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A STUDY ON RELATIONSHIP BETWEEN INDIAN COMMODITY MARKET AND INDIAN STOCK MARKET WITH SPECIAL REFERENCE TO EXCHANGES IN INDIA – AN ANALYTICAL FRAMEWORK

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***Abstract*:** *This article is a new endeavor to find out the different operating nuances of stock market and commodity market in India for the period of 2008 to 2013, with the help of the research tools like, Standard Deviation, Portfolio Risk and Portfolio Return, Correlation, Relative Strength Index (RSI), Simple Moving Average (SMA) to find out the players involved in these two markets, The regulators of Commodity market and Stock market. This paper aims to evaluate the portfolio risk and portfolio return, the degree and direction of the relationship between Indian Commodity Market and Indian Stock Market and to analyze the overall relationship between Indian Commodity market and Indian Stock market.*

Key words: *Stock Market, Commodity Market, Standard Deviation, Portfolio Risk and Return, Correlation, RSI, SMA.*

INTRODUCTION

India is heading a phenomenal change in its commodity derivate operations, Forward Market Commission, the so called Regulator of Commodity market in India, since September 28th 2015, merged with Stock market regulator Securities Exchange Board of India. This article is an attempt to compare the operations of stock market with commodity market in India.

This paper examines hedging effectiveness of futures contract on a financial asset and commodities in Indian markets. In an emerging market context like India, the growth of capital and commodity futures market would depend on effectiveness of derivatives in managing risk. For managing risk, understanding optimal hedge ratio is critical for devising effective hedging strategy.

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REVIEW OF LITERATURE

There have been number of theoretical and empirical studies that provide evidence on the relationship between Indian Stock Market and Indian Commodity Market. An elaborative review of the same which was earlier carried out by Industry experts and various Scholars had been carried out. The research and findings of the same had been carefully analyzed and in support of this project study had been obtained.

Michel Robe (2008) studied the relationship between Stock Market and Commodity Market in his study called Commodities and Equities: A "Market One" He used dynamic correlation and recursive co-integration techniques and he found that the relationship between the returns on the investable Commodity and Equity indices has not changed significantly in the last fifteen years.

Another Economist, Sakthi Vel Rani Jr. & Mariappan Selvarani September 23, 2010 An Analysis of the Dynamic Relationship between Commodity Market and Financial Market: Indian security market has seen a boom that started in December 2005 and rallied throughout 2006-07. It reached the highest in January 8, 2008, then started declining from October 2008, but is recovering now. India's industrial growth attracted more foreign investment which was the major reason behind the boom. The current global economic recession has affected the Indian market worst by low participation in the market due to sharp demand for liquidity and a corresponding tendency to disengage from risk-taking. The decline of industrial production followed by low demand for commodity impacted commodity market also. The aim of this paper is to show how the financial crisis affected the commodity market. Is there any relationship between commodity and financial market? For this study, the indices of MCX, MCX Agri, MCX Energy, and MCX Metal are considered for commodity market, and Nifty and Dow Jones for financial market. The results will help in deciding the policy for business and better understanding of the market interaction.

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Sushmita Bose (2008) in his study called Commodity Future Market in India – A Study of Trends in the National Multi Commodity Indices found that there is similar price movement in the Indian Commodity derivatives Market to the Indian financial derivatives Market. He also found that as for correlation with the Indian Stock Market index by the Indian Commodity Market the degree of correlation is positive & fairly high around 70%. He further find that Multi commodity indices, which have higher exposure to metals and energy products, with clear and efficient price dissemination in national and international markets, behave like the Equity indices in terms of efficiency and flow of information.

