

Demonetization Impact on Banking Sector Decoded: Fiasco or Triumph

Mrinalini*

Research Scholar

Abstract – This study tries to investigate the impact of surgical strike in the form of demonetization done by PM Narendra Modi to curb black money from Indian Economy before and after demonetisation on Indian Banking sector for the period of 1st Sept 2016- 11th January 2017. Event Study Methodology has used where the Cumulative Average Abnormal Returns (CAAR) of the stock prices of select private and public sector banks listed on NSE India in different event windows have been analysed. A paired sample t-test has been conducted to compare the pre-announcement and post-announcement returns of stock prices for the event window i.e., Demonetisation.

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I. INTRODUCTION

Indian economy has seen many reforms since independence and these changes in economic policies have a great impact on the economy of nation. The reforms are needed in order to overcome existing situational difficulties. In the recent Corruption Perception Index India stood at 79th place. In a transforming attempt to weed out the black money and corruption from Indian economy the Government of India took the strategic initiative of Demonetization on 8th of November 2016. The Government has called this situation as short pain and long term gains.

The Spectrum of Demonetisation effect will remain incomplete without considering the long term gains and considering only the clinches observed in the short term. In the short run, trade and consumption of the nation is negatively impact by Demonetisation because of our great dependence on the cash and country facing problem of liquidity. The implementation of GST is headed the economy into new Tax regime where in Demonetisation in the long run prospective together with GST will result in high tax net and low black money generation and will resultant lead to positive contribution to GDP.

The problem of liquidity is already solved with the huge circulation of new notes along with printing of existing notes. The counterpart of liquidity problem is in terms of increased bank deposit base. Sharp shift in the nature of saving and investment has been observed from unproductive assets to interest bearing financial assets. This has led the increased liquidity to banks, which can be leveraged for lending depending upon the stability of Deposits. Money will get properly channelized through banks with lower cost of funds.

As people are depositing funds aggressively into the bank accounts we see significant uptick in the CASA of the banks. Due to decline of the cash economy, transaction through banks will go up significantly going forward, especially in the rural strong positive for PSU banks. Though in the short term housing financing companies are going to witness muted growth.

This study is an attempt to identify the impact of demonetization on banking sector after and before the announcement of Demonetization.

II. REVIEW OF LITERATURE

(Varadharajan, P & Vikkraman, P, 2011) Examined the effect of pre and post budget on the stock market volatility. The study is comparative analysis between Nifty and Sensex. The study period was from 2001 to 2011. It concludes that the returns of the post budget period are mostly negative. It also found that as compared to BSE, turnover and volatility of NSE was high.

(Vishal, 2012) Companies have been selected from selected 6 sectors of Nifty index which includes fertilizers, textiles, hotels, papers, software and pharmaceuticals to carry out the study. The study period is from 1st August 2011 to 30th April 2012. It was concluded that abnormal returns can be earned by the investors. The impact of the budget differs among sectors and also from company to company in the same sector.

(Iftikhar, Ammara; Ihsan, Aamina, 2016) The paper attempts to analyse the direction of gold price movement during the two Muslim events, Ramadan and Aashoura. This study covers the semi strong

form efficiency of Gold Market, it was found that these Islamic religious events have significant impact on economy. Ramadan brings a positive impact, while Aashoura is connected with a negative effect.

(P. Thilagavathi, 2016) studied the long term and short term impact of demonetization and result shows the long term impact of these demonetization measures cannot be fully ascertained at this stage, the overall economy is expected to benefit from a decrease in unaccounted cash transactions and an elimination of counterfeit currency notes, leading to more effective tax collection and increased transparency in ascertaining transaction costs

(Jai Bansal, 2017) studied the impact of demonetization on GDP and different sectors of Indian Economy and the result shows that banking system will also get strengthened as banks will be flooded with huge amount of money. This will also result in more economic development in the nation as the money will be channelized properly through banks

III.OBJECTIVE

The objective of this paper is to investigate the pre and post effect of Demonetization announcement on the mean and variance of stock returns of selected private and public sector banks listed on NSE India.

IV. METHODOLOGY

The study is based on the NIFTY Private Bank Index consists of 10 stocks and the NIFTY PSU Bank Index comprises of 12 stocks listed on National Stock Exchange during the period from 1st September 2016 to 11th January 2017. The study analysis the closing stock price of banks during different event windows ± 5 days, ± 15 days, ± 30 days, ± 45 days. The study also attempts to understand if the abnormal returns achieved by announcements are statistically significant or not. Event study Methodology has been employed to examine the amount of abnormal returns (+ve or -ve) for listed private and public sector banks. The Event day is taken as 9th November 2016(the effect of Demonetisation was seen on the next day of its announcement) and 45 days prior to event day and 45 days after the announcement of Demonetisation are considered as event windows for purpose of analysis. For the purpose of study data is collected from NSE website.

