



A STUDY OF COMMODITY MARKET AND ITS RELATIONSHIP WITH STOCK MARKET WITH RESPECT TO METALS IN INDIA

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ABSTRACT

The relationship between the Commodity Market and the Stock Market has many implications for not only the participants of the markets but also for the policy makers, the producers of the commodity, and, in the case of developing nations, the economy as a whole. This relationship may be studied using various methods and by identifying the lead-lag relationship between the values of representative indices of the markets. In this research work, the dynamics of such relationship among the Commodity Markets and Stocks Markets in India are taken into analyze and study. This research intends to use the secondary data which are published in the various market official websites of Bombay Stock Exchange, National Stock Exchange and Multi Commodity Exchange of India Limited. The investment strategy can be formulated using the findings of this Research. Hence it is necessary that the arriving at meaningful conclusions / findings about the relationship between Indian Commodity Market and Indian Stock Market in view point of the market participants.

Key-words: arbitragers ,urg , speculators , hedging.

INTRODUCTION

India being a developing economy is still suffering from the problems like low level of income and capital accumulation. Despite the financial crunch India has developed a strong urg for industrialization and economic development in recent past. Amongst the various initiatives to undertake the process , one of the most important one is Commodity market and

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its relationship with Stock Market. The daily transaction of Commodity market is believed to be reason behind the volatility in Stock Market. Sometimes, the impact of Commodity on stock market seems to be significant and in some occasions it seems to be insignificant. Looking at the present state of Indian economy which is facing the problems like inflation, high fiscal deficits, low economic growth etc., it is in dire need of Commodity market through foreign funds to make the ends meet. The need for investments arises due to development of basic infrastructure ;to speed up the process of industrialization ;to undertake private investment; to fulfill global imperatives ;to harness comparative advantage ;to remove technological gaps etc.

History of Commodity Market

Commodity-based money and commodity markets in a crude early form are believed to have originated in Sumer between 4500 BC and 4000 BC. Sumerians first used clay tokens sealed in a clay vessel, then clay writing tablets to represent the amount—for example, the number of goats, to be delivered. These promises of time and date of delivery resemble futures contract.

Early civilizations variously used pigs, rare seashells, or other items as commodity money. Since that time traders have sought ways to simplify and standardize trade contracts.

Gold and silver markets evolved in classical civilizations. At first the precious metals were valued for their beauty and intrinsic worth and were associated with royalty. In time, they were used for trading and were exchanged for other goods and commodities, or for payments of labor. Gold, measured out, then became money. Gold's scarcity, unique density and the way it could be easily melted, shaped, and measured made it a natural trading asset.

Beginning in the late 10th century, commodity markets grew as a mechanism for allocating goods, labor, land and capital across Europe. Between the late 11th and the late 13th century, English urbanization, regional specialization, expanded and improved infrastructure, the increased use of coinage and the proliferation of markets and fairs were evidence of commercialization. The spread of markets is illustrated by the 1466 installation of reliable scales in the villages of Sloten and Osdorp so villagers no longer had to travel to Haarlem or Amsterdam to weigh their locally produced cheese and butter.

In 1864, in the United States, wheat, corn, cattle, and pigs were widely traded using standard instruments began trading on the Chicago Board of Trade (CBOT), the world's oldest futures and options exchange. Other food commodities were added to the Commodity Exchange Act and traded through CBOT in the 1930s and 1940s, expanding the list from grains to include rice, mill feeds, butter, eggs, Irish potatoes and soybeans. Successful commodity



markets require broad consensus on product variations to make each commodity acceptable for trading, such as the purity of gold in bullion. 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.¹

Through the 19th century "the exchanges became effective spokesmen for, and innovators of, improvements in transportation, warehousing, and financing, which paved the way to expanded interstate and international trade." Reputation and clearing became central concerns, and states that could handle them most effectively developed powerful financial centers.

What is a commodity market ?

A commodity market facilitates trading in various commodities. It may be a spot or a derivatives market. In spot market, commodities are bought and sold for immediate delivery, whereas in derivatives market, various financial instruments based on commodities are traded. These financial instruments such as 'futures' are traded in exchanges.