Another Economist, Brajesh Kumar & Priyanka Singh June 1,2008 Volatility Modeling, Seasonality and Risk-Return Relationship in Garch-in-Mean Framework: The Case of Indian Stock and Commodity Markets This paper is based on an empirical study of volatility, risk premium and seasonality in risk-return relation of the Indian stock and commodity markets. This investigation is conducted by means of the General Autoregressive Conditional Heteroscedasticity in the mean model (GARCH-in-Mean) introduced by Engle et al. (1987). A systematic approach to model volatility in returns is presented. Volatility clustering and asymmetric nature are examined for Indian stock and commodity markets. The risk-return relationship and seasonality in risk-return are also investigated through GARCH-in-Mean modeling in which seasonal dummies are used for return as well as volatility equation. The empirical work has been carried out on market index S&P CNX Nifty for a period of 18 years from January 1990 to December 2007. Gold prices from 22nd July 2005 to 20th February 2008 and Soybean from October 2004 - December 2007 are also considered. The stock and commodity markets returns show persistence as well as clustering and asymmetric properties. Risk-return relationship is positive though insignificant for Nifty and Soybean where as significant positive relationship is found in the case of Gold. Seasonality in risk and return is also found which suggests the asymmetric nature of return, i.e. negative correlation between return and its volatility. Sushmita Bose (2008) in his study called Commodity Future Market in India, Another Economist, Brajesh Kumar & Priyanka Singh June 1,2008 Volatility Modeling, Seasonality and Risk-Return Relationship in Garch in Mean Framework.

RESEARCH DESIGN

The research design is descriptive in nature with in which the research was conducted. It constitutes the blue print for the collection measurement for analysis of the data this study is analytical research the researcher use the facts or information is already available and analyze these to make critical evaluation of the study.

DATA COLLECTED AND USED IN THIS PAPER ON STOCK MARKET ANALYSIS

Researcher has used only secondary data collected from the main sources are annual reports of the company from 2008-2009 to 2012-2013. As the samples taken from the two markets for a particular period of time and the kind of deliverables to be found out from this study, it is decided that Correlation Analysis methodology can be used for this study. The details those are required for carrying out this study like the type of Data & Sources, Period on which time the data collected / available and Frame works of the Project study are elaborated in the sections as hereunder.

DATA AND SOURCES FOR COMMODITY MARKET ANALYSIS

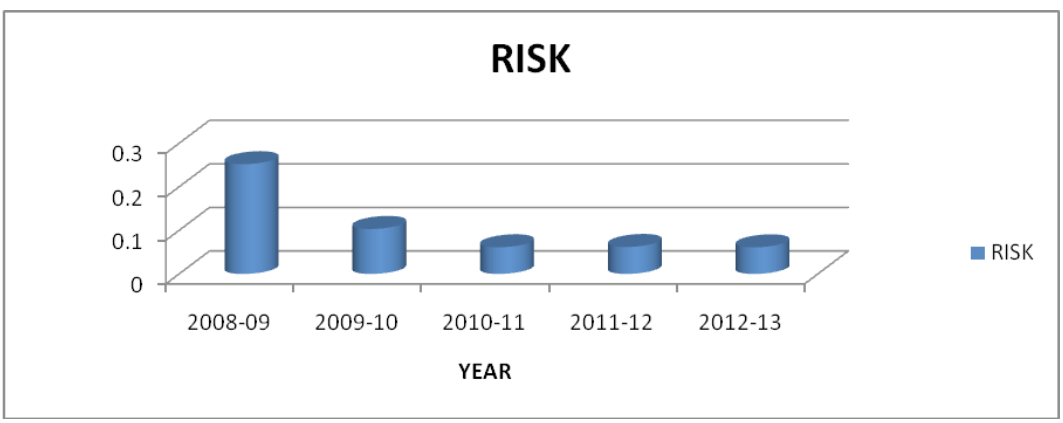
The samples such as the value of major listed commodities such as Gold, Copper, Aluminum & Crude Oil of Multi Commodity Exchange of India Limited and the values of major indices such as SENSEX & NIFTY of Indian stock markets..

