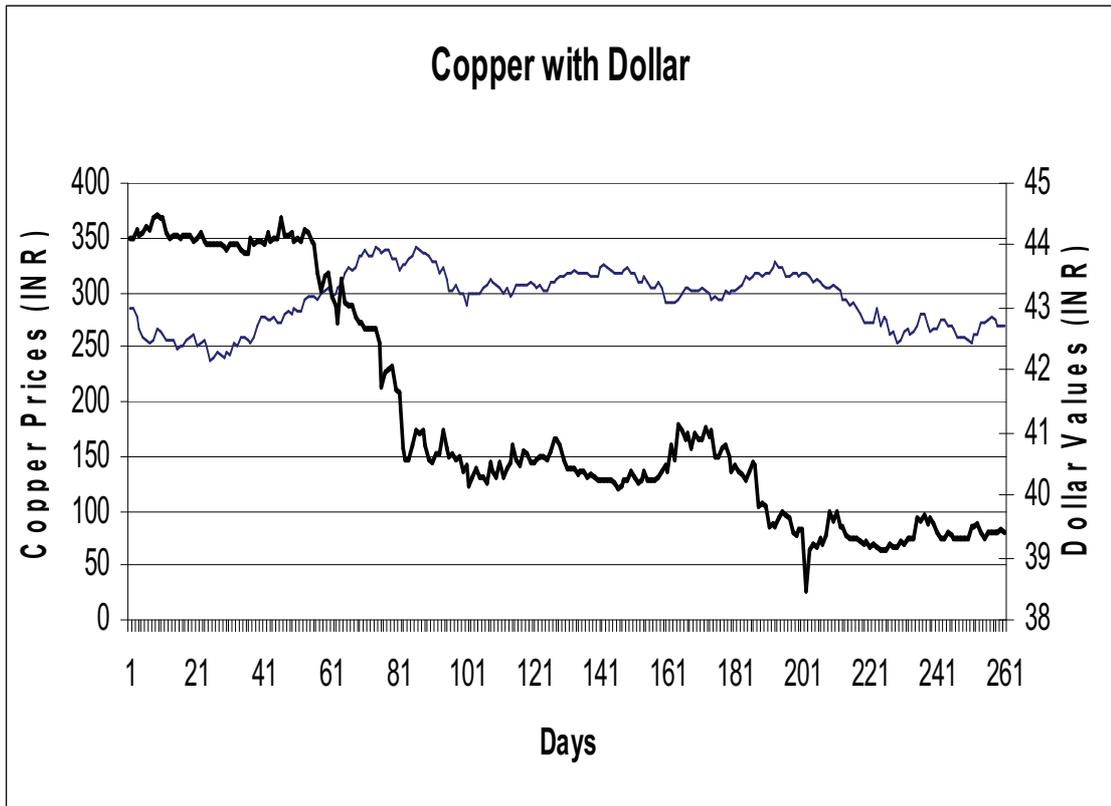
**Interpretation:**

The above table shows correlation coefficient between Copper and Dollar is -0.296. It shows low negative correlation and statistically significant. Copper and Dollar has inverse relationship it means which moves in opposite direction i.e. when Copper increases Dollar decreases and vice versa. The direction of relationship is negative. The relationship between Copper and Dollar is shown in Fig (4.3).

**Inference:**

It was found that the correlation coefficient of Copper and Dollar is -0.296 it shows low negatively correlated and significant. Copper and Dollar has inverse relationship that is Copper increases dollar decreases and vice versa.

**FIGURE 4.3**



**Table 4.4**

**Table showing the Correlation Coefficient for Silver and Dollar**

		<b>Dollar</b>	<b>Silver</b>
<b>Dollar</b>	Pearson Correlation Coefficient	1	0.630**
	Sample Size (N)	261	261
<b>Silver</b>	Pearson Correlation Coefficient	0.630	1
	Sample Size (N)	261	261
<b>**</b> Correlation is significant at the 0.01 level (2-tailed).			

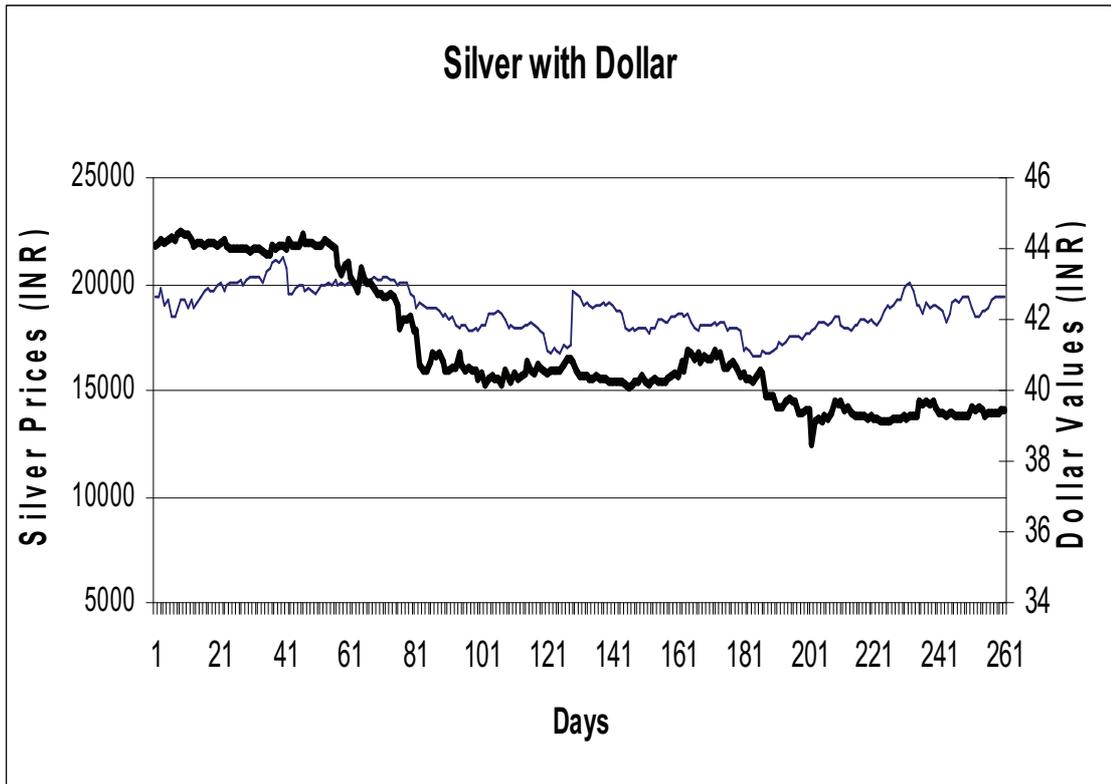
**Interpretation:**

The above table shows correlation coefficient between Silver and Dollar is 0.630. It shows high positive correlation and statistically significant. Silver and Dollar has direct relationship it means which moves in same direction i.e. when Silver increases Dollar also increases. The direction of relationship is positive. The relationship between Silver and Dollar is shown in Fig (4.4).

**Inference:**

It was found that the correlation coefficient of Silver and Dollar is 0.630 it shows high positively correlated and significant. So that it moves in same direction.