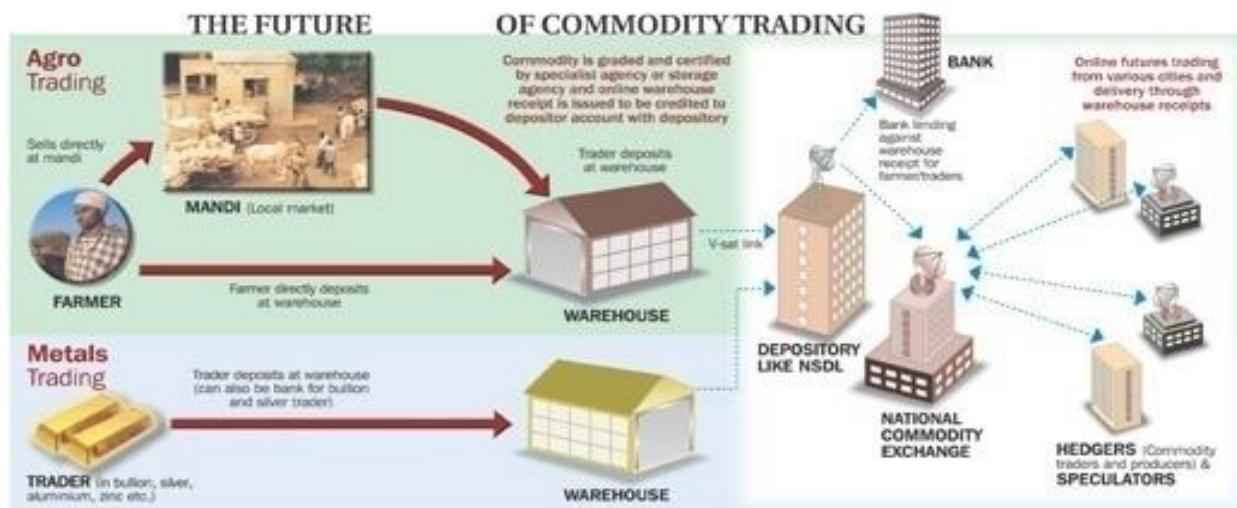
HOW TO COMMODITY MARKET WORK:

There are two kinds of trades in commodities. The first is the spot trade, in which one pays cash and carries away the goods. The second is futures trade. The underpinning for futures is the warehouse receipt. A person deposits certain amount of say, good X in a ware house and gets a warehouse receipt. Which allows him to ask for physical delivery of the good from the warehouse? But someone trading in commodity futures need not necessarily posses such a receipt to strike a deal.

A person can buy or sale a commodity future on an exchange based on his expectation of where the price will go. Futures have something called an expiry date, by when the buyer or seller either closes (square off) his account or give/take delivery of the commodity. The broker maintains an account of all dealing parties in which the daily profit or loss due to changes in the futures price is recorded. Squaring off is done by taking an opposite contract so that the net outstanding is nil. For commodity futures to work, the seller should be able to deposit the commodity at warehouse nearest to him and collect the warehouse receipt.

The buyer should be able to take physical delivery at a location of his choice on presenting the warehouse receipt. But at present in India very few warehouses provide delivery for specific commodities.

Following diagram gives a fair idea about working of the Commodity market.



Today Commodity trading system is fully computerized. Traders need not visit a commodity market to speculate. With online commodity trading they could sit in the confines of their home or office and call the shots.

The commodity trading system consists of certain prescribed steps or stages as follows:

I. Trading: - At this stage the following is the system implemented-

- Order receiving
- Execution
- Matching
- Reporting
- Surveillance
- Price limits
- Position limits

II. Clearing: - This stage has following system in place-

- Matching
- Registration
- Clearing
- Clearing limits
- Notation
- Margining
- Price limits
- Position limits
- Clearing house.



III. Settlement: - This stage has following system followed as follows-

- Marking to market
- Receipts and payments
- Reporting
- Delivery upon expiration or maturity.

