Sustainability of Banking Stocks in Investor's Portfolio through Risk and Return analysis of selected Banking Stocks in NSE

Divya U.*
Dr. Noor Firdoos Jahan**

Abstract

Risk and Return are two faces of the investment coin. The attitude of investors is they wanted to earn maximum return but they are not willing to take any risk. But practically risk and return goes hand in hand. Higher the risk, higher the expected return and vice versa. Risk is inherent in every investment decision and it is more certain in equity shares.Banking sector is the backbone of country's economy. Banking stocks are very commonly seen investment in one's portfolio. This sector has given very good return to the investors in the past. But the recent financial crisis, has proved, that the Banking stocks tend to be more volatile than other sector stocks. With this background we have undertaken a study on "Sustainability of Banking Stocks in Investor's Portfolio through Risk and Return analysis of selected Banking Stocks in NSE" The study is conducted by taking a sample of five banking stocks listed in Bank nifty namely SBI, PNB, ICICI, AXIS and HDFC. The Average Return and Beta were computed for these stocks for a period of 5years i.e.2012-13 and 2016-17.The main findings of our study was the selected banking stocks have less market sensitivity and market risk but these shares have failed to enhance value for their shareholders. This result really questions the appropriateness and sustainability of banking stocks in investor's portfolio.

Key words *– Return, Risk, Beta, Standard deviation, Bank, Stock*

Introduction

Investment is the commitment of current money and other resources to get future returns. Investment involves the sacrifice of current consumption in expectation of future benefits. In investment the commitment of funds takes place at present which is certain but the returns we receive in future which is uncertain. This feature of investment relates with Risk. The Risk is nothing but variability in returns. The Risk and return are two faces of the investment. Investor's main

*** Divya U.,** Assistant Professor, Adarsh Institute of Management & Information technology, Bengaluru, Email: divya.u12345@gmail.com

**** Dr. Noor Firdoos Jahan,** Professor, RV Institute of Management, Bengaluru, Email: noor.firdoos@gmail.com

objectives in Investment are to Maximize Return and minimize Risk. But Risk and Return goes hand in hand. Higher the risk higher the expected return and vice versa. But investors always wanted to earn highest return but they are not willing to take any risk. Return is the reward for undertaking an investment. The return of an investment consists of two components they are current return and capital return. The formula used for calculating daily returns is

$$\text{Daily Returns} = \frac{Pt - Pt\text{-}1}{Pt\text{-}1} * 100$$

Holding period return=

$$\text{Dividends} + \frac{Pt - Pt\text{-}1}{Pt\text{-}1} * 100$$

Average daily returns = sum of daily returns/ number of observations

Annualized returns = average daily return * number of trading days

Pt = current price, selling price

Pt-1 = previous price, purchase price

Risk is inherent in every investment alternative and it is very much certain in an investment like Equity share. Equity is one of the High risk and high return category of investment. In equity shares the dividend is not fixed and it depends on the profit of the company and the payment of dividend is also not compulsory. So the current yield on equity shares is not fixed. The capital return on equity depends on the state of stock market whether it is in bullish or bearish condition. All these feature of equity shares makes it a high risk asset for investment. The risk of equity shares can be classified into Market risk(systematic risk) and company risk(unsystematic risk).The market risk of a security is that portion of total variability in return caused by economic, political and social factors such as interest rates, inflation, business cycle etc. These factors affect all the stocks in the stock market to a more or less extent and this risk is non diversifiable in nature. The investors have to bear this market risk. The market risk of an equity share is measured by computing its Beta. Beta is a measure of the volatility or systematic risk of a security or a portfolio in comparison to the market as a whole. Beta measures the sensitivity of stock return to market index movement. Higher the beta value higher the market risk of security and vice versa. Usually the stocks with beta less than one are considered less risky securities and beta more than one considered as high risky securities. If beta of a security is equal to one that security moves in tandem with market sensex. Beta is used in the capital asset pricing model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns.

Beta= covariance ($R_{a,}R_m$) / Variance(R_m)

The company risk or unsystematic risk is the risk arising due to company specific factors such as introduction of new product, high profit, labor strike etc.