STATISTICAL TOOLS USED FOR ANALYSIS:

In order to analyze the risk of both past five years historical data in equity market, the Standard deviation and correlation and Ration analyze have been used were Standard Deviation, Portfolio Risk and Portfolio Return, Correlation, Relative Strength Index, Simple Moving Average

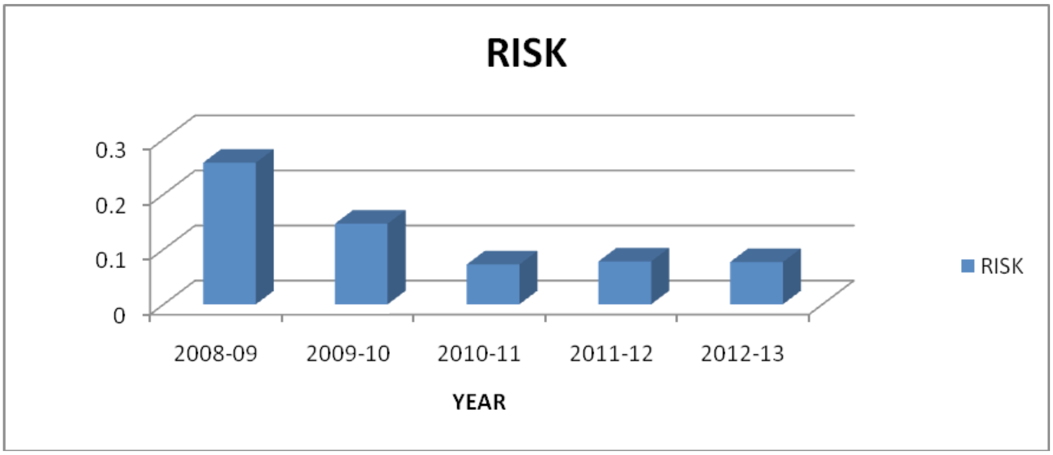
DATA ANALYSIS AND INTERPRETATION

Chart No. 1 RISK ANALYSIS OF BSE



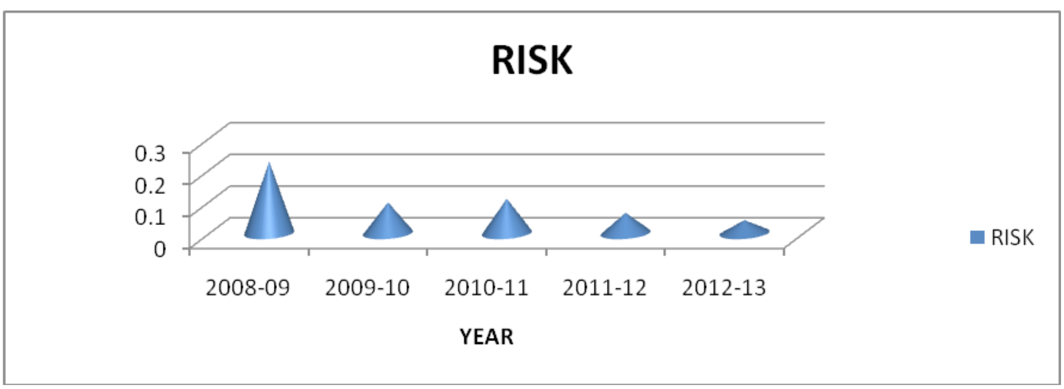
The above chart shows that, in 2008 – 2009 it holds the maximum risk in BSE of 0.2520039 and in the year 2012 -2013 it holds a minimum risk of 0.061046 and overall Average risk of 0.1078911.

