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Full Length Research Paper

Impact of reverse repo rate and cash reserve ratio in National Stock Exchange (NSE) CNX bank index

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Monetary policy is the process by which the Central Bank or Monetary authority of a country controls the supply of money, often targeting a rate of interest. Every year Reserve Bank of India changes the cash reserve ratio (CRR), statutory liquidity ratio (SLR), prime lending rates (PLR), Repo Rate etc, to control the money supply of the country. This paper aim to discuss about the impact of reverse repo rate and cash reverse ratio in the share price of banking companies listed in National Stock Exchange. The analysis of the study showed that the security prices reacted to the announcements of reverse repo rate and cash reserve ratio.

Key words: Monetary policy, cash reserve ratio, reverse repo rate, National Stock Exchange.

INTRODUCTION

The monetary policy relates to the control of some measure of the money supply or the level and structure of interest rates. It is the process by which the central bank or monetary authority of a country controls the supply of money, often targeting a rate of interest. The monetary policy constitutes only one possible element of an economic policy. In this operating target goals that the Central Bank can influence better in the short duration period of the time. Although Central Banks cannot use monetary policy instruments directly to intermediate targets, affect operating targets, such as reserve money and short-term interest rates, which influence movements in intermediate variables. Monetary neutrality implies that policy should not affect real stock prices in the long run. Monetary policy actions might affect stock prices over shorter horizons, however, by altering the path of expected dividends, the discount rate, or the equity premium.

Reverse repo rate (RRR)

This is the exact opposite of repo rate. The rate at which Reserve Bank of India (RBI) borrows money from the banks is termed the reverse repo rate.

The RBI uses this tool hence it feels there is too much money floating in the banking system. If the reverse repo rate is increased, it means the RBI will borrow money from the bank and offer them a lucrative rate of interest. As a result banks would prefer to keep their money with the RBI instead of lending it out consequently, banks would have lesser funds to lend to their customers. This helps stem the flow of excess money into the economy reverse repo rate signifies the rate at which the central bank absorbs liquidity from the banks, while repo signifies the rate at which liquidity is injected.

Cash reserve ratio (CRR)

The cash reserve requirement is a bank regulation that sets the minimum reserves each bank must hold to customer deposits and notes.

These reserves are designed to satisfy withdrawal demands and would normally be in the form of fiat currency stored in a bank vault or with a central bank. The reserve ratio is sometimes used as a tool in monetary policy, influencing the country's economy, borrowing and interest rates.

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REVIEW OF LITERATURE

In the development markets, many studies have been conducted to test the efficiency of capital markets with respect to monetary policy announcements. In India, only very few studies has been conducted. Some of the select studies relevant to the present study are reviewed.

A study entitled "Estimating Monitory Policy Reaction Function (2011): A factor augmented vector auto regressive (FAVAR) approach". Journal of money investment and banking. The seminal work of Taylor (1993) found out monetary policy reaction functions. It states that central bankers increase the nominal interest rate if the inflation is above the target (inflation gap) and or output is above the potential (output gap) and vice versa. The data for this study are obtained from various sources. All variables are tested for unit root using the augmented Dickey- Fuller test.

Stefano (2004) evaluated the effects of monetary policy on stock market indices in the G-7 countries and Spain using the methodology of structural VARs. A model is estimated for each country and the effects of monetary policy shocks. Rudra and Indranil (2006) found that the RBI's policy actions had an impact in most segments of the financial market in India, its impact on the stock market was negligible. The authors employing a SVAR model, to ascertain whether the gradual emphasis on indirect instruments have facilitated the task of conveying the monetary policy stance and also provide evidence of asymmetric response of financial markets to monetary policy shocks. Agrawal (2007) found that the random walk hypothesis implies the price movements that are virtually independent of past price movement, as the future prices is independent of such factors as volume of sales, short interest, odd-lot sales, and stock advances and declines. The study provided evidences that the random – walk hypothesis may be incorrect or, at least incomplete.