These factors affect only that specific company stocks and not overall stock market as such. The company risk is diversifiable in nature. Through a proper diversification of securities by investing in different sectors and by constructing an optimum Portfolio investors are able to diversify the company risk of their equity shares. The basic idea behind portfolio construction is "Do not put all eggs in one basket". The investors instead of investing their all funds in one company or one sector it is better to diversify their funds in different sectors like Banking, Pharmacy, FMCG, Steel, IT, Infrastructure, Hospitality, Retail etc.

The commonly seen stocks in any investors portfolio is Banking stocks because Banking sector is the backbone of Indian economy and banking sector stocks are commonly traded stocks NSE and BSE. With the potential to become the 5th largest banking industry in the world by 2020 and 3rd largest by 2025 according to KPMG-CII report, India's banking and financial sector is growing speedily. The Indian Banking industry is presently worth Rs.81 trillion (US $1.31 trillion) and banks are now employing the modern technologies like internet and mobile devices to carry out dealings and interconnect with the masses. Presently Indian banking sector comprises of 26 Public sector banks, 20 Private sector banks and 43 Foreign banks along with 61 Regional rural banks (RRB's) and more than 90,000 credit co-operatives. This sector has given very good return to the investors in India in past. But the recent financial crisis, has proved, that the Banking stocks tend to be more volatile than other sector stocks. With this background we have undertaken a study on sustainability of banking stocks in investor's portfolio through Risk and Return analysis of selected banking stocks from NSE.

Objectives of the study

1. To gain knowledge about Risk and Return analysis of Equity shares.
2. To compute the Average return and Market risk (Beta) of selected banking stocks.
3. To evaluate the Sustainability of banking stocks in investor's portfolio through its risk and return analysis.

Research methodology

The descriptive method of research was adopted for the study. A sample of five banking stocks listed in Bank Nifty were purposefully selected based on the highest revenues generated by those banks in the past five years. The selected banking stocks include State Bank of India (SBI), Punjab National Bank (PNB), Industrial Credit and Investment Corporation of India (ICICI), Housing Development Financial Corporation (HDFC) and AXIS bank.The study was mainly based on secondary sources of information.

The analysis was based on unit price and bench mark information collected from NSE web site. The return and market risk of the banking stocks were analyzed by computing average return and beta for five year period by considering the stock prices and bank's nifty movements for a period between 2012-13 and 2016-17 (1st April to 31st March).

Review of Literature

Banz (1981) examines the empirical relationship between the return and the total market value of NYSE common stocks. It is found that smaller firms have had higher risk adjusted returns, on average, than larger firms. This 'size effect' has been in existence for at least forty years and is evidence that the capital asset pricing model is misspecified.

Stephen & Penman(1989) performed a financial statement analysis that combines a large set of financial statement items into one summary measure which indicates the direction of one-year-ahead earnings changes. Positions are taken in stocks on the basis of this measure during the period 1973–1983, which involve canceling long and short positions with zero net investment.

Jagadeesh & Titman(1993) studied strategies forbuying stocks that have performed well in the past and selling stocks that have performed poorly in the past. They found that the profitability of these strategies are not due to their systematic risk or to delayed stock price reactions to common factors

Mukherjee & Naka (1995) investigated the relationship between Tokyo stock prices and six macro economic variables using a vector error correlation model (VECM). Their study showed that the relationship between Tokoyo stock prices, the exchange rate, money supply and industrial production is positive. Whereas the relationship between Tokyo stock prices and inflation and interest rate mixed.

Brad, John & Lyon (1997) analyzed the empirical power and specification of test statistics in event studies designed to detect long-run (one- to five-year) abnormal stock returns. They documented that test statistics based on abnormal returns calculated using a reference portfolio, such as a market index, are misspecified (empirical rejection rates exceed theoretical rejection rates) and identify three reasons for this misspecification.