Chart No. 2 RISK ANALYSIS OF NSE:



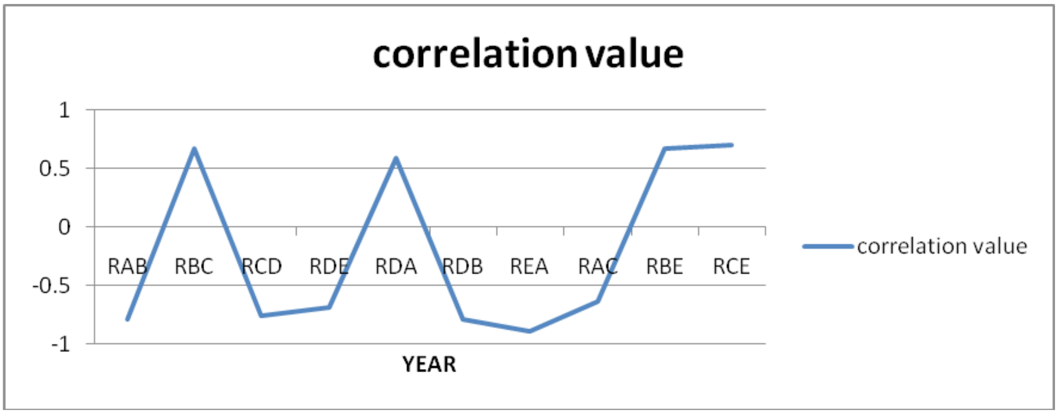
From the above table it is interpreted that, in 2008–09 it holds the maximum risk of 0.257578111 and in the year 2010 -11 it holds a minimum risk of 0.072425681 and overall an Average risk of 0.126334167.

Chart No. 3 THE RISK OF MCX



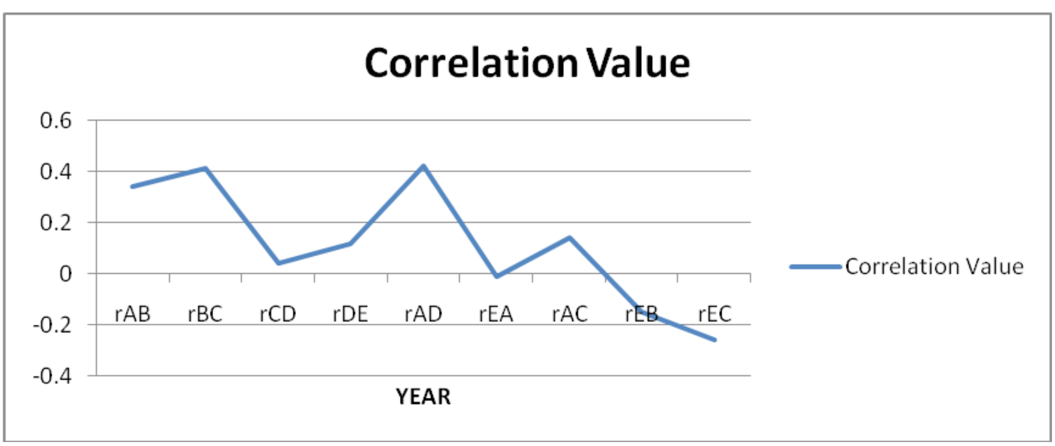
From the above diagram it is clear that, in 2008–09 it holds the maximum risk of 0.226645 and in the year 2012 -13 it holds a minimum risk of 0.041137 and overall Average risk of 0.107691.