The objectives of the study

1. To study the whether there is any relationship existing between the commodity market and stock market.
2. To analyse and study the performance of various commodities in commodity market.
3. To study the fluctuations in commodity prices and how it affects the stock prices of the related industry.
4. To suggest the investor of India infoline on their investment in these commodities and also suggest to investors about the future prospects.
5. To find the equity market performance before & after of commodity markets evolution.
6. To know the commodity market capital impact on equity benchmark returns and its market capital growth.
7. To know the select economic factors effected on equity and commodities
8. To find the future movement of equity benchmark based on MCX- Comdex
9. To study the current scenario of Commodity Market in India.
- 10 . To analyse the factors mainly affect on success of Commodity Market in India.

Hypothesis of the study:

Null Hypothesis:

Hypothesis 01: There is no significant impact of Commodity market on the Stock market in India.



Hypothesis 02: There is relationship exist between the Commodity market and Stock market.

Hypothesis 03: That the fluctuations in the Commodity prices affects the stock prices of the related industry.

Alternate Hypothesis:

Hypothesis 11: There is significant impact of Commodity market on the Stock market in India.

Hypothesis 12: There is no relationship exist between the Commodity market and Stock market.

Hypothesis 13: That the fluctuations in the Commodity prices does not affects the stock prices of the related industry.

Analysis

Once data on the independent and dependent variables have been collected analysis will be conducted to study the relationship between the different commodity market and stock market systems and each of the five market efficiency indicators, controlling for the other determinants of market efficiency at the establishment.

The descriptive statistics from the survey data will provide a background and benchmark. However these statistics cannot substitute for a richer more qualitative description of exactly relationship between commodity market & stock Market.

Qualitative Methodology

Much of the literature on the performance effects of HRM calls for more qualitative approaches to be adopted to complement the standard statistical analysis in order to understand some of the more distinct performance effects and to obtain a better description and understanding of exactly *how* HRM impacts performance (Becker and Gerhart 1996, 779(23); Guest 1997, 263-276; Ichniowski et al. 1997, 299). This study will take the hypotheses and findings from the quantitative part of the analysis.

Data Collection

In addition to the main survey responses, further standardized but open-ended interviews will be conducted with personnel internal and external to the establishments. These will include interviews with the owners of each establishment and with external sources such as their service providers and buyers. The aim will be to get a better sense of some of the overarching



company philosophies governing practice at the establishments and a fuller picture of the establishments' performance in terms of the criteria selected by the buyers such as on time delivery, quality and general management aptitudes.

The required data related to six major commodities have been taken from MCX one of the leading commodity exchange in India. The study is confined to growth of the commodity market from 2003 to 2010, the period have been taken deliberately because the contracts in major commodities have been started during this period. Moreover, the impact of recession on secondary market has also been studied in relation to the trend of commodity market. The percentage share in specific segment for the selected commodities has been evaluated to study the weight of commodities taken. BSE-SENSEX, the major barometer of financial market is taken on average basis to compare the relations

Analysis

In order to examine the interdependence, alternatively known as lead-lag relationship, between the underlying spot and futures market of the agricultural commodity sector, the basic data used in this study consist of daily price histories for the near-month futures contract of the selected agricultural commodities, and their respective spot prices. The concerned data is taken for a period of 7 years, starting from 2004 to August 2010, and is collected from the website of National Commodities and Derivatives Exchange (NCDEX).

The exact period may vary for different commodities, depending on the availability of trading information. In case there are more than one trading prices, the last price, or the closing price is considered for the study. If there is any missing observation, due to non-trading, in any day and in any of the market, the common practice is to remove that specific interval (s) from the sample and therefore has been applied here also.

The commodities considered here are agricultural commodities from all the major categories (Spices, Pulses, Cereals, OIL and Oil Seeds, and Others), as specified by the commodity exchange. The commodities from all the categories are primarily selected based on their market share in the commodity futures market in India.

Non-parametric statistical units will be used to test the association between some qualitative characters and conclusions will be drawn on the basis of formation of H_0 and H_1 . To be specific, chi-square test will be applied to test the hypotheses.