Green wood (2005) studied a cross sectional analysis of the excess co movement of stock returns using Nikkei 225 index Japan. He found that a strong positive correlation between overweighting and the co movement of a stock with other stocks in the index, and a negative relationship between index overweighting and co movement with stocks outside the index. He concluded that overweighed stocks have high betas.

Baele, Bekaert & Inghelbrecht (2007) studied the economic sources of stock-

bond return co movement and its time working paper Variation using a dynamic factor model. They identified the economic factors employing structural and non-structural vector autoregressive models for economic state variables such as interest rates, (expected) inflation, output growth and dividend payouts.

Dutt & Mihov (2008) anaysed the stock market co- movement and industrial structure, they studied monthly stock market indices for 58 countries to construct pairwise correlations of returns and explain these in the industrial structure across countries. They found that countries with similar industries have stock markets that exhibit high correlation of returns.

Meric ,Patil &Meric(2011) studied the co movement of the Indian stock market with other stock markets and its implications for portfolio diversification with respect to the effects of 2008 global financial crisis.. They found that there is considerable time varying volatility in the correlation of the Indian stock market with the other stock markets. The trend analysis results showed the correlation between Indian stock market and other national markets increased substantially and the benefit of global portfolio diversification decreased considerably post crisis period.

Zheng (2014) investigated linkage between aggregate stock market investor sentiment and commodity future returns and found that there is negative relationship between investor sentiment and commodity future returns. The author concluded that commodity futures are excellent investment vehicle during stock market pessimism.

Giradri(2015) studied about correlation of agricultural prices with stock market dynamics and found that the correlation between agricultural prices and stock market returns tends to increase during periods of financial turmoil. The impact of financial turmoil on correlation gets stronger as the share of financial investors in agricultural derivatives market raises.

DATA ANALYSIS

I. Returns of Banking Stocks

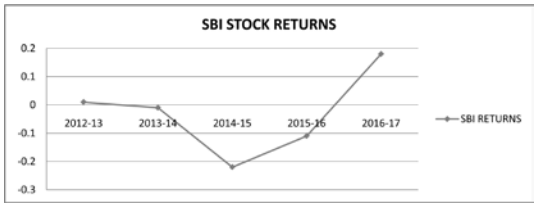
Table No- 1 Average Return of State Bank of India (SBI) stocks

YEARS	AVERAGE RETURNS
2012-13	0.01
2013-14	-0.01
2014-15	-0.22
2015-16	-0.11
2016-17	0.18
TOTAL	-0.15

Source:Author

Total average returns of 5 years =
-0.15/5 x 100 = -3%

Graph No:1



Analysis

The maximum return of SBI Stock was 18% in the year 2016-17 and minimum return was in 2014-15 .i.e.,-22%.The average return for 5 years of State Bank of India (SBI) is -3% which is a negative return. SBI stocks did not gave good returns to investors.

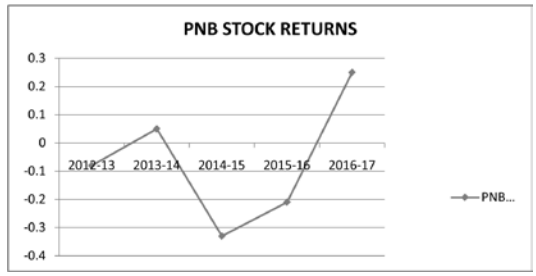
Table No 2: Returns of Punjab National Bank (PNB) Stocks

YEARS	AVERAGE RETURNS
2012-13	-0.08
2013-14	0.05
2014-15	-0.33
2015-16	-0.21
2016-17	0.25
TOTAL	-0.32

Source: Author

Total average returns of 5 years =
-0.32/5 x 100 = -6.4%

Graph No :2



Analysis

The highest average return of Punjab National bank was in the year 2016-17 .i.e.,25% and the lowest return was in 2014-15 .i.e., -33%. The average returns of 5 years of Punjab National Bank (PNB) is -6.4% which is again a negative average return for the shareholders.