Martin et al. (2007) contributed to the literature measuring the response of stock markets to monetary policy actions. The study analyzed the reaction of European stock market returns to unexpected interest rate decisions by the ECB. Endogeneity between interest rate changes and stock returns is taken into account using the identification through heteroskedasticity approach. Relying on different methods to extract monetary policy shocks, the study found a negative and significant relation between unexpected ECB decisions and European stock markets performance. Ernst (2009) found that the impact of monetary policy surprises by the FED or Bundesbank/ECB on the return volatility of German stocks and bonds. The stock return volatility is susceptible to monetary policy surprises in the United States, whereas monetary policy surprises in the Euro zone matter for bond return volatility. These findings are robust for other Euro zone stock markets, but not significant for other Euro zone bond markets.

Selim (2011) analysed the impact of exchange rate on monetary policy decision, inflation targeting countries take into account exchange rate while they build up their monetary policy.

The study entitled **"**RBI'S Third Quarter Review of Monetary Policy 2010 to 2011 Expectations". Examined the Indian economy and the RBI both witnessed challenging times since the global crisis began in September 2008. The upcoming monetary policy would primarily place focus on price pressures whilst not hampering growth.

Statement of the problem

Reserve repo rate and cash reserve ratio are important measures which motivate economic growth of our country. Its main changes in reverse repo rate and cash reserve ratio has direct impact in banking sector. Many parties are interested to know the efficiency of banking sector during the reverse repo rate and cash reserve ratio announcement period. In the recent years small and medium scale investors may not know the stock price movements in banking sector after the announcement of reverse repo rate and cash reserve ratio. Hence, the present study is an attempt to test the efficiency of Indian Banking Sector with respect to information content of reverse repo rate and cash reserve ratio announcement.

Objectives of the study

The following are the objectives of the study.

1. To analyze the impact of reverse repo rate and cash reserve ratio on the share price return during the pre and post announcement period.
2. To test the returns performance of stock price during the pre and post announcement of reverse repo rate and cash reserve ratio.

Need of the study

The current study aims to help investors by providing adequate information about share price movement at the time of event announced. The study would enable the investor to take appropriate investment decisions

Hypothesis of the study

The following hypotheses are tested in this study.

1. NH1: There is no significant impact of Reverse Repo Rate Announcement on the share price of sample Banking Companies.

2. NH2: There is no significant impact of Cash Reserve Ratio Announcement on the share price of sample Banking Companies.

METHODOLOGY OF THE STUDY

Sample selection

The sample selection for this study included or all the banking companies listed on the National Stock Exchange and it covers 100% selection under the NSE CNX Bank Index. As on during the period from year 1st January 2006 to 30th April 2011, there were 12 BANKING companies listed in the NSE CNX BANK INDEX. They are Axis Bank Limited, Bank of Baroda, Bank of India, Canara Bank, HDFC Bank Limited, ICICI Bank Limited, IDBI Bank Limited, Kotak Mahindra Bank Limited, Oriental Bank of Commerce, Punjab National Bank, State Bank of India and Union Bank of India.

Source and collection of the data

The study used mainly secondary data. Information relating to share price, and the value of NSE Bank Index were obtained from Prowess Corporate Database in CMIE and website like www.nseindia.com. The announcements of reverse repo rate and cash reserve ratio change were collected from website www.rbi.org. The other related sources were obtained from Books, Journals and websites.

Period of the study

The present study is an attempt to test the impact of reverse repo rate and crr on the price of Indian Banking Stocks during the period from 1st January 2006 to 30th April 2011". In the announcement from RBI Governor was considered to be the date of announcement. The 41 days trading were taken as the announcement period (that is, 20 days before the announcement, the day of announcement and 20 days following announcement that is, -20, 0, +20).

Tools used for analysis

To test the impact of announcement of CRR and repo rate on Indian Banking Companies, the following tools were used for study.

1. The daily returns (DR)
2. Abnormal returns (AR)
3. Average abnormal returns (AAR)
4. Cumulative average abnormal returns (CAAR)
5. Security returns variability (SRV),
6. Testing the significance of ASRV
7. Simple regression analysis (SRA)

The daily returns

The daily returns on each security in the sample were calculated by using the daily adjusted prices for CRR and repo rate as follow:

$$R_{jt} = \left(\frac{P_t - P_{t-1}}{P_{t-1}} \right) * 100$$

Where,

R i, t = Returns on security i on time t
P t = Price of the security at time t
P t-1 = Price at time t –1

Abnormal returns (AR)