Questionnaire design



Walliman (2001:236) argues that as a method of data collection, the questionnaire is a very flexible tool, but it should be used carefully in order to fulfil the requirements of the researcher's research.

Kothari (1985:124-125) states that a questionnaire that is forwarded to respondents via mail has certain advantages, which are:

- The cost involved is low
- It is free from the bias of the interviewer
- Respondents have sufficient time to provide well considered answers
- Respondents who may normally not easily approachable, can now be reached conveniently, and
- Large samples results are more dependable and reliable.

The disadvantages are as follows:

- Low rate of return
- It could be used only if the respondents are educated and cooperating
- Control over the questionnaire may be lost once it has been sent off
- The possibility of ambiguous replies
- The difficulty of knowing whether respondents are truly representative, and
- The method is likely to be the slowest of all.

The literature review in Chapter 2 serves as the bases for developing and constructing the questionnaire. The questions in the questionnaire were derived from the literature review study. This was specifically used to reveal shortcomings and inadequacies commodity and stock market.

Questionnaire type

(i) Qualitative

Brewerton and Millward (2001:12) argue that quantitative methods focus on interpretation and the emphasis is on subjectivity rather than objectivity. However, there is some flexibility in the process of conducting research. There is an orientation towards the process rather than on an outcome and an explicit recognition of the impact of research process on the research situation. In the event the researcher interviewed seven managers who are responsible for managing the performance appraisals and system in their areas of responsibilities.

(ii) Quantitative



According to Patten (1997:19) quantitative research is presented in numbers or quantities. This type of research emphasizes that the data produced should be easily reduced to numbers, such as structured questionnaires and interviews with an objective format. This method is able to accommodate the selection of large samples, which is made possible within the limited research budget by objective instruments such as an anonymous, objective questionnaire that takes little time to administer.

This research focused on quantitative research. The collection of the data was placed in different categories and scales for facilitating the process to interpret the analysis.

Questionnaire Structure

According to Brewerton et al (2001:69-70), interviews could take place in a variety of forms depending on the type of data required in the research questions being asked, which also depend on the availability of resources. The types of interviews are detailed below:

Structured interviews

This involves a prescribed set of questions, which the researcher asks in a fixed order. The interviewee generally responds by the selection of one or more options. The data are easy quantifiable, as are the comparability of responses and guaranteed coverage of the area of interest to the researcher. The interviewer is able to answer questions if the interviewee should be confused.

Semi-structured

This method incorporates elements of both quantifiable, fixed choice responding and the facility to explore. One is also able to probe more in depth certain areas of interests.

Unstructured interviews

This method allows the researcher carte blanche to address any or all of the given topics to be researched. Questions are not fixed and are allowed to evolve during the interview process. Comparability and ease of analysis and quantification are secondary to obtain rich, salient data from each individual using open-ended rather than forced-choice, questions.

Ethnographic interviews



This amounts to unstructured interviews, but in the context of the target research area and extending beyond the restrictions of an unstructured interview, it allows the interviewees to develop their responses in their own way, using their own frame of reference.

The researcher developed a structured questionnaire to collect the data for the analysis of the research. This method was most suitable for the purpose of this specific research.

Open-ended and closed questions

Oppenheim (1996:40) argues that all questions are either “open” or “closed”.

Open-Ended Questions

This method gives freedom to the respondent. Once the respondent understands the intent of the question, he is able to let his thoughts roam freely, unencumbered by a prepared set of replies. The spontaneity is often extremely worthwhile to record.

Closed questions

This type of questions could be attitudinal as well as factual. The question guides the respondent's answer. Closed questions are comparatively easy and quick to answer. They require no writing and the quantification is straightforward. A disadvantage of the closed questions is the loss of spontaneity and expressiveness. Closed questions are often cruder and less subtle than open ones.

Measuring the questions

According to Leedy (2001:31), the concepts of validity and reliability will be encountered repeatedly in research methodology. These terms are often used in connection with measurement. These two measuring instruments influence the extent to which the researcher is able to learn during the research and the meaningful conclusions that may be drawn from the data. It is, therefore, important that the researcher needs to ensure that these two measuring instruments are present when constructing and interviewing from the questionnaire.