**FIGURE 4.4**



**Table 4.5**

**Table showing the Correlation Coefficient for Dollar and Euro**

		<b>Dollar</b>	<b>Euro</b>
<b>Dollar</b>	Pearson Correlation Coefficient	1	0.461**
	Sample Size (N)	261	261
<b>Euro</b>	Pearson Correlation Coefficient	0.461	1
	Sample Size (N)	261	261
** Correlation is significant at the 0.01 level (2-tailed).			

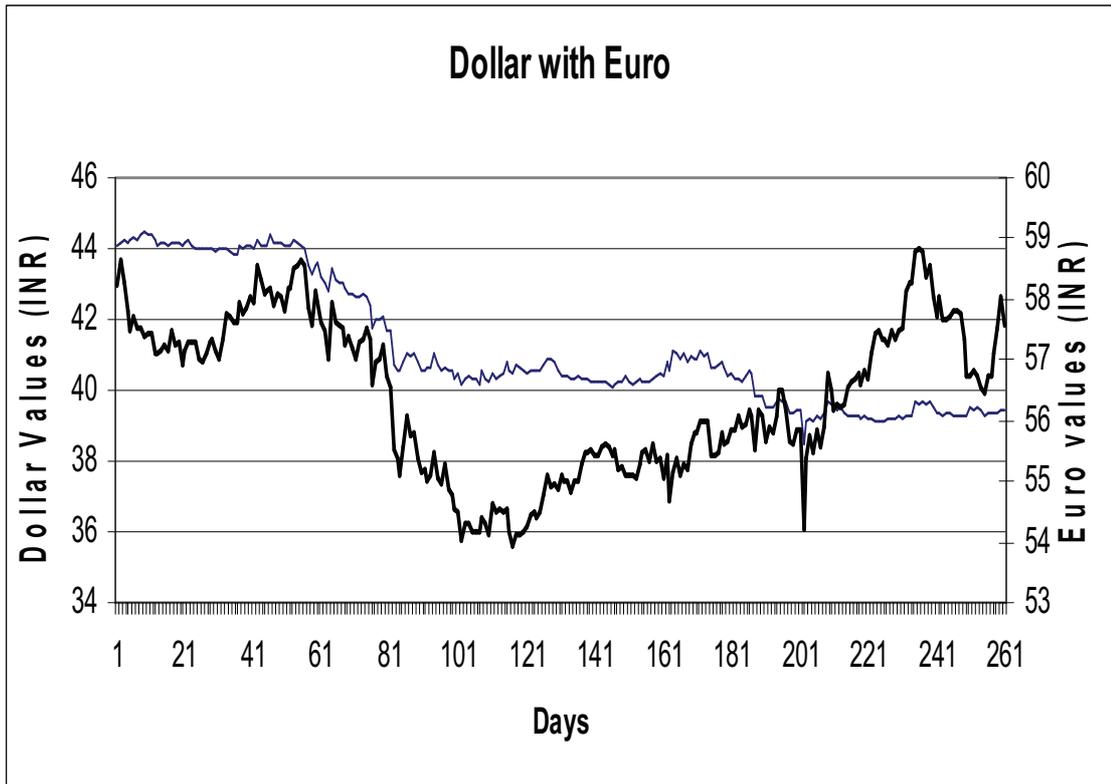
**Interpretation:**

The above table shows correlation coefficient between Dollar and Euro is 0.461. It shows low positive correlation and statistically significant. Dollar and Euro has direct relationship it means which moves in same direction. The direction of relationship is positive. The relationship between Dollar and Euro is shown in Fig (4.5).

**Inference:**

It was found that the correlation coefficient of dollar and euro is 0.461 it shows low positively correlated and significant. So that it moves in same direction.

**FIGURE 4.5**



**Table 4.6**

**Table showing the Correlation Coefficient for Gold and Euro**

		<b>Euro</b>	<b>Gold</b>
<b>Euro</b>	Pearson Correlation Coefficient	1	0.638**
	Sample Size (N)	261	261
<b>Gold</b>	Pearson Correlation Coefficient	0.638	1
	Sample Size (N)	261	261
<b>**</b> Correlation is significant at the 0.01 level (2-tailed).			

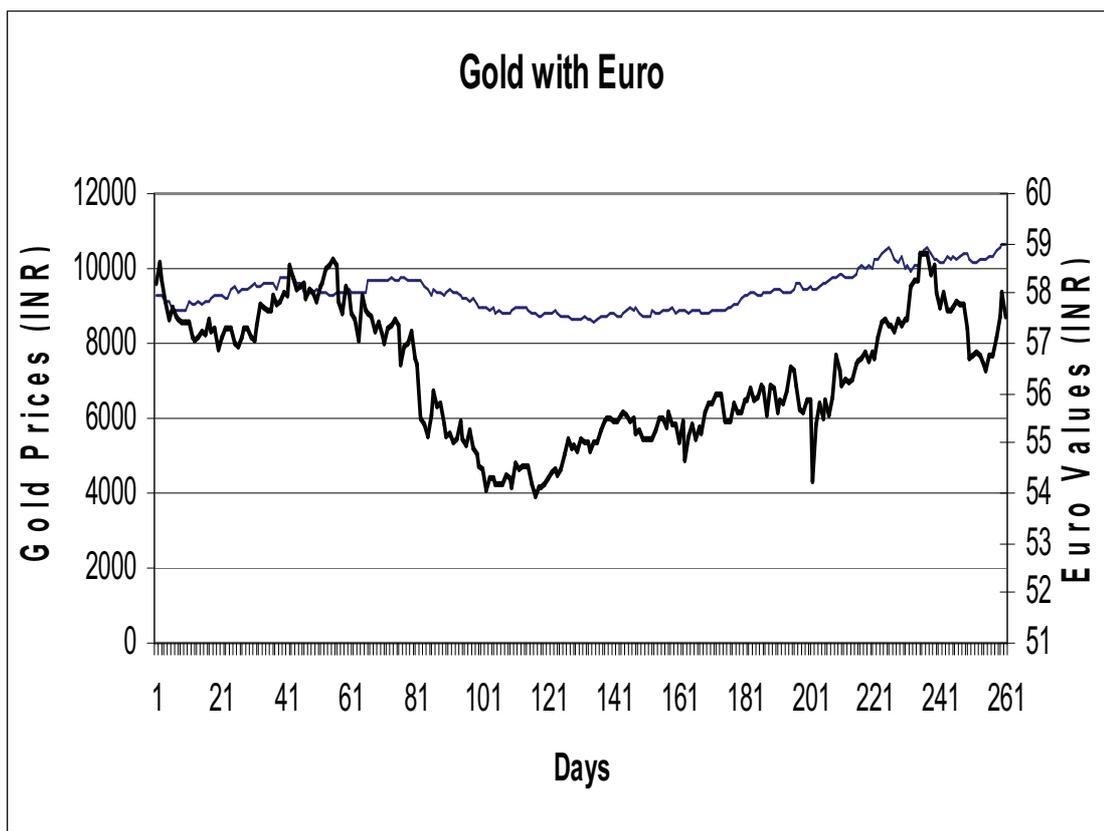
**Interpretation:**

The above table shows correlation coefficient between Gold and Euro is 0.638. It shows high positive correlation and statistically significant. Gold and Euro has direct relationship it means which moves in same direction i.e. when gold increases euro also increases. The direction of relationship is positive. The relationship between Gold and Euro is shown in Fig (4.6).

**Inference:**

It was found that the correlation coefficient of Gold and Euro is 0.638 it shows high positively correlated and significant. So that it moves in same direction.