There are three methods commonly used for estimating the abnormal returns namely, mean adjusted returns, risk – adjusted returns and market adjusted returns. In this study the abnormal returns are calculated as per the market adjusted abnormal returns. Abnormal returns is excess of actual returns over the returns from the market index, which is calculated by the following equation:

$$AR_{jt} = R_{jt} - R_{mt}$$

Where,

$AR_{j,t}$ = Abnormal returns on security *j* at time *t*
$R_{j,t}$ = Actual returns on security j at time *t*
$R_{m,t}$ = Actual returns on market index

Average abnormal returns (AAR)

The significance of reaction of security price to corporate event announcement are tested through average abnormal returns (AAR).

$$AAR_t = \frac{1}{n_i = 1} \sum^{n} AR_{it}$$

Where, AAR t is the average abnormal returns on day 't' and 'AR i,t is the abnormal return on security 'i' at time 't'.

Cumulative average abnormal returns (CAAR)

The behaviour of security prices to corporate event

announcement information are tested using cumulative average abnormal returns (CAAR).

$$CAAR_t = \sum_{t=1}^{K} AAR_{it}$$

Where,

AAR t is the average abnormal returns of the sample events at the time t
CAAR k is the cumulative average abnormal returns for the k the period.

Security returns variability (SRV)

The relevance of RBI event information for valuing the securities are tested by using the security returns variability (SRV) model.

$$SRV_{it} = \frac{AR_{it}^2}{V(AR_j)}$$

Where,

SRV i,t = Security returns variability of security i in time t
AR i, t is the abnormal return on security i on day t

Testing the significance of ASRV

The significance of reaction in prices is tested using the t-test. The t-statistics is calculated as:

$$t_{stat} = (ASRV_t - 1) \times \sqrt{n} / S$$

Where,

'n' is the number of companies in the event and 'S' is the standard Deviation of SRV

The significance of the AAR t is tested using the t statistics

$$t_{stat} = AAR \times \sqrt{n} / S$$

Where, 'S' is standard deviation of abnormal returns.

Simple regression analysis

Simple regression model is carried out between the dependent and independent variables mainly to identify the important variables which have more influence on the dependent variable. The simple linear regression model is in the;

$$Y = a + bx$$

Where,

Y is a dependent variable (Average share price of sample companies)
X is an independent variable (Average abnormal returns of sample event announcements taken one at a time)
a - The integer
b- The regression co-efficient

RESULTS AND ANALYSIS OF THE STUDY

For the purpose of the study the analysis of the study divided into two ares they are,

a) Analysis of abnormal returns (AAR) for sample event announcements,
b) Analysis of cumulative average abnormal return (CAAR) for event announcements.

Analysis of abnormal returns for sample event announcements

In order to study the performance of banking stocks, the average abnormal returns (AAR) were calculated for all the sample events that is, reverse repo rate and cash reserve ratio announcements. For the purpose of this study, the analysis was done under the following heads.

Analysis of average abnormal returns for announcement of reverse repo rate

In this analysis of average abnormal returns of sample banking companies during Pre and Post Reverse Repo Rate Announcement are illustrated in Table 1. It is clearly understood from the table that during pre reverse repo rate announcement period, the sample banking companies enjoyed positive average abnormal returns on the day of announcement. The sample banks registered high value of AAR 0.1587. This indicates that there was positive reaction of share prices. In other words, investors would have obtained better returns on their investment in those sample companies. On day 7 (post announcement), the share price reached the lowest AAR of 0.0037. This means that, from the aforementioned said days, the abnormal returns reached a significant level due to their reverse repo rate announcement. With respect to post announcement, the sample companies reached the lowest AAR of -0.13 on 6th day. It indicates that the investors did not get better returns. In other

Table 1. Results of average abnormal returns and T-statistics for reverse repo rate announcement of banking companies.