The two measuring instruments are discussed below according to Litwin (1995):

Reliability



F W Struwig and G B Stead (2001:130) argue that “reliability is the extent to which the test scores are accurate, consistent or stable”.

Litwin (1995:8-21) refers to the various types of reliability. Reliability is commonly assessed in three forms, which are:

- *Test-retest reliability*

This is used in indicators of survey instrument reliability. It is a measure of how reproducible a set of results is.

- *Alternate-form reliability*

This method helps to provide one way to escape the problem of the practice effect. It measures the same attributes by using differently worded items.

- *Internal consistency reliability*

This method is a psychometric measure in assessing survey instruments and scales. This is applied to groups of items that are thought to measure different aspects of the same concepts.

Litwin (1995:27) also writes about the inter observer reliability, which provides a measure of how well two or more evaluators agree in their assessment of a variable.

Struwig et al (2001:132) writes about another reliability type:

- *Split-half reliability*

This method focus on the internal consistency of the test score. The test is split in two halves and the two halves are constricted by randomly allocating each item to one of the halves.

Validity

According to Struwig (2001) validity refers to the extent to which research design is scientifically sound or appropriately conducted.

Litwin (1995:34-) writes about the various types of validity. Validity is commonly assessed in several types, which are:

- *Face validity*

This method is based on a cursory review of items by untrained judges. The judgment is subjective and is not considered by many researchers as a measure of validity at all.

- *Content validity*



This type is a subjective measure of how appropriate the items seem to a set of reviewers who have some knowledge of the subject matter.

- *Concurrent validity*

This type requires that the survey instrument in question be judged against some other method that is acknowledged as an “old standard” for assessing the same variable.

- *Criterion validity*

This is a measure of how well one instrument measures up against another. This method provides more quantitative evidence on the accuracy of a survey instrument.

- *Predictive validity*

It is the ability of a survey instrument to forecast future events, behaviors, attitudes or outcomes.

- *Construct validity*

This method is most valuable, yet a most difficult way of assessing a survey instrument. It is difficult to understand, to measure and report. This method is commonly used after years of experience with a survey instrument.

- *Convergent validity*

This method implies that several different methods for obtaining the same information about a given method produce similar results.

- *Divergent viability*

This is a theoretical way of thinking about the ability of a measure to estimate the underlying truth in a given area.

Outcomes Of Research

This study has three distinct but related areas of analysis that raise a number of key research questions. By intent, this study will be a descriptive research that uses the survey method. Hence the study will be a fact-finding investigation with adequate interpretation. It will focus on certain aspects or dimensions of the identified problems. The study will be designed to gather descriptive information. Data will be collected by administering Interview Schedules and interviewing the respondents. Data will be analysed using statistical techniques consistent with the objectives of the study. This part of the analysis will be both descriptive and exploratory, because little previous research exists on the topic.



These two areas of analysis lead to the following research questions:

1. What are the characteristics and components of the commodity market and stock market.
2. What effect do particular policies and practices, and systems of practice have on performance?

CONCLUSION:

The main aim of this research was to explore about the direction and degree of relationship between Indian Commodity Market and Indian Stock Market. The value of major listed commodities such as Gold, Copper, Aluminium& Crude Oil of Multi Commodity Exchange of India Limited one among premier commodity markets in India.

The values of major indices such as SENSEX & NIFTY of Indian stock markets for the particular period had been taken as samples for this Project study. The project used the Karl Pearson's Coefficient of Correlation method to find out relationship between Indian Commodity Market and Indian Stock Market.

The major conclusion of the study is that there exists meaningful relationship between Indian Commodity Market and Indian Stock Market. And that relationship is of positive in nature; that is Indian Commodity Market follows the path of Indian Stock Market. It is expected that the findings and suggestions as above explained in the previous sections will definitely help the stake holders including the regulators.