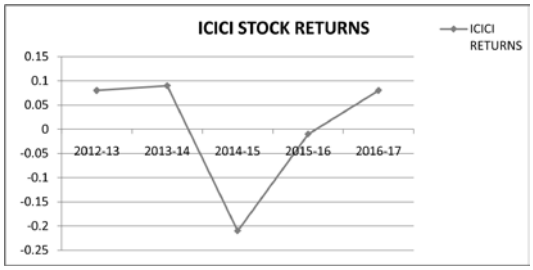
Table No 3: Returns of Industrial Credit and Investment Corporation of India (ICICI)

YEARS	AVERAGE RETURNS
2012-13	0.08
2013-14	0.09
2014-15	-0.21
2015-16	-0.01
2016-17	0.08
TOTAL	0.07

Source: Author

Total average returns of 5 years
= 0.07/5 x 100 = 1.4%

Graph No: 3



Analysis

The average returns of 5 years of Industrial Credit and Investment Corporation of India (ICICI)are 1.4%. This banking share has given a slight positive return to its holders. Where in the maximum return on this stock was in the year 2013-14 .i.e. 9% and minimum return was -21% in 2014-15.

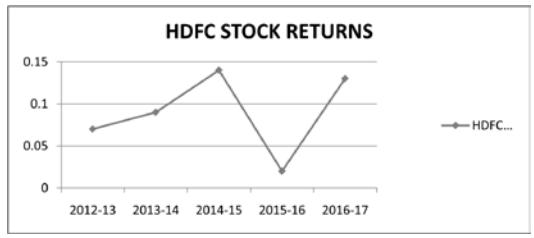
Table No: 4 Returns of Housing development finance corporation (HDFC) stock

YEARS	AVERAGE RETURNS
2012-13	0.07
2013-14	0.09
2014-15	0.14
2015-16	0.02
2016-17	0.13
TOTAL	0.45

Source: Author

Total average returns of 5 years =
0.45/5 x 100 = 9%

Graph No:4



Analysis

The average returns for 5 years of HDFC stock is 9%. The HDFC shares have given average return to its shareholders which is slightly above Bank interest rates. The maximum returnof HDFC was in the year 2014-15 .i.e., 14% and minimum return was in 2015-16 .i.e., 2%.

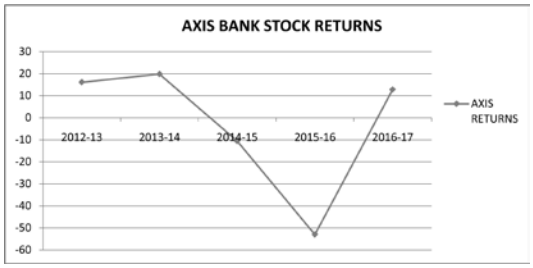
Table No: 5 Average Returns of Axis Bank Stock

YEARS	AVERAGE RETURNS
2012-13	0.06
2013-14	0.08
2014-15	-0.04
2015-16	-0.08
2016-17	0.05
TOTAL	0.07

Source: Author

Total average returns of 5 years =
0.07/5 x 100 = 1.4%

Graph No: 5



Analysis

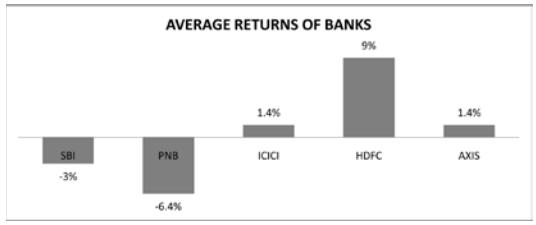
The average returns of 5 years of Axis stocksis just 1.4%.Where in the maximum return was in the year 2013-14 .i.e 8% and minimum return was negative in 2015-16 .i.e.,-8%.

Table No 6: Comparison of Average Returns of Banking stocks.

BANKS	AVERAGE RETURN
SBI	-3%
PNB	-6.4%
ICICI	4%
HDFC	9%
AXIS	1.4%

Source: Author

Graph No: 6



Analysis

If we compare the average returns of banks ICICI and AXIS bank have given same returns .i.e., 1.4%. Whereas the HDFC bank has given highest return of 9% compared to other banks. Both SBI and PNB banks average returns are negative which shows that these shares have not created any value for shareholders.