Days	AAR	T-STAT
-20	0.0455***	0.555
-19	0.0121***	0.085
-18	0.0234***	0.165
-17	-0.122	-1.434
-16	0.0477***	0.701
-15	-0.081	-0.99
-14	0.0798***	0.635
-13	-0.029	-0.287
-12	-0.16	-1.069
-11	0.0231***	0.229
-10	0.0362***	0.35
-9	-0.02	-0.196
-8	0.1432**	1.557
-7	-0.185	-2.204
-6	0.0821***	0.822
-5	0.162***	1.325
-4	0.1322***	1.768
-3	-0.487	-1.005
-2	-0.358	-1.788
-1	0.0198***	0.112
0	-0.199	-1.181
1	0.0285***	0.129
2	0.0174***	0.209
3	-0.075	-0.766
4	0.0744***	0.927
5	-0.015	-0.162
6	-0.13	-1.87
7	0.00378***	0.045
8	0.0978**	1.727
9	0.1154***	1.157
10	-0.157	-2.696
11	0.0845***	0.861
12	0.1134***	1.119
13	0.0513***	0.343
14	-0.055	-0.579
15	0.0859***	0.773
16	-0.001	-0.006
17	-0.04	-0.328
18	-0.041	-0.476
19	0.1167***	0.801
20	0.1587***	1.365

Source: Computed from PROWESS Corporate Database. Significance at *-1% **-5%, ***-10%.

words, event announcement did not create much influence on share price during Post Announcement. After the Announcement, the banking companies responded to the announcement with the significant value at 5% level during days of -8, -4 and 8. This means that from the aforementioned said days, the abnormal return reached significant level due to their reverse repo rate announcement in the post announcement period. From the overall analysis of the Table, it is clear that after the reverse repo rate announcement, the average abnormal returns of the sample companies started to decrease continuously till the 6th day. Hence the investors could make profit on the announcement date only.

Analysis of average abnormal returns for cash reserve ratio announcement

The results of average abnormal returns for CRR announcement are shown in Table 2. It is clearly understood from Table that during pre repo rate announcement, the sample banking companies enjoyed positive average abnormal returns 0.1319 on the day of announcement. This indicates that the investors obtained positive returns on their investment in those banking companies. The share price of the sample companies registered the lowest AAR of 0.002 on 19 day. It is interesting to note that on days -20,-15,-14,-12,-4,-3 and -2 AAR obtained return at 10% significant level. This indicates on those days, the average abnormal return reached significant level due to CRR announcement. The sample companies obtained the highest value of AAR is 0.1474 on day 6.

After the announcement, the Banking Companies responded to the announcement with significant value at 10% level on the days 0, 1, 5, 6, 7, 9, 10, 11, 12, 16, 17, 19 and 20. 1% significant levels were recorded on -6 and -18 day.

From the overall analysis of Table 2, it is clear that the after CRR announcement, the average abnormal return of the sample companies increased positively only on 6th day of announcement. Hence the investors could make profit on the announcement day only.

Analysis of cumulative average abnormal returns (CAAR) for sample event announcements

The analysis of abnormal returns in the previous area has shown the reaction of security prices to RBI event announcements. However, these results show the reaction in security prices only on a daily basis. It does not show the cumulative effect. In this area, the most widely used event study model cumulative average abnormal returns (CAAR) was used. The CAAR model is useful to examine the informational efficiency of the stock markets because it shows the direction of share price movement around the RBI event announcements. For the purpose of this study, the analysis was done under the following heads.

Table 2. Results of average abnormal returns and t-statistics for CRR announcement of banking companies.

Days	AAR	T-STAT
-20	0.035***	0.357
-19	-0.002	-0.023
-18	0.245*	3.462
-17	-0.026	-0.215
-16	-0.066	-0.859
-15	0.146***	1.24
-14	0.102***	0.845
-13	-0.01	-0.105
-12	0.083***	0.774
-11	-0.039	-0.337
-10	-0.028	-0.182
-9	0.006	0.04
-8	-0.013	-0.132
-7	-0.161	-1.726
-6	0.139*	2.063
-5	-0.054	-0.631
-4	0.017***	0.254
-3	0.095**	1.573
-2	0.133***	1.227
-1	-0.136	-1.545
0	0.132***	0.918
1	0.043***	0.516
2	-0.009	-0.108
3	-0.133	-0.898
4	-0.016	-0.129
5	0.019***	0.182
6	0.147***	1.384
7	0.065***	0.728
8	-0.101	-1.314
9	0.044***	0.452
10	0.063***	0.891
11	0.056***	0.643
12	-0.186	-1.748
13	-0.009	-0.07
14	-0.051	-0.381
15	-3.43E+02	-0.003
16	0.025***	0.306
17	0.098***	1.155
18	-0.032	-0.287
19	0.002***	0.028
20	0.02***	0.246

Source: Computed from PROWESS corporate database.