It conclude the analysis of commodity markets influence on equity market. This analysis has been analyzed from the period 1994-2014. Among the investors fraternity of equity market were having a notion that the commodities market were capturing capital from the equity investors. In this analysis, performances of equity were found to be stronger after the establishment of commodities stock exchange in India.

Hence there is the future scope to do research in this area where to measure the exact impact on commodities investment on equity returns.

- The trading in commodity derivatives started on Dec. – 2003.
- Within a short span of 3 years the trading volume in commodity derivatives increased in a rapid manner, now it going to equalize with the financial derivatives trading volumes.
- First derivatives emerged as hedging products in commodities.



- These commodities are the risk management instruments which transfers the pricing risks to other parties.
- Internationally, commodity derivatives are exchange - traded.
- In the bullish market, the investors can earn profits by buying the commodity futures.
- In the bearish market, the investors can earn profits by selling the commodity futures.
- The hedgers can transfer their risks to other parties by ways of long hedge and short hedge.
- The speculators can build large positions with little margins by way of leverage and their profit/loss potential is unlimited.
- The arbitragers can also earn risk less profits by ways of cash –and-carry arbitrage and reverse cash-in-carry arbitrage.
- These commodity products are very much new to India.
- The SEBI is taking necessary actions to create awareness into the investors.

REFERENCES

- Abhyankar, A. (1998), Linear and Nonlinear Granger Causality: Evidence from the U.K. Stock Index Futures Market, *The Journal of Futures Markets* 18 (5), 519-540.
- Ahuja, N. L. (2006); Commodity Derivatives Market in India: Development, Regulation and Future Prospects; *International Research Journal of Finance and Economics*; Issue 2
- Bessler, David A. and Covey, Ted (August 1991) Cointegration: some results on U.S. cattle prices, *The Journal of Futures Markets* 11(4) 461–74
- Bose, S (2008); Commodity Futures Market in India - A Study of Trends in the Notional Multi-Commodity Indices; *ICRA Bulletin of Money and Finance* .
- Choudhry, T. (1997), Short-run Deviations and Volatility in Spot and Futures Stock Returns: Evidence from Australia, Hong-Kong and Japan, *The Journal of Futures Markets* 17 (6), 689-705.
- Cox, Charles C. (December 1976) Futures trading and market information, *Journal of Political Economy* 84(6) 1215–37



- CR Kothari, Research Methodology: Methods and Techniques, 2nd ed. New age International, 2007
- David Brown, KassandraBently (2008) All about Stock Market Strategies, New Delhi Tata McGraw - Hill Publications.
- DhandapaniAlagiri (2008) Commodity Markets: Recent Developments, New Delhi, Vikash Publications.
- Dickey, David A. and Fuller, Wayne A. (July 1981) Likelihood ratio statistics for autoregressive time series with a unit root, *Econometrica* 49(4) 1057–72
- Dickey, David A. and Fuller, Wayne A. (June 1979) Distribution of estimates for autoregressive time series with a unit root, *Journal of the American Statistical Association* 74(366) 427–31
- Elumalai, K, N. Rangasamy, and R.K. Sharma, 2009 "Price Discovery in India"s Agricultural Commodity Futures Markets", *Indian Journal of Agricultural Economics*, vol. 64, no. 3, pp. 315-23.
- Engle, R.F. and Ng, V.K., (1993), "Measuring and testing the Impact of News on Volatility, *The Journal of Finance*, Vol. 48, 1022-1082.
- Engle, Robert F. and Granger, Clive W. J. (March 1987) Cointegration and error correction: representation, estimation and testing, *Econometrica* 55(2) 251–76
- Epps, T.W. and Epps, M.L., (1976), "The Stochastic Dependence of Security Price Changes and Transaction Volumes: Implications for the Mixture of Distributions Hypothesis," *Econometrica*, Vol.44, No.2, 305-321.
- Epps, T.W., (1975), "Security Price Changes and Transaction Volumes: Theory and Evidence," *The American Economic Review*, Vol.65, No.4, 586-597.
- Fama, E.F., (1965), "The Behavior of Stock-Market Prices," *The Journal of Business*, Vol. 38, No. 1, 34-105.
- Ficci (October 2002) Background paper, International conference on commodity futures and derivatives trading, Mumbai.



