Research Paper Management

Bank Nifty Index and Other Sectoral Indices of NSE- A Comparitive Study

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ABSTRACT

Investing in equity market is always a complicated process and it requires some amount of intelligence and information base. Stock Market Indices are acting as barometer to measure the performance of shares from various sectors. Every sectoral indices are showing the behavioural pattern of stocks of the same sector and the behavioural pattern of one sector may likely impact on other sectors too. Normally performance of banking sector stocks will influence the performance of other sectoral stocks. Hence, an attempt is made in this study to know the nature and extent of influence by banking sector with other sectors during the bull and bear market phase. Pearsonian correlation coefficient technique is applied to find the nature and extent of influence by banking sector with other sectors and it was found that there is a positive correlation between banking stock index and most of the other sectoral stock indices.

KEYWORDS Stock Market Indices, Bull and Bear Market, Correlation coefficient.

INTRODUCTION

Investors not only like return, but also they dislike risk. While investing in capital market, investors are always concerned about the market movements or changes in the value of capital market index.The development of regulated and well structured market with latest technology attracts the institutional investors as well as the HNI and retail investors. Initially, only stock market index was formed to measure the market performance and later on the indices for various sectors were developed to measure the performance of each sector. These indices are providing authentic and comprehensive information to investing community and it gives an idea to take decision regarding their equity investments.During the later part of last decade (2008 to 2010) the impact of global meltdown was very severe and most of the global indices were falling down and Indian equity market also followed the same trend. The effort taken by the monetary authorities of various countries started to yield the fruits on the early part of this decade.Global financial market is recovering in a fast pace after the economic meltdown which has influenced all the business sectors invariably. Most of the global indices are in a healthy trend and a few of them have touched the new life time high. India too is experiencing the same. The Indian stock market index Nifty had touched the new high during Dec 2013. But still, the investing community belongs to HNI and Retail are in a dilemma to make investment in equity market and they do fear that whether their investments will be safe or not. Even though the situation has stabilized well, there is an ambiguity among the investors about the performance of indices. In this background, an attempt is made to study the comparative performance of various sectoral indices of National Stock Exchange.

LITERATURE SURVEY

In a study by Joseph (2003)[1], it has been found that there is no impact on the Forex and interest rate changes on the stock market returns' generations. However the variances in the sectoral indices were influencing in the future performance of themselves.

DemirerandLien(2005)[2]works on the understanding of the correlation between the different sectoral related with market movement in either direction. The study finds that the sectoral correlation is higher in the upside movement of market. Only the finance sector had the strong correlation in the downside market in the context of China market. In a study by Wang, Kutan&Yang (2005)[3], it is found that there was constant reflection on the prices of one sector depending on the information of other sector. Industrial sector is found to be the most integrated with the impact on each other due to the information flow and the finance sector could stay alone or indifferent to the sectors information. Kallberg&Pasquariello (2008)[4] have done analysis on the 81 sectoral indices of the US market and had found that there has been large correlation between the excess movement in the sectoral indices and there is significance between each other in the movement in a single direction. In a study titled "Long run and Short run relationship between the main stock indexes: Evidence from Athens Stock Exchange" by Patra&Poshakwale(2008)[5], it was found that there has been lower relation in the sectoral returns in the long run. However there was significant impact of the banking sector on the other sector indices return and variance. This research paper suggested that the changes and information of the banking sector could be used in order to predict the returns of the other sectoral indices in short term. A study by Madhavi.M.&Radhika Ravi (2010)[6]to understand the performance of sectoral indices with performance of Sensex, and it was found that there is a high range of positive correlation between the Sensex and the six selected sectoral indices of BSE. An attempt was made by Piyush Kumar Singh &Venkata Vijay Kumar (2011)[7] to understand the movement of sectoral returns and their contributions towards the Sensex returns. The study could find that the Sensex returns could be explained with the help of selected sectoral index returns only and there is significant relationship between the different sectors' contribution to the final Sensex returns.

NEED FOR THE STUDY

Most of the studies in the above literature have revealed the information that the stocks of banking sector is playing a dominant role in the market movement and influence the performance of stocks of other sectors too. But no study has been conducted so far by considering the index of banking sector as a base to compare the nature and extent of relationship with the index of other sectors. Hence the researcher has taken this topic to know the nature and extent of influence by the banking sector index of NSE with the other sectoral indices of NSE.

RESEARCH OBJECTIVE

The objective of this study is to find the nature and extent of relationship between the performance of Bank Nifty Index

and performance of other sectoral indices of National Stock Exchange.

HYPOTHESIS OF THE STUDY

The null hypotheses (H_0) of this study are that (i) there is no positive relationship between the performancesof Bank Nifty Index with other sectoral indices of NSE during the bear phase of the market and (ii) there is no positive relationship between the performances of Bank Nifty Index with other sectoral indices of NSE during the bull phase of market.

RESEARCH METHODOLOGY

Sources of Data: Secondary data is collected from the various websites like www.nseindia.com, www.thehindubusinessline.com, www.capitaline.com, and so on.

Period of Study: The data relating to the Bank Nifty Index movements and the other ten sectoral indices were collected from 8th Jan 2008 to 27thOct 2008 (during the period when Nifty started to reverse from its peak 6288 to its low 2524 on closing basis) for the analysis of bear phase market movement and from 28st Oct 2008 to 9thDec 2013(when the Nifty started to gain from the low to its new high 6364 on closing basis) for the analysis of bull phase market movements.

Statistical Tool: To analyse the performance of the sectoral indices with the bank nifty index, the correlation coefficient technique is employed.