II. Market Risk:

Beta of Banking Stocks.

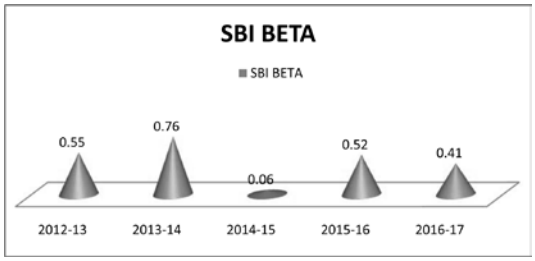
Table No: 7 Beta of State Bank of India Stock

YEARS	BETA
2012-13	0.55
2013-14	0.76
2014-15	0.06
2015-16	0.52
2016-17	0.41
TOTAL	2.30

Source: Author

Average Beta of 5 years = 2.30/5 = 0.46

Graph No:7



Analysis:

The average beta of SBI shares are 0.46 which means if the Nifty index changes by 10% the SBI share changes by 4.6%. the highest beta SBI shares are less sensitive towards Market index movement and it is having less market risk.

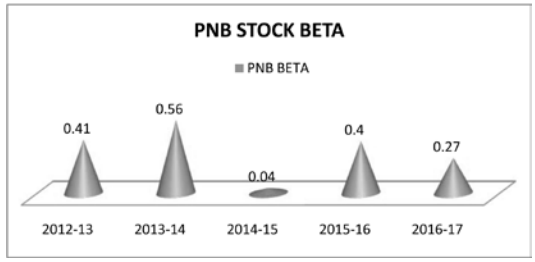
Table No 8: Beta of Punjab National Bank (PNB) stock.

YEARS	BETA
2012-13	0.41
2013-14	0.56
2014-15	0.04
2015-16	0.40
2016-17	0.27
TOTAL	1.28

Source: Author

Total Average Beta of 5 years = 1.28/5 = 0.256

Graph No: 8



Analysis:

The average beta of PNB bank is 0.256**.** This share is having less market risk. The highest beta of this stock was 0.56 in the year 2013-14 which means for 1% change in NIFTY the PNB stock changed 0.56%. The lowest beta was 0.04 in the year 2014-15 which is close to zero.

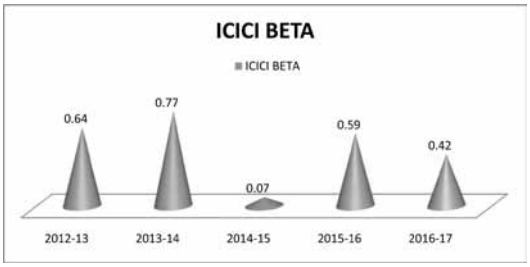
Table No 9: Beta of Industrial Credit and Investment Corporation of India (ICICI) stocks

YEARS	BETA
2012-13	0.64
2013-14	0.77
2014-15	0.07
2015-16	0.59
2016-17	0.42
TOTAL	2.49

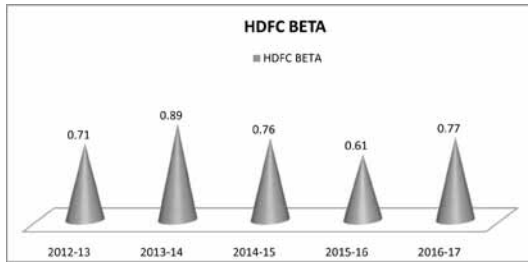
Source: Author

Total Average Beta of 5 years = 2.49/5 = 0.498

Graph No 9:



Graph No 10:



Analysis:

The average beta of ICICI stocks is 0.498. . Beta value 0.498 means for 10% increase in market index the ICICI stock increased by 4.98% and vice versa. Even this banking stock is having less market risk. The highest beta value was 0.77 and lowest beta was 0.07.

