

A study on Bank and IT nifty influence on Nifty 50

Dr. V. Prabakaran
Department of Commerce
SRM Institute of Science and
Technology Vadapalani City Campus,
Chennai
Mobile: 9790428557, Email: pkaran174@gmail.com

Dr. S. Vijay
Department of Commerce
SRM Institute of Science and
Technology Vadapalani City Campus,
Chennai
Mobile: 9698811498, Email: sakthi.s.vijay@gmail.com

Abstract

NIFTY 50 is one of the benchmark indices which is been used in India. The index is built upon by the companies which are represented from various sectors. Each sector is given separate weightage depending upon the representations from each sector. This paper focused on to identify Pairwise Granger Causality between NIFTY 50 Index, NIFTY Bank Index and NIFTY IT Index. The researcher also focused on to identify the influence of Bank NIFTY and IT NIFTY and NIFTY 50 Index. The research was carried out with a total of 532 observations (closing value of each index) of spanned across January 2018 - February 2020. The study revealed that Bank NIFTY Granger Cause IT NIFTY and not vice-versa. NIFTY 50 Index is highly influenced by Bank NIFTY IT NIFTY.

Keywords: Bank NIFTY, IT NIFTY, NSE

INTRODUCTION

Capital market is hub where securities are traded and it is the real time economic indicator which reflects the current scenario of the economy. It also acts as one of the best investment avenues while looking towards the high return. All over the world people used to invest in the securities and earn, nowadays it is been the trend to invest in the Stock market Index, which is comprises of particular sector or different sector stocks. When it comes to India, BSE and NSE are the two major players in capital market, both the trade centres are located in Mumbai and it is regulated by SEBI. National Stock Exchange (NSE) has its own border Index namely Nifty50. There are many studies related to cross border impact and sectoral impact on Nifty.

As like broad index Nifty 50, there are sectoral index which namely Auto Index, Bank Index, Energy Index, FMCG Index, IT Index, Metal Index, Pharma Index and others.

REVIEW OF LITERATURE

Vinod Kumar & Kamaljit Singh (2020) analyzed the linkage between Sectoral Indices and NIFTY 50. The study revealed that financial service sector had performed better and followed by the banking sector while Pharma and Realty sectors under-performed in comparison to other indices. The NIFTY 50 was less volatile in comparison to other sectorial indices however Realty sector indices show the highest volatility during the study period (2014-2018).

Aravind (2017) analyzed co-movements of twelve NSE sectoral indices and NIFTY on a daily basis. The study revealed that private sector bank and NIFTY had strong bidirectional linkage but IT and FMCG had a significant unidirectional linkage with NIFTY.

Anbukarasi and Nithya (2014) analyzed the relation between stock indices and the NIFTY from 2013 to 2014. There was significant correlation of all selected indices except Metal, Pharma, Bank and Realty indices. Pharma and Bank indices have strong impact on NIFTY movements.

Rajamohan and Muthukamu (2014) made comparative study between bank Index and other sectoral indices. Bank index positively influenced almost all other sectoral indices. Investors must check the patterns in banking sector as it could influence the behaviour of other sector stocks.

Nagendra Marisetty & Haritha (2014) correlated NIFTY monthly average returns with sectorial indexes' monthly average returns. From the study, it was concluded that Nifty influences sectoral indices performance, and FMCG and Pharma indexes are less influenced by other sectoral indexes.

OBJECTIVE OF THE STUDY

- To find the causal relationship between the Nifty 50 Index, Nifty Bank Index and Nifty IT Index.
- To examine the impact of Nifty Bank Index and Nifty IT Index on Nifty 50 Index.

METHODOLOGY OF THE STUDY

Research is empirical in nature, the daily closing price data of Nifty 50 Index, Nifty Bank Index and Nifty IT Index are sourced from NSE (www.nseindia.com). The time period of the study is from 1st January 2018 to 27th February 2020 and total observation for the study is 532. In order to execute the objectives, the Pairwise Granger Causality Test and Multiple regression analysis were employed in this study after calculating the return.

$$\text{Multiple Regression equation} = Y = \alpha + \beta_1 X + \beta_2 Y + \beta_3 Z + U$$

Where

Y = Dependent variable and Nifty 50 Index (RNIFC)

α = Alpha or Constant or Intercept

$\beta_1 X$ = Independent variable and Nifty Bank Index (RBANC)

$\beta_2 Y$ = Independent variable and Nifty IT Index (RITC)

$\beta_3 Z$ = Independent variable one day lag of Nifty 50 Index (RNIFC).