Table 3. Results of cumulative average abnormal returns for reverse repo rate announcement of banking companies.

Days	CAAR
-20	0.045
-19	0.058
-18	0.081
-17	-0.041
-16	0.007
-15	-0.074
-14	0.006
-13	-0.023
-12	-0.183
-11	-0.16
-10	-0.123
-9	-0.144
-8	-6E-04
-7	-0.186
-6	-0.104
-5	0.058
-4	0.191
-3	-0.296
-2	-0.655
-1	-0.635
0	-0.834
1	-0.806
2	-0.788
3	-0.863
4	-0.788
5	-0.804
6	-0.933
7	-0.93
8	-0.832
9	-0.716
10	-0.873
11	-0.789
12	-0.676
13	-0.624
14	-0.679
15	-0.593
16	-0.594
17	-0.634
18	-0.675
19	-0.558
20	-0.399

Analysis of cumulative abnormal returns for reverse repo rate announcement

The results of CAAR of banking companies for reverse repo rate announcement are illustrated in Table 3.

On the day of announcement (day 0), the CAAR for reverse repo rate announcement was -0.834 and it increased to 0.933 on day 6. This shows that banking share price immediately reacted to the CRR announcement contained information.

It is clear from the aforementioned analysis that

Table 4. Results of cumulative average abnormal returns for CRR announcement of banking companies.

Days	CAAR
-20	0.035
-19	0.033
-18	0.278
-17	0.253
-16	0.187
-15	0.333
-14	0.435
-13	0.425
-12	0.508
-11	0.469
-10	0.441
-9	0.447
-8	0.434
-7	0.273
-6	0.411
-5	0.357
-4	0.374
-3	0.468
-2	0.601
-1	0.465
0	0.597
1	0.64
2	0.63
3	0.498
4	0.481
5	0.5
6	0.648
7	0.712
8	0.611
9	0.656
10	0.718
11	0.774
12	0.588
13	0.579
14	0.528
15	0.528
16	0.553
17	0.651
18	0.619
19	0.621
20	0.642

Investors enthusiastically responded, to the reverse repo rate announcement. Therefore, there was strong upward movement of cumulative average abnormal returns of share prices on hearing the announcement. Investors could buy the shares of banking company on the announcement day and sell on day 7. It is possible for the investors to make higher returns by using the reverse repo rate announcement information

Analysis of cumulative abnormal returns for CRR announcement

Table 4 reveals the results of CAAR of banking companies for CRR announcement during the study period. During the study period, the CAAR of banking companies registered positive returns. On the day of CRR announcement, the sample banking companies obtained negative returns. It indicates that the announcement did not make any impact on share prices of sample companies. During the post announcement period it get High Value is 0.7184 and lowest value is 0.651.

The overall analysis of the Table 4 shows that the announcement did not negatively make any impact on share prices. But the share prices of the sample companies gradually increased with negative sign. Hence investors could get better return.

The average security return variability was used to study the impact of security price for RBI event announcements. For the purpose of this study, the analysis was done under the following heads.

Analysis of ASRV for reverse repo rate announcement

Table 5 shows the results of ASRV and t-value of banking companies for reverse repo rate announcement. The share prices of sample banking companies were affected on the day of announcement due to CRR announcement.

The ASRV for sample banking companies volatilised with the highest value of 1.8934.

After the announcement, the sample banking companies responded to the announcement. During the pre announcement day of -18 and -5, ASRV obtained 1.3647 and 0.0414 at 10% significant level. The post announcement 20th day (0.7288) obtained 10% significant level. It indicates the impact of share price movement due to the CRR announcement. It is clear from the aforementioned analysis that the share price of sample companies positively reacted on the day of announcement.

Testing the hypothesis

From the analysis, the ASRV for reverse repo rate announcement for all sample companies has significant difference. Hence the null hypothesis- "There is no impact of reverse repo rate announcement on the share price of sample banking companies", is rejected.

Table 5. Results of average security returns variability and T-statistics for reverse repo rate announcement of banking Companies.