**FIGURE 4.6**



**Table 4.7**

**Table showing the Correlation Coefficient for Crude oil and Euro**

		<b>Euro</b>	<b>Crude Oil</b>
<b>Euro</b>	Pearson Correlation Coefficient	1	0.180**
	Sample Size (N)	261	261
<b>Crude Oil</b>	Pearson Correlation Coefficient	0.180	1
	Sample Size (N)	261	261
<b>**</b> Correlation is significant at the 0.01 level (2-tailed).			

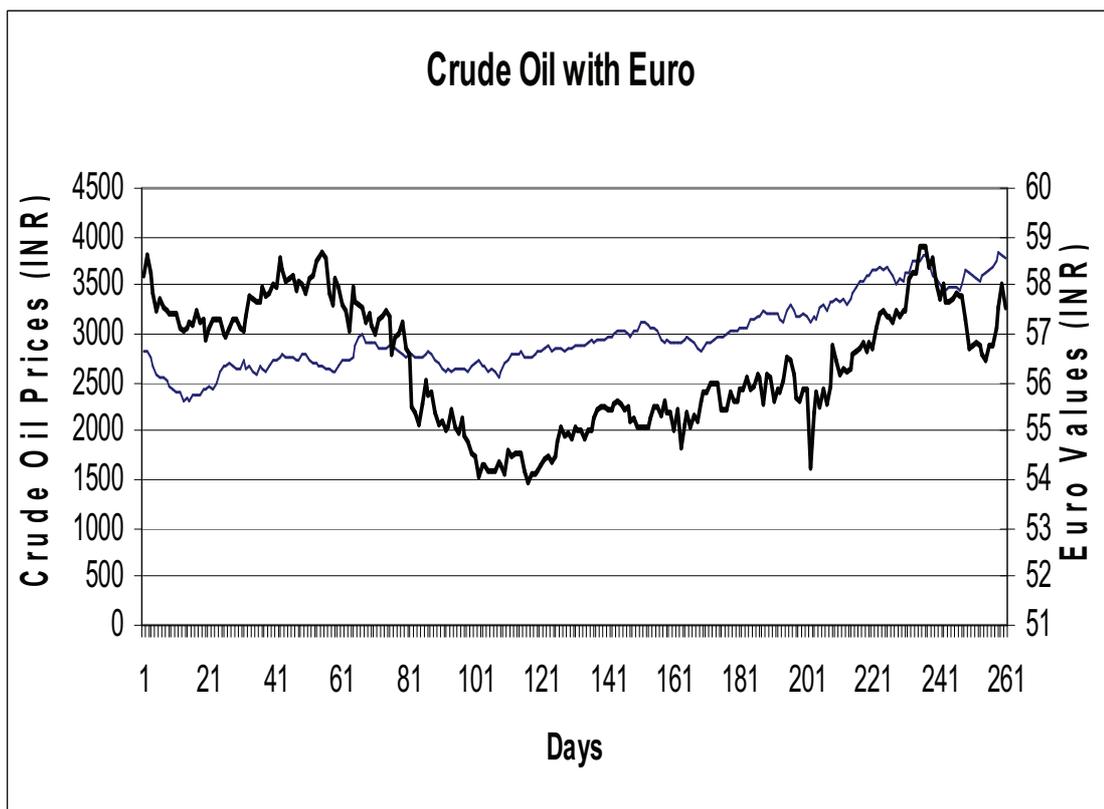
**Interpretation:**

The above table shows correlation coefficient between Crude oil and Euro is 0.180. It shows low positive correlation and statistically significant. Crude oil and Euro has direct relationship it means which moves in same direction i.e. when Crude oil increases Euro also increases slightly due to low positive correlation. The direction of relationship is positive. The relationship between Crude oil and Euro is shown in Fig (4.7).

**Inference:**

It was found that the correlation coefficient of Crude oil and Euro is 0.180 it shows low positively correlated and significant. So that it moves in same direction to some extent.

**FIGURE 4.7**



**Table 4.8**

**Table showing the Correlation Coefficient for Copper and Euro**

		<b>Euro</b>	<b>Copper</b>
<b>Euro</b>	Pearson Correlation Coefficient	1	-0.549**
	Sample Size (N)	261	261
<b>Copper</b>	Pearson Correlation Coefficient	-0.549	1
	Sample Size (N)	261	261
<b>**</b> Correlation is significant at the 0.01 level (2-tailed).			

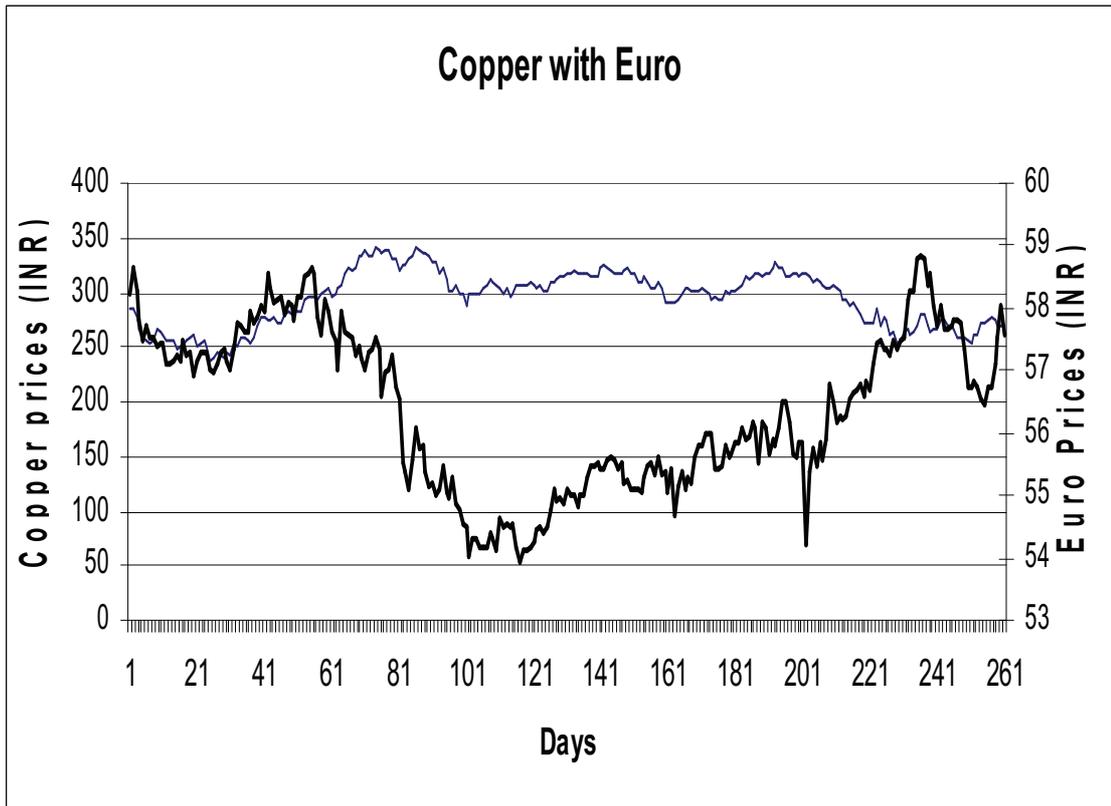
**Interpretation:**

The above table shows correlation coefficient between Copper and Euro is -0.549. It shows low negative correlation and statistically significant. Copper and Euro has inverse relationship it means which moves in opposite direction i.e. when Copper increases Euro decreases and vice versa. The direction of relationship is negative. The relationship between Copper and Euro is shown in Fig (4.8).