Chart No. 4 THE CORRELATION OF BSE



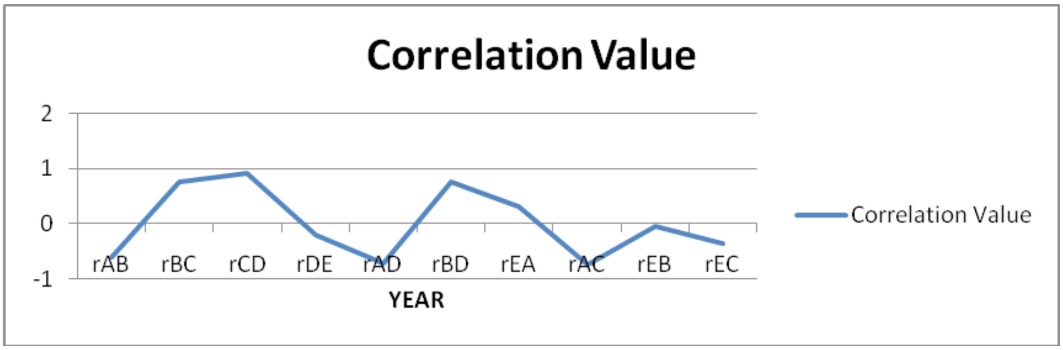
In the correlation among all the five years in BSE, it shows more than 0.6 and it shows a positive sign except RAB, RCD, RDE, RBD, REA & RAC all the other correlation shows an positive relation, so it shows that mentioned year will get high return. But it is always feasible to get both positive and negative relationship so that investors can get moderate risk.

Chart No: 5 THE CORRELATION OF NSE



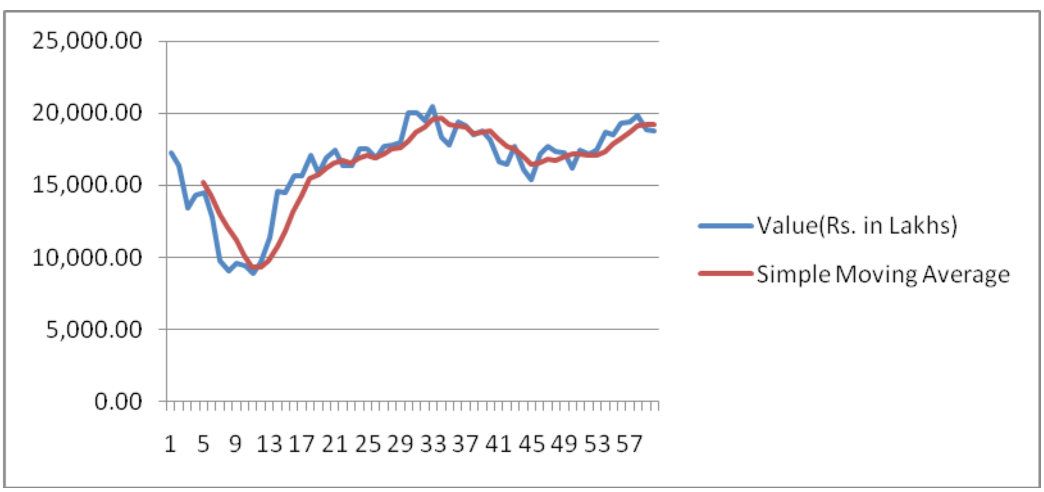
In the correlation among all the five years in NSE, more than 0.6 then it shows a positive sign except rEB, rEA & rEC all the other correlation shows an positive relation, so it shows that year will get moderate return. But it is always feasible to get both positive and negative relationship so that investors can get moderate risk.

Chart No. 6 THE CORRELATION OF MCX



In the correlation among all the five years in MCX, more than 0.6 then it shows a positive sign except rAB, rDE, rAD,rAC, rEB & rEC all the other correlation shows an positive relation, so it shows that year will get high return. But it is always feasible to get both positive and negative relationship so that investors can get moderate risk.