U = Residual or error

The return figure for the stocks were calculated as

$$R = (P_0 - P_y) / P_y$$

Where

- R = Return
- P_0 is the daily closing price of present day

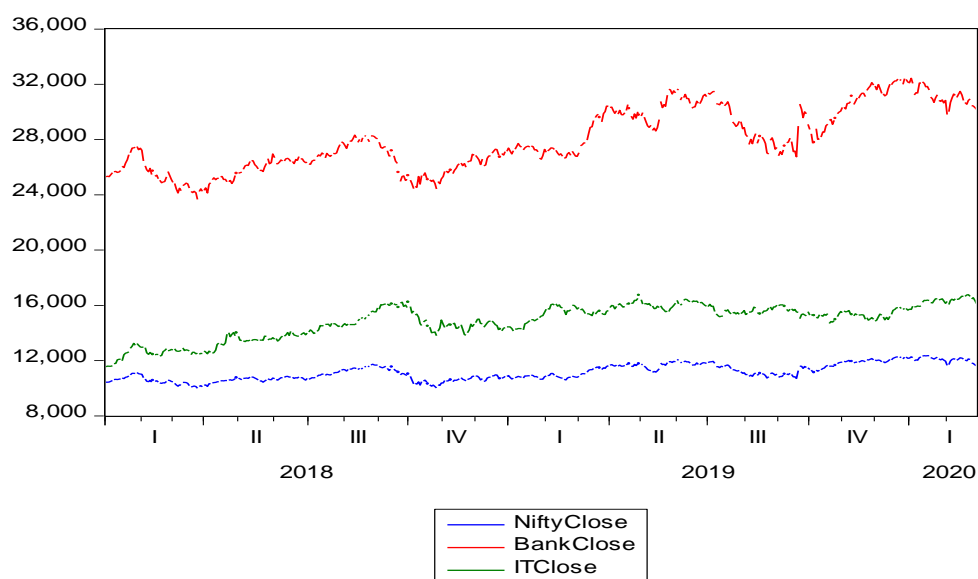
- P_y is the daily closing price of previous day. Similar formula was used to calculate the return for the index as well.

LIMITATIONS OF THE STUDY

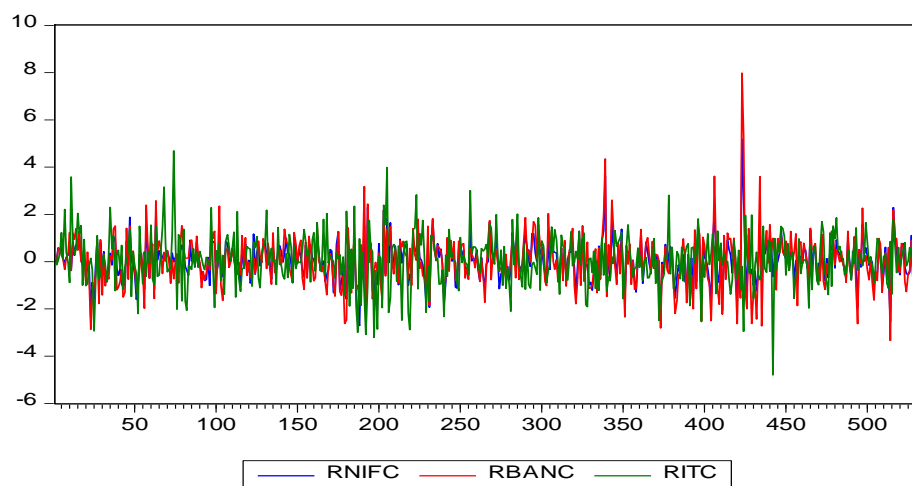
The observations taken for the study many not standardize because of the dynamics of the market.

DISCUSSION AND RESULTS

FIGURE 1 CLOSING PRICE OF NIFTY 50 INDEX, NIFTY BANK INDEX AND NIFTY IT INDEX - DAILY DATA



The Figure 1 represents the closing price of Nifty 50 Index, Nifty bank Index and Nifty IT index from 1st January 2018 to 27th February 2020. The daily data are shown in the graph to identify the volatility of Indexes. The below figure 2 represents the Return of Nifty 50 (RNIFC), Nifty bank (RBANC) and Nifty IT (RITC) indexes. It also evidence that the selected data sets are having same pattern. So, there is potential of influence or Causality relationship between these data sets vis. RNIFC, RBANC and RITC.

FIGURE 2 RETURN OF NIFTY 50, NIFTY BANK AND NIFTY IT INDEXES - DAILY DATA**Table 1 Descriptive Statistics of Nifty 50 (RNIFC), Nifty bank (RBANC) and Nifty IT (RITC) indexes of Daily Return Series**

	RNIFC	RBANC	RITC
Mean	0.020424	0.033062	0.062453
Median	0.039018	0.040100	0.092094
Maximum	5.182469	7.983901	4.686737
Minimum	-2.704354	-3.339551	-4.794805
Std. Dev.	0.843857	1.112996	1.084404
Skewness	0.389943	0.854037	-0.097211
Kurtosis	6.203124	8.858037	4.746481
Observations	532	532	532