**Inference:**

It was found that the correlation coefficient of Copper and Euro is -0.549 it shows low negatively correlated and significant. Copper and Euro has inverse relationship that is Copper increases Euro decreases and vice versa.

**FIGURE 4.8**



**Table 4.9**

**Table showing the Correlation Coefficient for Silver and Euro**

		<b>Euro</b>	<b>Silver</b>
<b>Euro</b>	Pearson Correlation Coefficient	1	0.661**
	Sample Size (N)	261	261
<b>Silver</b>	Pearson Correlation Coefficient	0.661	1
	Sample Size (N)	261	261
<b>**</b> Correlation is significant at the 0.01 level (2-tailed).			

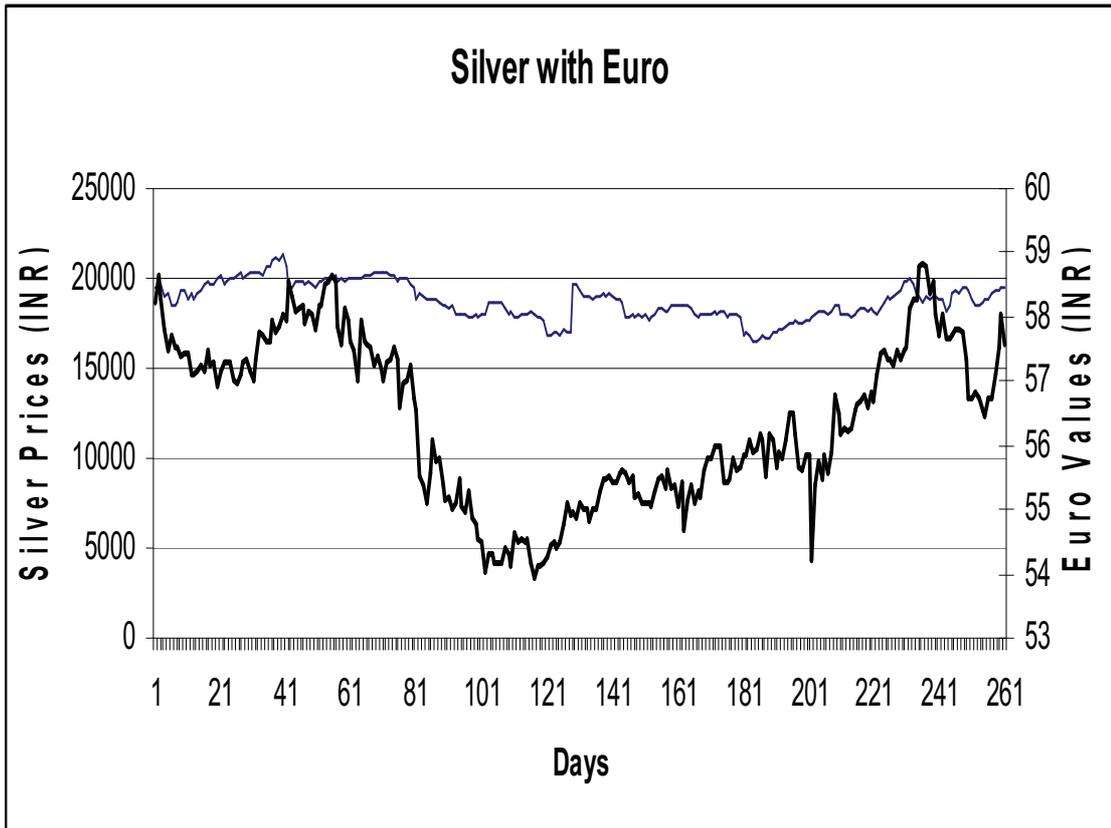
**Interpretation:**

The above table shows correlation coefficient between Silver and Euro is 0.661. It shows high positive correlation and statistically significant. Silver and Euro has direct relationship it means which moves in same direction i.e. when Silver increases Euro also increases. The direction of relationship is positive. The relationship between Silver and Euro is shown in Fig (4.9).

**Inference:**

It was found that the correlation coefficient of Silver and Euro is 0.661 it shows high positively correlated and significant. So that it moves in same direction.

**FIGURE 4.9**



#### **4.2. Time Lag which influences the pricing of Gold and Crude oil under Dollar and Euro**

This table displays Adjusted  $R^2$  and the standard error.  $R$ , the multiple correlation coefficients, is the correlation between the observed and predicted values of the dependent variable. The values of  $R$  for models produced by the regression procedure range from 0 to 1. Larger values of  $R$  indicate stronger relationships.  $R^2$  is the proportion of variation in the dependent variable explained by the regression model. Small values indicate that the model does not fit the data well. The sample  $R^2$  tends to optimistically estimate how well the model fits the population. Adjusted  $R^2$  attempts to correct  $R^2$  to more closely reflect the goodness of fit of the model in the population. Use  $R^2$  to help you determine which model is best. Choose a model with a high value of  $R^2$  that does not contain too many variables.

**Table 4.10**

**Table showing the Time lag which influence the pricing of gold, crude oil, copper, silver by dollar**

<b>Model</b>	<b>R</b>	<b>Adjusted R Square</b>	<b>Percentage</b>
<b>Gold</b>	<b>0.746</b>	<b>0.550</b>	<b>55%</b>
<b>Crude</b>	<b>0.854</b>	<b>0.720</b>	<b>72%</b>
<b>Copper</b>	<b>0.296</b>	<b>0.084</b>	<b>8.4%</b>
<b>Silver</b>	<b>0.630</b>	<b>0.395</b>	<b>40%</b>
<b>Dependent Variable: DOLLAR</b>			

**Interpretation:**

The above table shows the regression between the observed and predicted values of the dependent variable.  $R^2$  of gold is 0.550 (55%). It shows that dollar have 55% influence over gold and rest 45% by other factors like inflation, demand and supply, etc.  $R^2$  of crude oil is 0.720 (72%). It shows that dollar have 72% influence over pricing of crude oil and rest 28% by other factors like inflation, demand and supply, etc.  $R^2$  of Copper is 0.084 (8.4%). It shows that dollar have 8.4% influence over copper and rest 91.6% by other factors like, inventory, inflation, demand and supply, etc.  $R^2$  of Silver is 0.395 (40%). It shows that dollar have 40% influence over pricing of silver and rest 60% by other factors like inflation, demand and supply, etc. When dollar increases it has sudden fluctuations in gold and crude oil but in case of copper of silver it has minimum fluctuations. In it crude oil and gold has high relationship than compared to copper and silver vice versa. The  $R^2$  value in the above table implies that the model fits well with dollar.

**Inference:**

Both gold and crude oil have high relationship, silver and copper have low relationship with dollar. Gold have 55%, Crude oil have 72%, Copper have 8.4%, and Silver have 40% influences over by dollar.