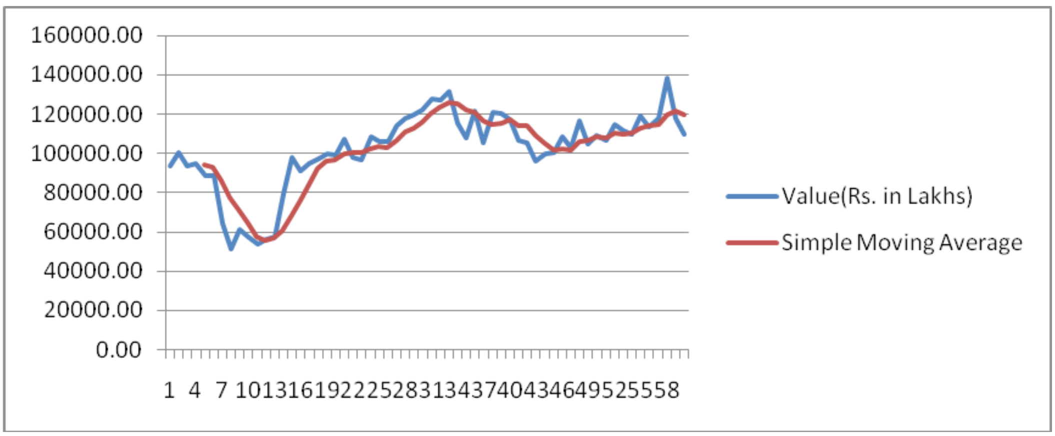
Chart No: 7 THE SIMPLE MOVING AVERAGE OF BSE



From the above chart it is inferred that the investors can make the decision to buy and sell with the help of prices and simple moving average. The year 2008-09 there is a sharp decrease and an immediate dip in prices and there is an increase again followed by a sharp drop which extends nearly throughout the year. The year 2009-10,there is a sharp drop in prices and graph keeps rising steady apart from a few dips at long intervals it is steady throughout the year. The year 2010-

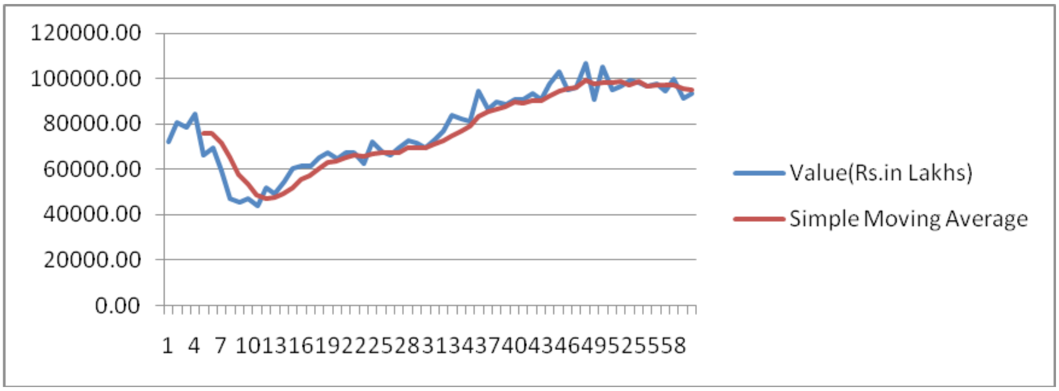
11, there's a further steep increase, a slight drop, again a big rise, and a fall, but the prices have always been on the rise. The year 2011-12 starts with a drop, but steadies immediately and the graph moves on the increase and the year end with a steep increase and a small drop. To wind up the year 2012-13 starts with an increase in prices, and then a slight drop, but it rises again and then moves on moderately, without much fluctuations.