Table No 10: Beta of Housing Development Finance Corporation (HDFC) stocks

YEARS	BETA
2012-13	0.71
2013-14	0.89
2014-15	0.76
2015-16	0.61
2016-17	0.77
TOTAL	**3.74**

Source:Author

Total Average Beta of 5 years = 3.74/5 = 0.748

Analysis:

The average beta of HDFC is 0.748 which means for 10% increase in NIFTY the ICICI stocks increased by 7.48% and vice versa. The stock showed highest sensitivity towards index in the year 2013-14 where beta was 0.89 and lowest sensitivity was shown in the year 2015-16 where the beta was 0.61.

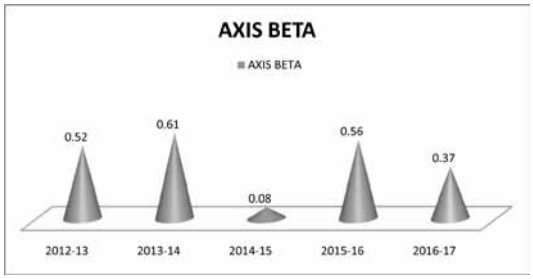
Table No 11: Beta of Axis Bank Stock

YEARS	BETA
2012-13	0.52
2013-14	0.61
2014-15	0.08
2015-16	0.56
2016-17	0.37
TOTAL	2.14

Source: Author

Total Average Beta of 5 years = 2.14/5 = 0.428

Graph No: 11



Analysis:

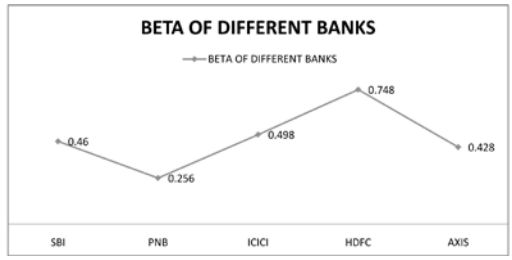
The average beta of Axis bank stock was 0.428, the highest beta was 0.61 and the lowest beta is 0.08 which indicates the Axis banks systematic risk is less and it is less sensitive towards market index movement.

Table No 12: Average Beta's of different Banking stocks

COMPANIES	AVERAGE BETA
SBI	0.46
PNB	0.256
ICICI	0.498
HDFC	0.748
AXIS	0.428

Source: Author

Graph No: 12



Analysis:

If we compare the betas among different Banking stocks, the Beta of HDFC bank ishigh compared to other banks and beta of PNB stocks is very less compared to other banks. But on an average all the banking stocks selected for in this study are having a beta value of less than 1 which indicates all these banking stocks are Risk defensive stocks and subjected to less Market risk .

Scope and conclusion

Banking sector is the backbone of country's economy. Banking stocks are very commonly seen investor's portfolio. This sector has given very good return to the investors in the past. But the recent financial crisis, has proved, that the Banking stocks tend to be more volatile than other sector stocks. With this background we have undertaken sustainability of banking stocks in investor's portfolio through risk and return analysis. Among these stocks highest average return of 25% was given by PNB stock in the year 2016-17. The highest average return for five years

was given by HDFC stock which is 9%. Other banking stocks like ICICI and Axis have given very less but positive average return. But the Public sector Banks like SBI and PNB stocks average return for five years is negative. These Banking stocks have not given good returns to investors to commensurate with the risk they have undertaken. The Return of ICICI and Axis stocks are almost close to Risk free rate and banks like SBI and PNB have not created any value for their shareholders.

If we consider the Market risk, the beta's of all these banking stocks are less than one which indicates these stocks have less Market risk and they are less sensitive towards NIFTY movements. Thus we can conclude by saying these banking stocks belong to low risk category but they failed to give adequate return to their shareholders. If this trend is continued it creates doubt on the sustainability of banking stocks in Investors portfolio. The banking stocks may become uncommon in investor's portfolio.

This study covers only the average return and Market risk of selected five banking stocks. Still there is a scope for further research in this area as we have not calculated the total risk involved in these shares through variance and standard deviation. An in depth study can be undertaken by taking a large sample of banking stocks and through their risk and return analysis for a longer period of time.