**Table 4.11**

**Table showing the Time lag which influence the pricing of gold, crude oil, copper, silver by Euro**

<b>Model</b>	<b>R</b>	<b>Adjusted R Square</b>	<b>Percentage</b>
<b>Gold</b>	<b>0.638</b>	<b>0.405</b>	<b>40.5%</b>
<b>Crude</b>	<b>0.737</b>	<b>0.539</b>	<b>54%</b>
<b>Copper</b>	<b>0.549</b>	<b>0.299</b>	<b>30%</b>
<b>Silver</b>	<b>0.631</b>	<b>0.435</b>	<b>43.5%</b>
<b>Dependent Variable: Euro</b>			

**Interpretation:**

The above table shows the regression between the observed and predicted values of the dependent variable.  $R^2$  of gold is 0.405 (40.5%). It shows that euro have 40.5% influence over gold and rest 59.5% by other factors like inflation, demand and supply, etc.  $R^2$  of crude oil is 0.539 (54%). It shows that euro have 54% influence over pricing of crude oil and rest 46% by other factors like inflation, demand and supply, etc.  $R^2$  of copper is 0.299 (30%). It shows that euro have 30% influence over copper and rest 70% by other factors like inflation, demand and supply, etc.  $R^2$  of silver is 0.435 (43.5%). It shows that euro have 43.5% influence over pricing of silver and rest 56.5% by other factors like inflation, demand and supply, etc. When euro increases it has sudden increase in gold, silver, and crude oil. In it crude oil has high influence and gold, copper, and silver has low influence. Gold, silver, copper, and crude oil have high relationship with euro. The  $R^2$  value in the above table implies that the model fit well with Euro.

**Inference:**

Gold, silver, and crude oil have high relationship with Euro. Gold have 40.5%, Crude oil have 54%, Copper have 30%, and Silver have 43.5% influences over by Euro.

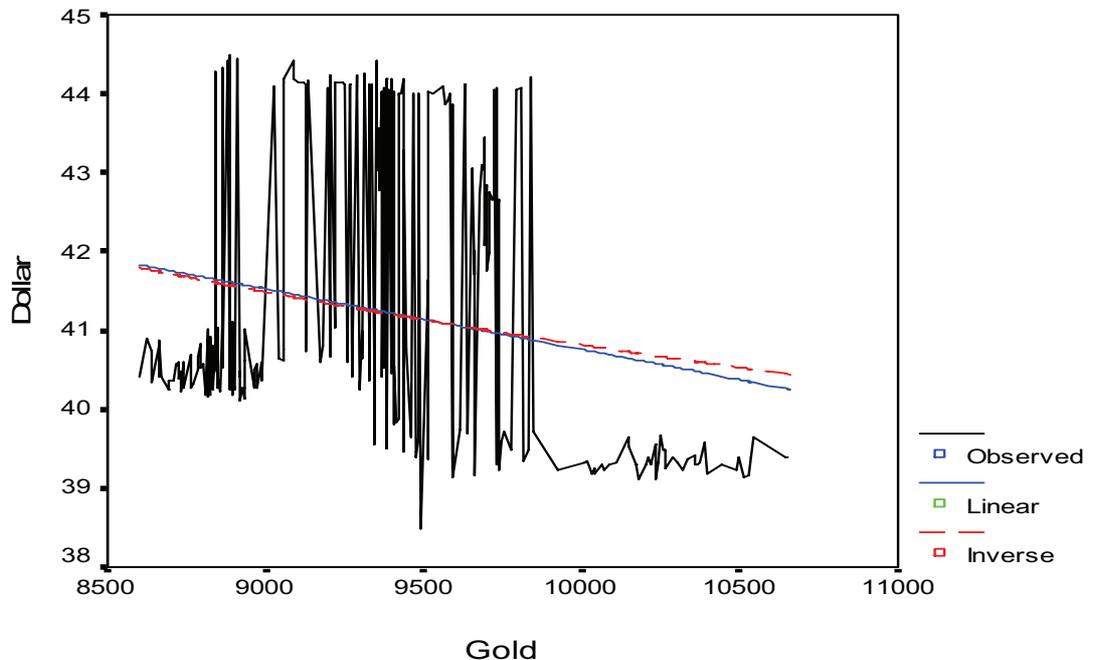
### 4.3 Curve Linear Fit to predict the price of Gold and crude oil with variations in Dollar and Euro

**Table 4.12.**

**Table showing the Curve Linear Fit to predict the price of Gold with variations in Dollar.**

Model	R	Adjusted R Square
Gold	0.746	0.550
<b>Dependent Variable: DOLLAR</b>		

**Figure: 4.10**



**Interpretation:**

From the above table and chart it is clear that when dollar depreciates on the same time price of gold appreciates. In near future there is chance of rise in gold due to dollar decreases and also by other factors. The inverse line shows clearly that when dollar decreases the gold will increase.

**Inference:**

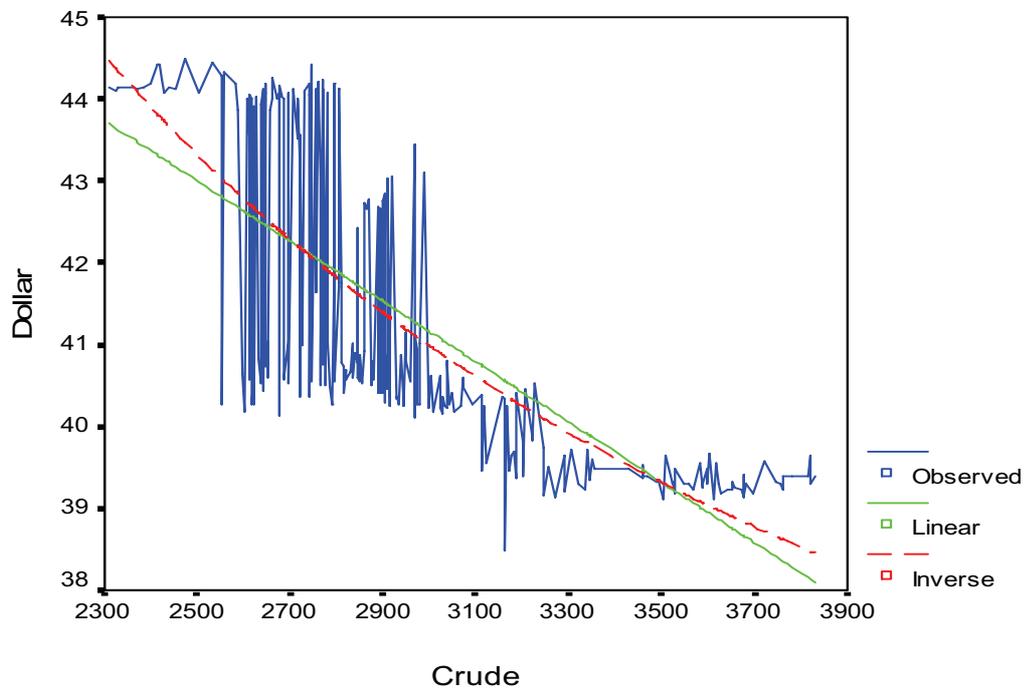
The linear line shows clearly that when Dollar Price decreases the Gold prices also increase.

**Table 4.13**

**Table showing the Curve Linear Fit to predict the price of Crude Oil variations in Dollar.**

Model	R	Adjusted R Square
Crude	0.854	0.720
<b>Dependent Variable: DOLLAR</b>		

**Figure: 4.11**



**Interpretation:**

From the above table and chart it is clear that when dollar depreciates on the same time price of Crude appreciates. In near future there is chance of rise in Crude oil due to dollar decreases and also by other factors. The inverse line shows clearly that when dollar decreases the Crude oil will increase.