Days	ASRV	T-STAT
-20	0.315	-8.362
-19	0.67	-2.323
-18	1.194***	1.365
-17	0.714	-3.376
-16	0.299	-10.31
-15	0.385	-7.529
-14	0.849	-1.201
-13	0.56	-4.404
-12	1.286**	1.911
-11	0.698	-2.996
-10	0.806	-1.873
-9	0.979	-0.2
-8	0.694	-3.325
-7	0.519	-5.73
-6	0.85	-1.506
-5	1.005***	0.041
-4	0.479	-6.972
-3	4.793*	7.825
-2	2.576*	7.867
-1	1.86*	4.855
0	1.893*	5.297
1	2.666*	7.555
2	0.503	-5.942
3	0.617	-3.931
4	0.389	-7.617
5	0.627	-3.95
6	0.486	-7.42
7	0.374	-7.553
8	0.313	-12.12
9	0.872	-1.279
10	0.456	-9.35
11	0.538	-4.713
12	0.924	-0.752
13	1.436*	2.915
14	0.407	-6.291
15	1.316*	2.848
16	1.625*	3.434
17	0.925	-0.617
18	0.435	-6.555
19	0.971	-0.196
20	1.085	0.729

Source: Computed from PROWESS corporate database.

Table 6. Results of average security returns variability and t-statistics for CRR announcement of banking companies.

Days	ASRV	T-STAT
-20	1.144***	1.468
-19	0.46	-6.672
-18	0.94	-0.846
-17	1.203**	1.702
-16	0.546	-5.953
-15	1.319*	2.709
-14	1.249*	2.066
-13	0.996	-0.044
-12	0.785	-1.995
-11	1.003***	0.023
-10	1.763*	4.99
-9	1.364*	2.474
-8	0.804	-1.972
-7	0.926	-0.793
-6	0.578	-6.282
-5	0.542	-5.332
-4	0.356	-9.846
-3	0.355	-10.72
-2	0.925	-0.694
-1	1.007***	0.079
0	2.449*	10.08
1	0.711	-3.501
2	0.732	-3.086
3	2.2*	8.115
4	1.392*	3.107
5	0.993	-0.067
6	1.102***	0.954
7	0.662	-3.803
8	0.641	-4.656
9	0.816	-1.872
10	0.51	-6.938
11	0.673	-3.78
12	1.161**	1.51
13	1.474*	3.64
14	1.76*	5.716
15	1.497*	4.421
16	0.525	-5.733
17	0.704	-3.493
18	0.994	-0.054
19	0.388	-8.637
20	0.695	-3.704

Source: Data from nseindia.com and computed from PROWESS corporate database significance at *-1%**-5%, ***-10%.

Analysis of ASRV for cash reserve ratio announcement

The results of ASRV and t value of banking companies for CRR announcement are given in Table 6. The share prices of banking companies were affected on the day of CRR announcement. The sample companies obtained ASRV of 10.081 on the ANNOUNCEMENT DAY. During

Table 7. Simple regression analysis of reverse repo rate during post announcement period.

Model	Unstandardized coefficients		standardized coefficients	T	Sig.	R. Squre
	B	Standard error	Beta			
constant	663.527	1.493		444.34	0	
CRR	21.812	11.236	0.297	1.941	0.059	0.088

Source: Computed from 'SPSS 16.0' package *significance at 5% level.

Table 8. Simple regression analysis of CRR during post announcement period.

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	R. Square
	B	Standard error	Beta			
Constant	481.587	1.451		331.904	0.000	
CRR	-6.395	16.110	-0.063	1.941	0.694	0.004

Dependant variable: Share price.

the pre announcement period,-12,-11, -1 obtained at 10% significant level. The sample companies obtained the lowest value (0.525) on the 16th day. From the overall analysis of Table 6, it is clear that the share prices of sample companies positively reacted on the Day of Announcement.

Hypothesis testing

From the analysis of Table 6, it is clear that there was reaction to CRR announcement. Therefore, the null hypothesis- "There is no impact of CRR announcement on the share price of sample banking companies", is rejected.

Simple regression analysis

The study is multiple regressions if more variables are involved. The regression analysis is used for two purposes. One is to fit a model and then make a forecast and second is to identify the independent variables which explain most on the dependent variables through R^2, the coefficient of determinant. If the value of R^2 is nearer to one and even if the value is at least 70 or 80%, then we say that the model is a better model. In this, a simple regression was carried out between the dependent and independent variables mainly to identify the important variables which influence more strongly on the dependent variable.