Table 1 shows Descriptive Statistics of Nifty 50 (RNIFC), Nifty bank (RBANC) and Nifty IT (RITC) indexes of Daily Return Series. The mean value of RNIFC, RBANC and RITC are positive (0.020424, 0.033062 and 0.062453) which indicates that the return of RNIFC, RBANC and RITC has increased over a period. There is a gap between the Maximum (5.18246, 7.9839 and 4.6867) and minimum (-2.70,-3.33 and -4.79) in RNIFC, RBANC and RITC, which displays the probability of high volatility of market return. The standard

deviation of the RNIFC, RBANC and RITC (0.843, 1.116 and 1.08) shows there is a high risk and high return possible. The RNIFC and RBANC is positively skewed (0.38 and 0.85), implies probability of earnings are little higher than the mean. The RITC is negatively skewed (-0.09721), implies probability of earning may be less than the mean. Kurtosis (6.20, 8.85 and 4.74) of the RNIFC, RBANC and RITC are greater than three ($K > 3$), so the three data series has leptokurtic distribution it also implies that these series are not normally distributed.

From the Table 2, Pairwise Granger Causality Tests between RNIFC, RBANC and RITC. The Null-hypothesis of Granger Causality is RNIFC does not Granger Cause RBANC. It is evident that, there is presence of significant unidirectional causality between RBANC and RITC @ 10% level of significance. Which is RBANC Granger Cause RITC and RITC does not Granger Cause RBANC, So Null hypothesis can't be rejected. In other cases, there is no significant causal relationship between RNIFC, RBANC and RITC.

Table 2 Pairwise Granger Causality Tests for RNIFC, RBANC and RITC

Direction of Causality	F-Stat.	Decision	Outcome
RBANC > RNIFC	0.35	Null Hypotheses accepted	RBANC does not Granger Cause RNIFC
RNIFC > RBANC	0.28	accepted	RNIFC does not Granger Cause RBANC
RITC > RNIFC	0.45		RITC does not Granger Cause RNIFC
RNIFC > RITC	1.88	Null Hypotheses accepted	RNIFC does not Granger Cause RITC
RITC > RBANC	0.50	Null Hypotheses accepted	RITC does not Granger Cause RBANC
RBANC > RITC	2.48*	Null Hypothesis is rejected @ 10 % level of significance	RBANC Granger Cause RITC
Observation	530	Lags	2

Source: Computed Output from EViews.

Note: ***, ** & * denotes significance at 1%, 5% & 10% level of significance respectively. Nifty 50 index (RNIFC), Nifty bank index (RBANC) and Nifty IT index (RITC)

TABLE 3 REGRESSION ANALYSIS OF RNIFC, RBANC AND RITC

Variable	Coefficient	Std. Error	t-Statistic
Constant	-0.015	0.014	-1.016
RBANC	0.652***	0.013	50.745
RITC	0.208***	0.013	15.795
RNIFC (-1)	0.021	0.017	1.240
R-squared	0.850	Akaike info criterion	0.617
Adjusted R-squared	0.849	Schwarz criterion	0.650
S.E. of regression	0.328	Hannan-Quinn criter.	0.630
Log likelihood	-159.937	Durbin-Watson stat	2.000
F-statistic	994***	Observations	532

Source: Computed Output from EViews.

Note: ***, ** & * denotes significance at 1%, 5% & 10% level of significance respectively. Nifty 50 index (RNIFC), Nifty bank index (RBANC) and Nifty IT index (RITC)

The table 3 shows the multiple regression equation ($Y = \alpha + \beta_1 X + \beta_2 Y + \beta_3 Z + U$), Y, denotes Dependent variable (RNIFC) and $\beta_1 X$, $\beta_2 Y$ and $\beta_3 Z$, denotes Independent variable (RBANC, RITC and One day lag of RNIFC. The result of this equation is RNIFC is highly influenced by the RBANC and RITC with the 1% level of Significance and lagged RNIFC (-1) do not Significantly influence the RNIFC.

REFERENCES

- Anbukarasi & Nithya. (2013). Return and Volatility Analysis of the Indian Sectoral Indices- with Special Reference to National Stock Exchange. *EPRA International Journal of Economic and Business Review*, 2(8)
- Aravind, M. (2017). The Dynamic Linkage among Sectoral Indices: Evidence from Indian Stock Market, *Rajagiri Management Journal*, 11(2), 3-20.
- Kumar Vinod & Singh Kamaljit. (2020). Dynamic linkage between nifty-fifty and sectorial indices of national stock exchange, *American Journal of Economics and Business Management*, 3(2), 17-27.
- Marisetty Nagendra & Haritha (2014). NSE NIFTY and its correlation with sectorial indexes International. *Journal of Conceptions on Management and Social Sciences*, 2(1).
- Rajamohan & Muthukamu. (2014). Bank Nifty Index and Other Sectoral Indices of NSE-A Comparative Study. *PARIPEX - Indian Journal of Research*, 3(4).