- Gallagher, L. and Kiley, D., (2005), "Volume and GARCH Effects for Dual-Listed Equities:Evidence from Irish Equities," *The Irish Accounting Review*, Vol.12, No.1, 63-82.
- Gallant, Rossi and Tauchen, (1992), "Stock Prices and Volume," *The Review of Financial Studies*, Vol.5, No.2, 199-242.
- Gallo, G.M. and Pacini, B., (2000), "The Effects of Trading Activity on Market Activity," *European Journal of Finance*, Vol.6, 163-175.
- Garbade, K, D, Silber, W, L, 1983, „Price movements and price discovery in futures and cash markets“, *The Review of Economics and Statistics*, vol. 65, pp. 289-297
- Garcia, P., Raymond, M.L. and Hector, Z., (1986), "Lead-Lag Relationships between Trading ."
- Gaur, A, and Bansal, M, 2010, "A Comparative Study of Gold Price Movements in Indian and Global Markets", *Indian Journal of Finance*, Vol. 4, No. 2, pp. 32-37.
- Ghosh, N, 2008 „Price Discovery in Commodity Markets: Floated Myths, Flouted Realities“, *Commodity Vision*, vol. 3, no. 1, pp. 33-38.
- Godfrey, Granger, C. W. J. and Morgenstern, O., (1964), "The Random Walk Hypothesis of Stock Market Behavior," *Kyklos*, Vol.17, No.1, 1-30.
- Grammatikos, T. and Saunders, A., (1986), "Futures Price Variability: A Test of Maturity and Volume Effects," *The Journal of Business*, Vol.59, No.2, 319-330.
- Granger, C. W. J and Morgernstern, O., (1963), "Spectral Analysis of New York Stock Market Prices," *Kyklos*, Vol.16, No.1, 1-27.
- Griffin, J.F. et al., (2004), "Stock Market Trading and Market Conditions," Working Paper,Downloaded from www.nber.org on June 16, 2006.
- Hanna, (1978), "Security Price Changes and Transaction Volumes: Additional Evidence," *American Economic Review*, Vol.68, No.4, 692-695.



- Harris, L. and Gurel, E., (1983), "The Joint Distribution of Speculation Prices and of Daily Trading Volume," Working Paper No.34-84, University of Southern California, Los Angles, CA.
- Harris, L. and Gurel, E., (1984), "Transaction Data Tests of the Mixture of Distribution Hypothesis," The Journal of Financial and Quantitative Analysis, Vol. 22, N0.2, 127-141.
- Harris, L. and Gurel, E., (1986), "Cross-Security Tests of Mixture of Distribution Hypothesis," The Journal of Financial and Quantitative Analysis, Vol.21, No.1, 39-46.
- J N Dhankar (2005) The Indian Commodity - Derivatives Market in Operation, New Delhi, Vikash Publications.
- J.N. Dhankar "Reducing risk through commodity exchanges "journal of ICFAI university press, all rights reserved(2007) (59-68)
- Jain, P.C. and Joh, G., (1986), "The Dependence between Hourly Prices and Trading Volume," The Journal of Financial and Quantitative Analysis, Vol.23, No.3, 269-283.
- James and Edmister, (1983), "The Relation between Common Stock Returns, Trading Activityand Market Value," The Journal of Finance, Vol.38, No.4, 1075-1086.
- Jennings and Fellingham, (1981), "An Equilibrium Model of Asset Trading with Sequential Information Arrival," The Journal of Finance, Vol.36, No.1, 143-161.
- Jones, C.M., Kaul, G. and Lipson, M.L., (1994), "Transactions, Volume and volatility," The Review of Financial Studies, Vol.7, No.4, 631-651.

- **Websites:**

<http://www.indiainfoline.com/>
<http://www.swastika.co.in/>
<http://www.investopedia.com/>
<http://business.mapsofindia.com/>
<http://www.managementparadise.com/>
<http://www.scribd.com/>
<http://www.gujaratmba.com/>