In this area, a simple regression analysis was carried out between the dependent variable, namely share price and the independent variable, namely, the AAR's for two events reverse repo rate and CRR announcement considered for the study. The main objective of this analysis is to identify the event which has more influence / impact in the post event period than the other events through R^2, the co-efficient of determination and the results are provided in the following Tables.

a) Simple regression analysis of reverse repo rate announcement during post announcement period
b) Simple regression analysis of cash reserve ratio announcement during post announcement period

Simple regression analysis of reverse repo rate announcement during post announcement period

The results of simple regression coefficient of reverse repo rate announcement are given in Table 7. It is clearly understood from the analysis that during the announcement of reverse repo rate, there was no change in the share price at 5% level of significance. It is noted that R-square value is 0.088 which indicates the fact that during the Post announcement period of reverse repo rate, AAR of sample companies had significant linear relationship between reverse repo rate announcement and share price movements.

Simple regression analysis of cash reserve ratio announcement during post announcement period

Table 8 shows the results of simple regression coefficient of repo rate announcement. From the analysis, the repo rate announcement significantly influenced the share price at 5% level of significance. It is noted that the R-square value is 0.012. It indicates that during the post announcement period of repo rate, AAR of sample companies had significant linear relationship between repo rate announcement and share price movements.

Comparing the impact of reverse repo rate with CRR

announcement, reverse repo rate announcement had more influence on the share price movements than that of CRR.

Findings of the study

The following are the major findings of the study. They are as follows

1. The AAR of the sample banking companies has been increased positively on the day of announcement of repo rate.
2. Reverse repo rate announcement has given positive CAAR during pre and post announcement period. During post announcement period, the abnormal return recorded strong upward movements.
3. Cash reserve ratio recorded significant influence on the security price immediately after the announcement. But at the same time, it was negative CAAR during pre and post announcement period.
4. According to the analysis of ASRV, there was an impact of reverse repo rate and repo CRR announcements on the share price of sample banking companies.
5. Comparisons between the impact of reverse repo rate and CRR announcements reveals the fact that reverse repo rate had more influence on the share price movements than that of repo rate.
6. Banking companies responded to the reverse repo rate and CRR announcement information after the announcement and reflected the same on the security price.

Conclusion

Every year RBI changes the CRR, SLR, PLR, repo rate etc, to control the money supply of the country. This study is an effort to understand whether reverse repo rate and cash reserve ratio announcements hold any informational content for the stock market that may lead to changes in the stock price and to test the impact of reverse repo rate and cash reserve ratio on the share price of Indian banking stocks.

The results of the study showed that the security prices reacted to the announcements of reverse repo rate and cash reserve ratio. The reaction took place for a very few days only, mostly covering days up. It is clear from the study that reverse repo rate and cash reserve ratio influenced the price of Indian Banking Stocks, and Indian Stock Market was able to capture the RBI announcement information immediately. Thus one can conclude from the forgoing discussion that Indian Stock Markets in respect of banking companies in general are efficient to some extent, but not perfectly efficient in responding to the RBI Announcements.

LIMITATIONS OF THE STUDY

The following are some of the limitations of the study.

1. The study was limited to banking companies which announced the sample event announcement during the study period 1st January 2006 to 30th April 2011.
2. The study was confined to only listed companies on BSE, due to time constraints.
3. As the study was based mainly on secondary data, it is beset with certain limitations which are bound to arise while dealing exclusively with secondary data.
4. All limitations associated with various tools like AAR, CAAR analysis, “t” test, simple regression, which are widely used as techniques to analyze and interpret data, are applicable to this study also.

SUGGESTIONS OF THE STUDY

The important suggestions are given as follows:

1. Whenever the RBI announces the reverse repo rate announcement, investors are advised to invest immediately because the present study reveals the fact that reverse repo rate announcement generated positive cumulative average abnormal return.
2. The investor may not take immediate investment decision after the announcement of reverse repo rate, because it recorded negative CAAR during pre and post announcement period.
3. The investor can invest more in the banking companies at the time of reverse repo rate announcement because the comparison between the impact of reverse repo rate and CRR announcements reveals the fact that there was much influence on the share price movements by reverse repo rate than that of CRR.
4. The investor should also focus on other announcements like SLR, PLR, reverse repo rate etc, because they also influence the share price of banking companies positively.
5. Before investing in the stock market, the investors should have knowledge about RBI announcements.

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