FRAMEWORK OF ANALYSIS

To test the hypothesis of this study, Pearsonian coefficient of correlation technique is used. It is a technique which deals with association or co-variance between two variables and helps to describe the magnitude and the direction of correlation. The procedure followed to calculate the correlation coefficient is as follows.

(i). Found out the average of both the indices (X- the Bank Nifty Index and Y - the Index of any selected sector).
(ii). Found out the deviations of both the indices. (dx and dy).
(iii).Squared the deviations and got the sum of the respective squares of deviation for both the indices. ($\sum dx^2$ and $\sum dy^2$).
(iv). Multiplied the deviations and found the sum.
(v). Substituted the values to find the correlation coefficient (r).

$$r = \frac{\sum dx.dy}{\sqrt{\sum dx^2 . \sum dy^2}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

(vi). Rule: Accept the null hypothesis (Ho) if the calculated value r is less than zero i.e negative ($r < 0$) and reject the null hypothesis if the calculated value r is greater than zero i.e positive.($r > 0$).

RELATIONSHIP BETWEEN BANK NIFTY AND OTHER SECTORAL INDICES DURING BEAR PHASE MARKET MOVEMENTS

To analyse the indices movements during bear phase market, data has been collected from 8th Jan 2008 to 27thOct 2008, the period when NiftyIndex has started to decline from its earlier peak 6288 to its low 2524. To achieve more accuracy, all observations during the above mentioned period (the daily closing price of all 199 trading days) has been taken for consideration to calculate the coefficient of correlation.

TABLE 1: Relationship between Bank Nifty and other Sectoral Indices during Bear phase Market movements.

Sectoral Indices	X-Average	Y-Average	Deviation square of X	Deviation square of Y	dx.dy	Correlation co-efficient
AUTO	6879.78	1764.22	4.27E+08	6.11E+07	1.1E+07	+0.904
ENERGY	6879.78	8542.79	4.27E+08	2.72E+08	2.39E+08	+0.700
FINANCE	6879.78	2953.11	4.27E+08	8E+07	1.84E+08	+0.995
FMCG	6879.78	5643.44	4.27E+08	3.5E+07	8.2E+07	+0.665
IT	6879.78	3874.53	4.27E+08	4.6E+07	5.8E+07	+0.414
MEDIA	6879.78	1728.81	4.27E+08	3E+07	1.04E+08	+0.918
METAL	6879.78	3574.41	4.27E+08	1.22E+08	1.81E+08	+0.791
PHARMA	6879.78	3058.38	4.27E+08	1.4E+07	-2.1E+07	-0.276
PSU BANK	6879.78	2314.69	4.27E+08	4.1E+07	1.3E+08	+0.982
REALTY	6879.78	923.76	4.27E+08	2.7E+07	1.02E+08	+0.951

***X – Bank Nifty Index *Y – Concerned Index of NSE**

Table 1 clearly indicates that the calculated value of correlation coefficient for all the indices are positive during the bear phase market movement except the Pharma sector and it is the only sectoral index having inverse relationship with the movements of Bank Nifty Index (calculated value r is - 0.276). Hence, the null hypothesis (H_0) is rejected and it is proved that there is positive relationship between the movements of Bank Nifty Index with almost all other indices of NSE.

RELATIONSHIP BETWEEN BANK NIFTY AND OTHER SECTORAL INDICES DURING BULL PHASE MARKET MOVEMENTS

In order to find the relationship between the Bank Nifty Index with other sectoral indices in bull market phase, data has been collected from 28th Oct 2008 to 9th Dec 2013. During this period, the index movement of Nifty has started to recover from the low to its new peak6364. To obtain more accuracy in the data analysis, all the 1270 observations (closing price of every trading day) in the study period have been taken and calculated the Pearsonian coefficient of correlation.

TABLE 2: Relationship between Bank Nifty and other Sectoral Indices during Bull phase Market movements

Sectoral Indices	X-Average	Y-Average	Deviation square of X	Deviation square of Y	dx.dy	Correlation co-efficient
AUTO	9701.12	3521.26	6.295E+09	1.386E+09	2.716E+09	+0.919
ENERGY	9701.12	8166.04	6.295E+09	1.369E+09	1.609E+09	+0.548
FINANCE	9701.12	3947.82	6.295E+09	1.056E+09	2.561E+09	+0.994
FMCG	9701.12	10390.22	6.295E+09	1.868E+10	7.518E+09	+0.693
IT	9701.12	5839.74	6.295E+09	2.987E+09	3.661E+09	+0.844
MEDIA	9701.12	1429.14	6.295E+09	1.17E+08	7.01E+08	+0.817
METAL	9701.12	3167.29	6.295E+09	1.258E+09	1.08E+09	+0.384
PHARMA	9701.12	4634.64	6.295E+09	2.486E+09	3.111E+09	+0.787
PSU BANK	9701.12	3196.21	6.295E+09	8.25E+08	1.619E+09	+0.710
REALTY	9701.12	313.69	6.295E+09	1.8E+07	(-)1.4E+07	(-)0.042

***X – Bank Nifty Index *Y – Concerned Index of NSE**

By observing the Table 2 shown above, one can note that every one of the sectoral index is having positive correlation

with the bank Nifty Index except CNX-Realty (the calculated value r is-0.042) during the bull market phase. Hence, the null hypothesis (H_0) is rejected and this confirms that the movement of Bank Nifty Index influences the behaviour of almost all the sectoral indices and an investor may follow this leading index as base for making investments in other various sectors.

CONCLUSION

From the results and findings of this study, one can understand that the Bank Nifty Index is positively influencing almost all the sectoral indices of NSE in both bull and bear phase market movements. Hence before making any investments in equity market, the investing community must look into the behavioural pattern of banking sector stocks as they influence the behaviour of other sector stocks too and do investments accordingly.

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