**Inference:**

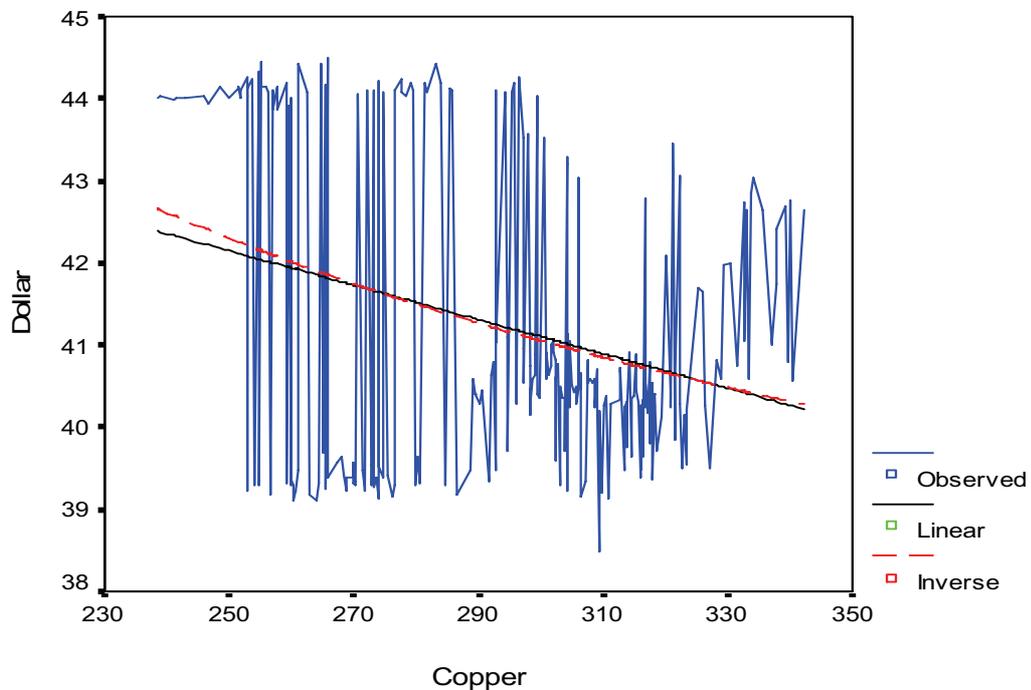
The linear line shows clearly that when Dollar prices decreases the Crude oil prices also increase.

**Table 4.14**

**Table showing the Curve Linear Fit to predict the price of Copper with variations in Dollar.**

Model	R	Adjusted R Square
Copper	0.296	0.084
<b>Dependent Variable: DOLLAR</b>		

**Figure: 4.12**



**Interpretation:**

From the above table and chart it is clear that when Dollar depreciates on the same time price of copper appreciates. In near future there is chance of rise in copper due to dollar decreases and also by other factors. The inverse line shows clearly that when dollar decreases the copper will increase and vice versa.

**Inference:**

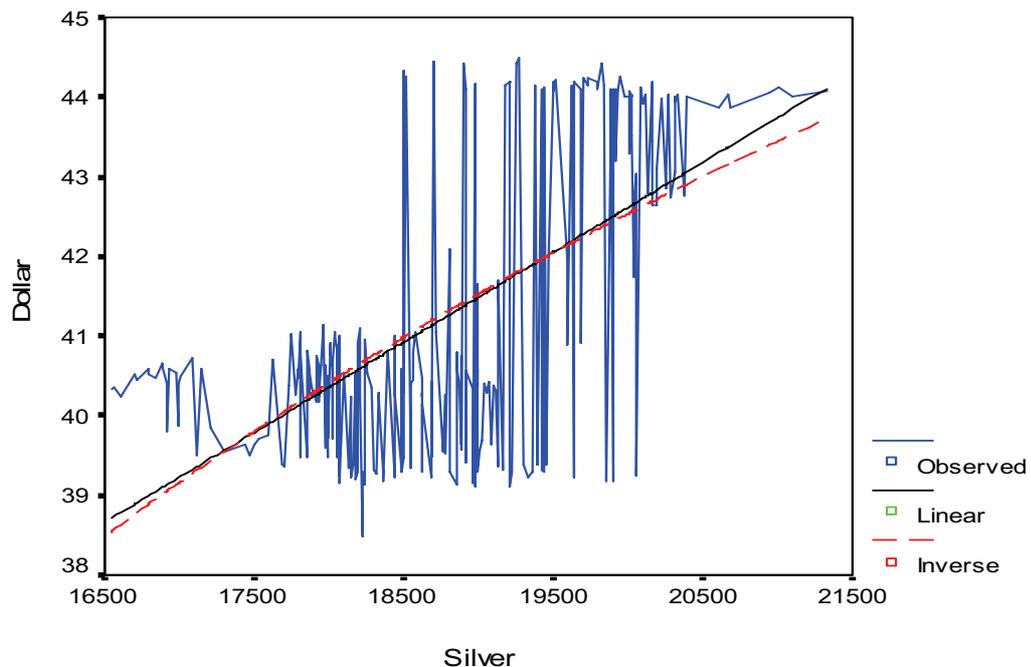
The linear line shows clearly that when Dollar price decreases the copper prices also increase.

**Table 4.15**

**Table showing the Curve Linear Fit to predict the price of Silver variations in Dollar.**

Model	R	Adjusted R Square
Silver	0.630	0.395
<b>Dependent Variable: DOLLAR</b>		

**Figure: 4.13**



**Interpretation:**

From the above table and chart it is clear that when Dollar increases on the same time price of Silver appreciates. In near future there is chance of rise in due to Dollar increases and also by other factors. The inverse line shows clearly that when Dollar increases the Silver will increase.

**Inference:**

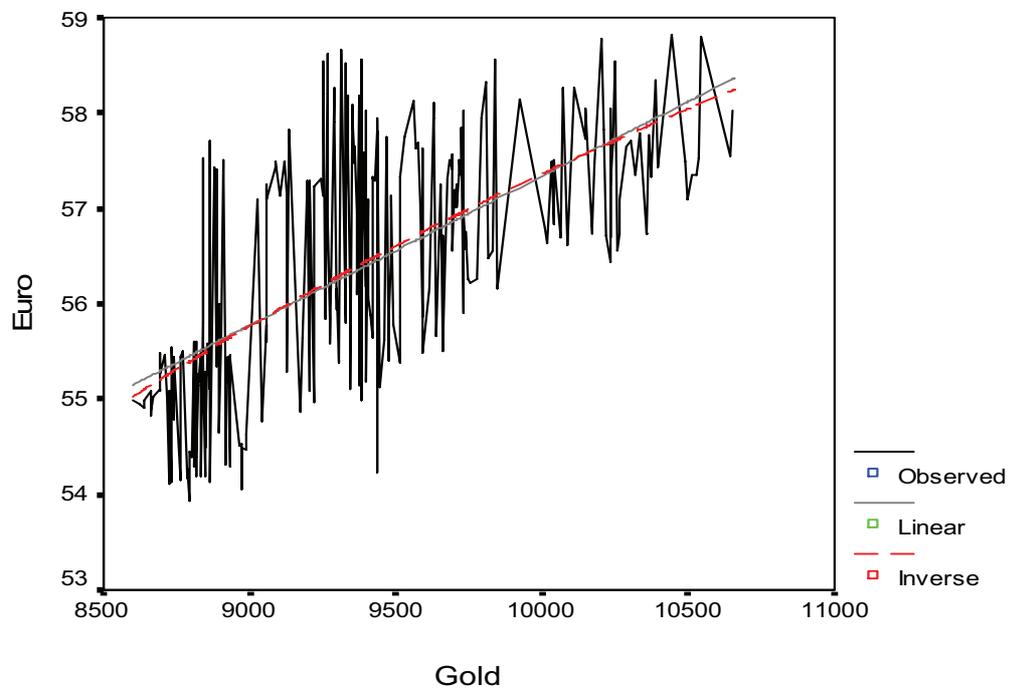
The linear line shows clearly that when Dollar price increases the Silver prices also increase.