Chart No: 8 SIMPLE MOVING AVERAGE OF NSE



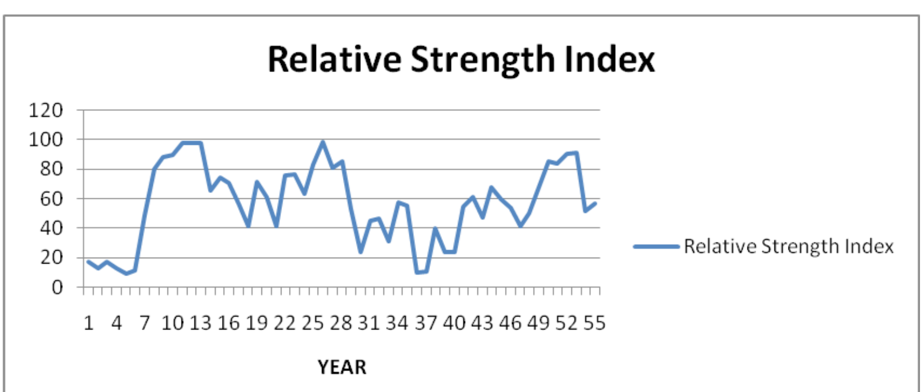
From the above chart it is inferred that the investors can make the decision to buy and sell with the help of prices and simple moving average. To start with, for the year 2008-09 there is a sharp increase and an immediate dip in prices and there is an increase again followed by a sharp drop which extends nearly throughout the year. In 2009-10, prices in the graph keeps rising steady apart from a few dips at long intervals it is steady throughout the year. For the year 2010-11, there's a further steep increase, a slight drop, again a big rise, and a fall, but the prices have always been on the rise. It can be considered this period as a prosperous year for investors. The year 2011-12 starts with a drop, but steadies immediately and the graph moves on the increase and the year end with a steep increase and a small drop. To wind up the year 2012-13 starts with an increase in prices, and then a sudden drop, but it rises again and then moves on moderately, without much fluctuations.

Chart No. 9 THE SIMPLE MOVING AVERAGE OF MCX



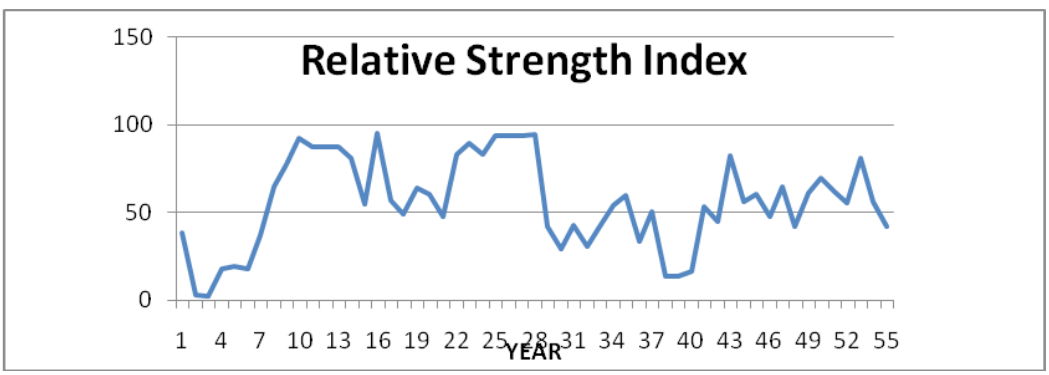
From the above chart it is inferred that the investors can make the decision to buy and sell with the help of prices and simple moving average. In 2008-09 if there is a sharp increase and an immediate dip in prices and there is an increase again followed by a sharp drop which extend nearly throughout the year. For the year 2009-10,there is a sharp rise in prices and graph keeps rising steady apart from a few dips at long intervals it is steady throughout the year. For the year 2010-11, there's a further steep increase, a slight drop, again a big rise, and a fall, but the prices have always been on the rise. It can be considered this period as a prosperous year for investors. The year 2011-12 starts with a drop, but steadies immediately and the graph moves on the increase and the year end with a steep increase and a small drop. To wind up the year 2012-13 starts with an increase in prices, and then a sudden drop, but it rises again and then moves on moderately, without much fluctuations.