Bibliography

1) Brad M.BarberJohn D.Lyon(1997), "Detecting long-run abnormal stock returns: The empirical power and specification of test statistics", Journal of Financial Economics, Volume 43, Issue 3, March 1997, Pages 341-372.

2) Beyza Mina Ordu, and Ugur Soyta(2016), "The Relationship Between Energy Commodity Prices and Electricity and Market Index Performances: Evidence from an Emerging Market",Emerging Markets Finance & Trade, 52:2149–2164.

3) Cheng F..H.yntond M. Leuthold and Jean E. Cordier, (1985) "The stock market and the commodity future market:Diversification and arbitrage potential"Financial Analyst Journal July-august pp-53-60.

4) Daniele Girardi(2015) "Financialization of food. Modelling the time-varying relation between agricultural prices and stock market dynamics" International Review of Applied economics, Vol. 29, No. 4, 482–505.

5) Dr. Gulsar Meric ,Dr.Niranjan patil & Dr.Ilhan Meric(2011) "co movement of the Indian stock market with other stock markets – implications for portfolio diversification" Indian

Journal of Finance ,volume-5, no.10,October,pp13-20

6) Greet Bekaert & Kuen Inghhelbrecht (2007) "the determinants of stock and bond return co movements" NBB working paper no.119 October 2007 Brussels issn-1375-680x(print) ISSN-1784-2476(Online)

7) Julien Chevalliera, and Florian Ielpob(2013) " Cross-market linkages between commodities, stocks and bonds ",Applied Economics Letters, Vol. 20, No. 10, 1008–1018

8) Narasihan Jegadeesh & Sheridan Titman(1993), "Returns to buying Winners and selling Losers: Implications for Stock market efficiency", Journal Of Finance, Volume 48, Issue 1 March 1993, Pages 65–91

9) Pushan Dutt & Ilian Mihov (2008) "stock market co movement and industrial structure"INSEAD Faculty and Research working paper December 2008.

10) P. Hemavathy & S. Gurusamy(2016) Testing the Causality and Co integration of Gold Price and NSE (S&P CNX NIFTY): Evidence from India , Amity Global Business Review February pp 79-85

11) Rolf .W Banz (1981), "The relationship between return and market value of common stocks", Journal of Financial Economics, volume 9, Issue 1, March , pages 3-18.

12) Robin. M .Green wood (2005)"A cross sectional analysis of the excess co movement of stock returns" Finance research paper no.05-069 of Harvard business school.

13) Rossi.R.P.Gallant, & Tauchen (1992) "stock prices and volume" Review of financial studies vol.5.

14) Robert Johnson and Luc Soenen "Commodity Prices and Stock Market Behavior in South American Countries in the Short Run", Emerging Markets Finance & Trade / July–August 2009, Vol. 45, No. 4, pp. 69–82.

15) Ranajit chakrabarthy,asima sarkar(2010) "Efficiency of the Indian Commodity and Stock Market with Focus on Some Agricultural Product" Paradigm Vol. No. XIV, No.1, January – June

16) Tarun .K Mukhergee , Atsuyuki & Naka(1995) "Dynamic relations between macro Economic variables and the Japanese stock market an application of vector error correlation model".the journal of financial research, XVIII(2) 223,237

17) Yao.Zheng(2014) "The linkage between aggregate stock market

investor sentiment and commodity futures returns" Applied Financial Economics, Vol. 24, No. 23, 1491–1513.

18) Sanjay Sehgal and Asheesh Pandey(2012) "Strategic Allocation, Asset Pricing and Prior Return Patterns: Evidence from Indian Commodity Market", Vision 16(4) 273–28, SAGE Publication

19) Y.V. Reddy , A. Sebastin (2009) "Analysis of Linkage Dynamics between Commodity and Stock Markets in India using entropy theory" Decision, Vol. 36, No.2, August.

20) Prasanna Chandra "Investment analysis and portfolio management" Tata Graw Hill.

21) www.moneycontrol.com

22) www.bseindia.com