**Table 4.16**

**Table showing the Curve Linear Fit to predict the price of Gold variations in Euro.**

Model	R	Adjusted R Square
Gold	0.638	0.405
Dependent Variable: Euro		

**Figure: 4.14**



**Interpretation:**

From the above table and chart it is clear that when Euro increases on the same time price of Gold appreciates. In near future there is chance of rise in Gold due to Euro increases and also by other factors. The inverse line shows clearly that when Euro increases the Gold will increase.

**Inference:**

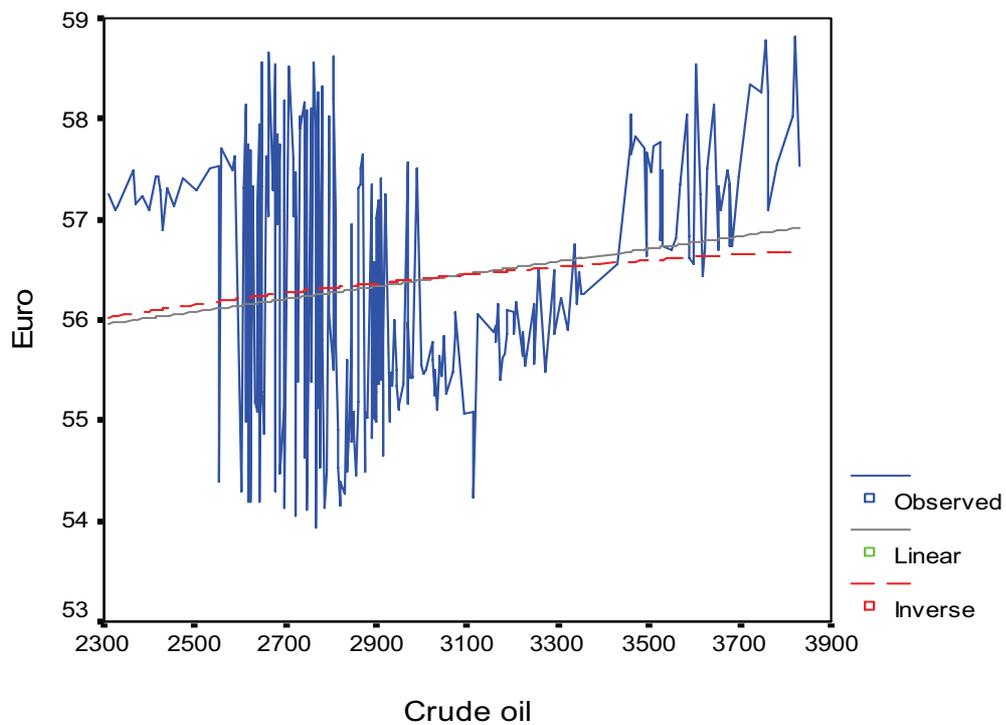
The linear line shows clearly that when Euro price increases the Gold prices will also increase.

**Table 4.17**

**Table showing the Curve Linear Fit to predict the price of Crude oil variations in Euro.**

Model	R	Adjusted R Square
Crude	0.737	0.539
Dependent Variable: Euro		

**Figure: 4.15**



**Interpretation:**

From the above table and chart it is clear that when Euro increases on the same time price of Crude oil will increase in same extent. In near future there is chance of rise in Crude oil due to Euro increases and also by other factors. The inverse line shows clearly that when Euro increases the Crude oil will increase.

**Inference:**

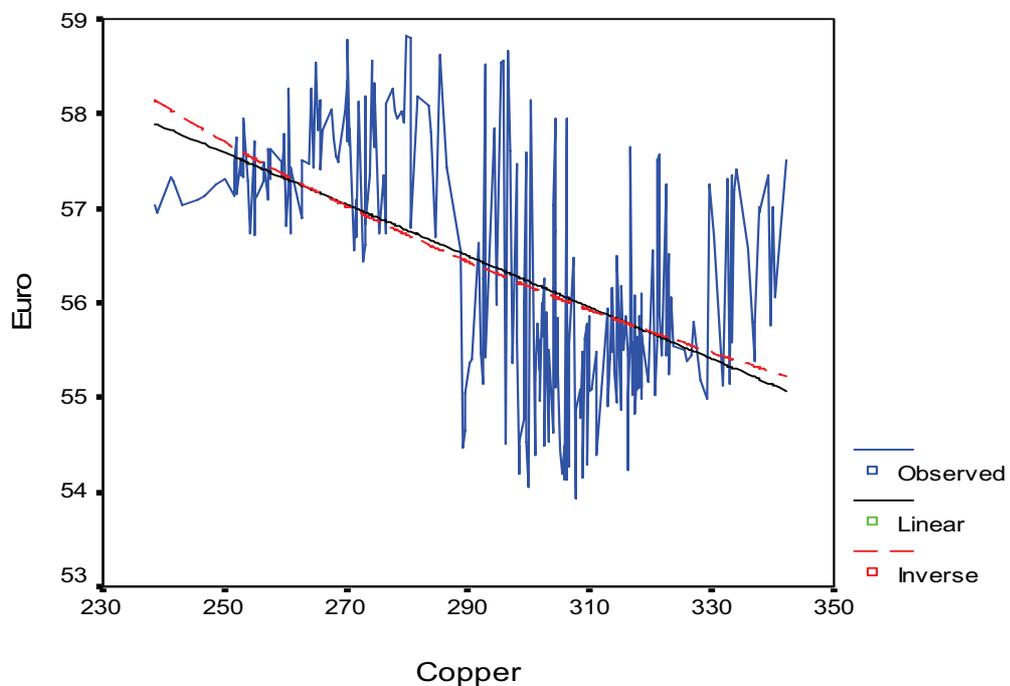
The linear line shows clearly that when Euro price increases the Crude oil prices also increase.

**Table 4.18**

Table showing the Curve Linear Fit to predict the price of Copper variations in Euro.

Model	R	Adjusted R Square
Copper	0.549	0.299
Dependent Variable: Euro		

**Figure: 4.16**



**Interpretation:**

From the above table and chart it is clear that when Euro decreases on the same time price of Copper appreciates. In near future there is chance of rise in Copper due to industrial demand, dollar decreases and also by other factors. The inverse line shows clearly that when Euro decreases the Copper will increase.