Chart No. 10. THE RELATIVE STRENGTH INDEX OF BSE



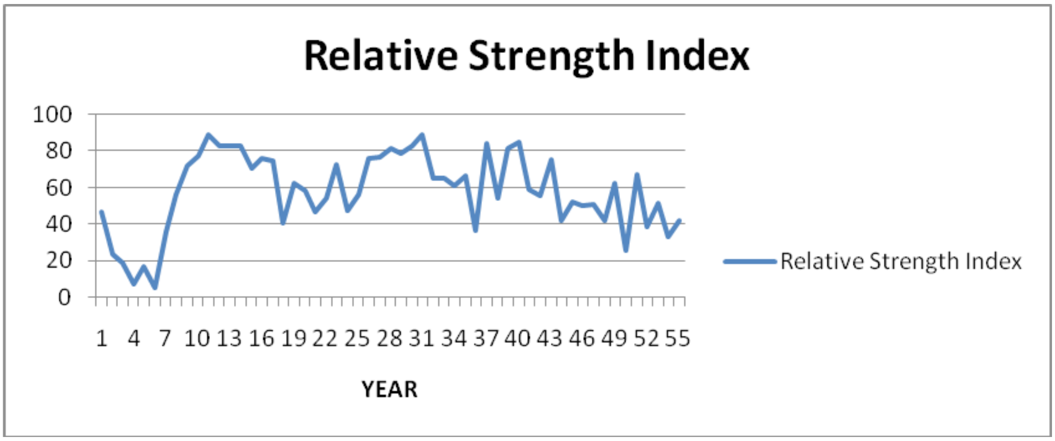
From the above chart it is inferred that the investors can make the decision to buy and sell with the help of prices and relative strength index. The RSI of BSE shows that during the year 2008-09, there is no strength observed in this year since there is no gain. At the end of the year the strength was found to be 48.59. According to broad rule, it was said that when the RSI crosses 30 it is a best time to buy the scrip. The RSI of BSE shows that during the year 2009-10, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip. The RSI of BSE shows that during the year 2010-11, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip and at the year end when the RSI crosses 30 it is a best time to buy the scrip. The RSI of BSE shows that during the year 2011-12, according to broad rule, it was said that when the RSI crosses 30 it is a best time to buy the scrip. The RSI of BSE shows that during the year 2012-13, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip.

Chart No. 11. THE RELATIVE STRENGTH INDEX OF NSE



From the above chart it is inferred that the investors can make the decision to buy and sell with the help of prices and relative strength index. The RSI of NSE shows that during the year 2008-09, According to broad rule, in this year it was said that when the RSI crosses 30 it is a best time to buy the scrip. The RSI of NSE shows that during the year 2009-10, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip. The RSI of NSE shows that during the year 2010-11, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip and at the year end when the RSI crosses 30 it is a best time to buy the scrip. The RSI of NSE shows that during the year 2011-12, according to broad rule, it was said that when the RSI crosses 30 it is a best time to buy the scrip. The RSI of NSE shows that during the year 2012-13, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip.

Chart No. 12 THE RELATIVE STRENGTH INDEX OF MCX



From the above chart it is inferred that the investors can make the decision to buy and sell with the help of prices and relative strength index. The RSI of MCX shows that during the year 2008-09, According to broad rule, in this year it was said that when the RSI crosses 30 it is a best time to buy the scrip. The RSI of MCX shows that during the year 2009-10, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip. The RSI of MCX shows that during the year 2010-11, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip and at the year end when the RSI crosses 30 it is a best time to buy the scrip. The RSI of MCX shows that during the year 2011-12, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip and at the year end when the RSI crosses 30 it is a best time to buy the scrip. The RSI of MCX shows that during the year 2012-13, according to broad rule, it was said that when the RSI crosses 70 it is a best time to sell the scrip.

CONCLUSION

The Major conclusion is that there is a positive and healthy relationship between the Indian stock exchange and the commodity market. The commodity market closely follows the stock market and there exists a strong bond between themselves. Based on findings and suggestions from previous sections, the stake Holders can go through samples of this study and select the market of their preference. As already suggested if there is an upward movement in the commodity market there is an equal amount of rise in the stock market also final conclusion is that both the markets are linked to each other, follow each other closely and relationship is positive in nature.

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