**Inference:**

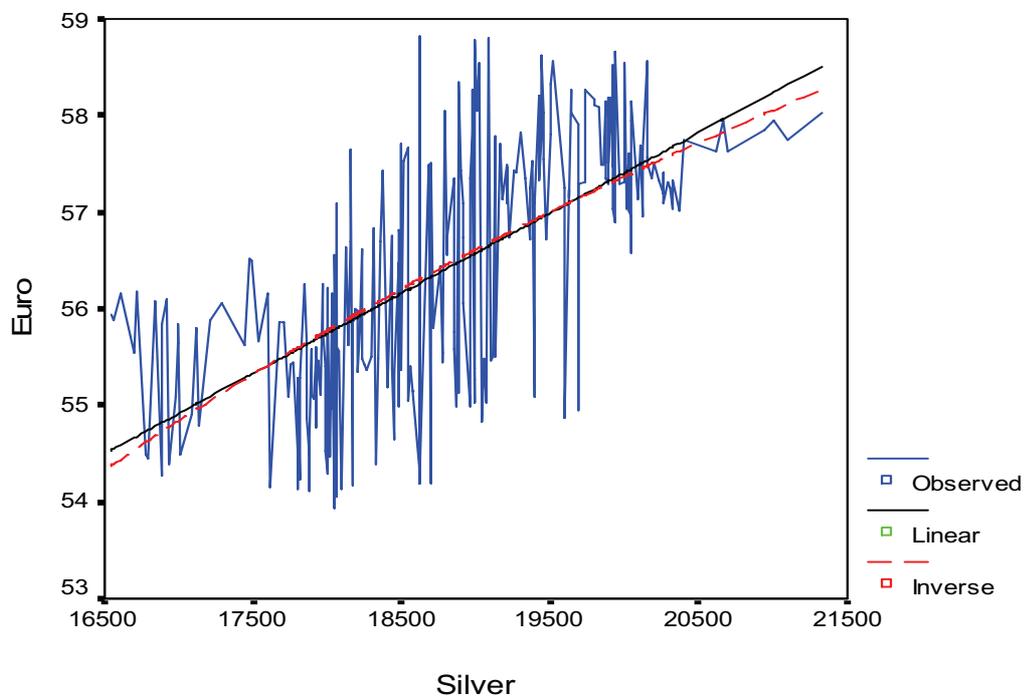
The linear line shows clearly that when Euro price decreases the Copper prices also increase.

**Table 4.19**

**Table showing the Curve Linear Fit to predict the price of Silver variations in Euro.**

Model	R	Adjusted R Square
Silver	0.631	0.435
Dependent Variable: Euro		

**Figure: 4.17**



**Interpretation:**

From the above table and chart it is clear that when Euro increases on the same time price of Silver will increase in same extent. In near future there is chance of rise in Silver due to Euro increases and also by other factors. The inverse line shows clearly that when Euro increases the Silver will increase.

**Inference:**

The linear line shows clearly that when Euro price increases the Silver prices also increase.

*Impact of Forex on Commodity Market for the year 2007*

***CONCLUSION***

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## CHAPTER 5

### 5.CONCLUSION

In Commodity market, impact of forex market is one of the most important factor. A measure that finds the level of relationship between price of \$ and € on Commodity, it is useful to predict the price and movement of commodities. The study is aimed in analysing the forex impact on select commodity market viz Gold, Crude oil, Copper and Silver.

The result about the relationship between Gold, Crude oil and Copper with Dollar implies low negative correlation and inverse relationship but with silver, it has positive correlation. In euro, the gold, crude oil and silver have direct influence and is positively correlated but with copper it has negative correlation. The other variables that affect the Gold, Crude oil, Copper and Silver prices like supply and demand, inflation rate and inventory, which are beyond the scope of the study. In the analysis it was found that influence percentage of \$ and €. Gold have 55%, Crude oil have 72%, Copper have 8.4%, and Silver have 40% influences by dollar. Gold, silver, and crude oil have high relationship with Euro. Gold have 40.5%, Crude oil have 54%, Copper have 30%, and Silver have 43.5% influences by Euro. In autocorrelation in these data and the model has a good fit with data. This study proves the prediction that price of commodity would rise in the near future.

## **5.1 RESULTS AND DISSCUSSION**

- It was found that the correlation coefficient of Gold and dollar is -0.220 it shows low negatively correlated and significant. Gold and dollar has inverse relationship that is gold increases dollar decreases and vice versa.
- It was found that the correlation coefficient of Crude oil and dollar is -0.746 it shows high negatively correlated and significant. Crude oil and dollar has inverse relationship that is Crude oil increases dollar decreases and vice versa.
- It was found that the correlation coefficient of Copper and Dollar is -0.296 it shows low negatively correlated and significant. Copper and Dollar has inverse relationship that is Copper increases dollar decreases and vice versa.
- It was found that the correlation coefficient of Silver and Dollar is 0.630 it shows high positively correlated and significant. So that it moves in same direction.
- It was found that the correlation coefficient of dollar and euro is 0.461 it shows low positively correlated and significant. So that it moves in same direction.
- It was found that the correlation coefficient of gold and euro is 0.638 it shows high positively correlated and significant. So that it moves in same direction.
- It was found that the correlation coefficient of crude oil and euro is 0.180 it shows low positively correlated and significant. So that it moves in same direction to some extent.
- It was found that the correlation coefficient of Copper and Euro is -0.549 it shows low negatively correlated and significant. Copper and Euro has inverse relationship that is Copper increases Euro decreases and vice versa.
- It was found that the correlation coefficient of Silver and Euro is 0.661 it shows high positively correlated and significant. So that it moves in same direction.
- Both gold and crude oil have high relationship and silver and copper have low relationship with dollar. Gold have 55%, Crude oil have 72%, Copper have 8.4%, and Silver have 40% influences over by dollar.
- Gold, silver, and crude oil have high relationship with Euro. Gold have 40.5%, Crude oil have 54%, Copper have 30%, and Silver have 43.5% influences over by Euro.

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- The linear line shows clearly that when Dollar Price decreases the Gold prices also increase.
- The linear line shows clearly that when Dollar prices decreases the Crude oil prices also increase.
- The linear line shows clearly that when Dollar price decreases the copper prices also increase.
- The linear line shows clearly that when Dollar price increases the Silver prices also increase.
- The linear line shows clearly that when Euro price increases the Gold prices will also increase.
- The linear line shows clearly that when Euro price increases the Crude oil prices also increase.
- The linear line shows clearly that when Euro price decreases the Copper prices also increase.
- The linear line shows clearly that when Euro price increases the Silver prices also increase.

## **5.2 CONSIDERED RECOMMENDATION**

- Investors can resort the hedge market to minimize their risk of trade in Gold, Crude oil, Copper and Silver based on Dollar and Euro prices. It is advisable that they can invest in Gold, Silver, and Crude oil when Dollar moves up because they have low negative correlation.
- Investors should be aware that small variations in Dollar which have great impact on the gold, copper, and crude oil. The influence of variations in \$ price and Gold, Crude oil and Copper prices in INR simultaneous, that \$ and Gold moves in tandem.
- Investors can invest in gold in the near future on dollar will be decreasing in INR, gold will be increases as well as crude oil.
- Gold, crude oil, and silver will have direct relationship so that investors advisable to buy gold, silver, and crude oil when Euro decreases and vice versa. When € increases, it is sensible to buy copper in the view of its inverse relationship.
- Investor can also resort to € currency market instead of \$ currency markets as \$ and € are positively correlated in their price in INR.

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