10 private sector bank stocks are compared with NIFTY Private Bank Index and 12 public sector bank stocks are compared with the NIFTY PSU Bank Index .Computation of return on each day is studied for all stock. Computation of Abnormal return for each day using market model means

AR = Expected Return – Actual Return

Average abnormal return is calculated by aggregating the abnormal returns for all N stocks to find Average abnormal return at each time t.

The sum of average abnormal return over the t days in the event window is calculated to find CAAR.CAAR value gives aggregate effect of abnormal returns. Particularly if the influence of even date itself.

CAAR and AAR are used to test the significance of date. It can be used to find the existence of (+ve)(-ve) abnormal returns when there is a (+ve/-ve) surprise/ or(news).

Sample Construction

Event day is denoted as Day 0. AR (0) with cumulative abnormal returns CAAR (-5,+5), CAAR (-15,+15), CAAR(-30,+30) and CAAR (-45,+45). Estimation period is comprised of 90 days, 45 days prior to event and 45 days post event.

HYPOTHESES

HO : Demonetisation has positive impact on mean and variance of Private bank's Returns.

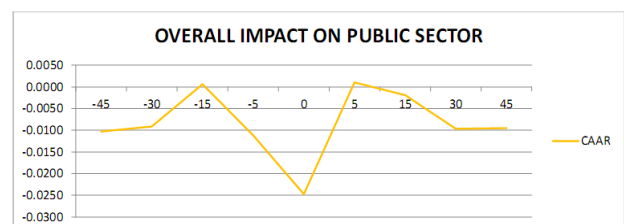
H1 : Demonetisation has negative impact on mean and variance of Private bank's Returns.

HO : Demonetisation has positive impact on mean and variance of Public bank's Returns

H1 : Demonetisation has negative impact on mean and variance of Public bank's Returns.

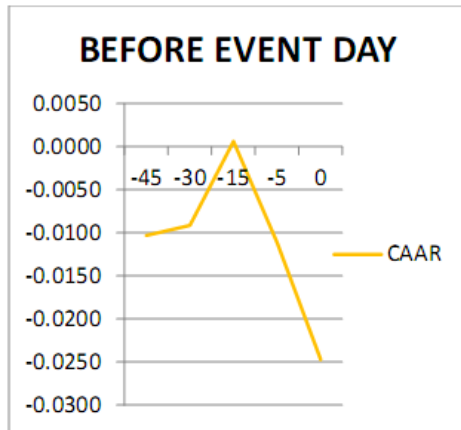
V. ANALYSIS AND INTERPRETATION

AARs and CAARs for each group have been evaluated and other statistical analyses are used to test the significance of data. Essentially, we want to see if there are positive (negative) abnormal returns when there is positive (negative) news. Abnormal return can be interpreted over the event window as a measure of the impact of the event the stock prices of public sector banks. Graph 1.1 shows the overall impact of demonetization on **public sector banks stocks** for the estimated period considered for the event. The graph shows the fluctuation in the stock prices during event period.

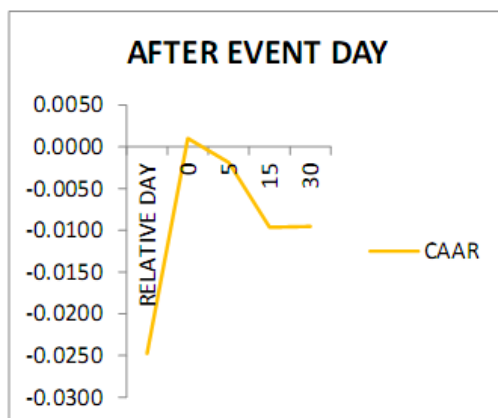


Graph 1.1

Source: Author's compilation



Graph 1.2



Graph 1.3

Source: Author's compilation

Graph 1.1 shows the overall impact of demonetization on Aggregate public sector banks stocks. Overall impact shows the fluctuation in the Public sector bank return pre and post demonetization. Graph 1.2 shows the stock return of the public sector bank's stocks listed in NSE which shows that the Cumulative Average Returns of the stocks were having average returns before the demonetization but it shows the downward trend on the event day i.e the announcement of Demonetization shows that the average return on stocks had fallen tremendously.

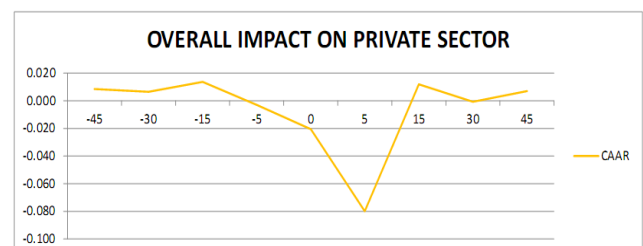
Graph 1.3 shows the stock return of the public sector banks stocks listed on NSE which shows that the Cumulative Average Returns of the stocks are having downward trend after the announcement of Demonetization the average return on stocks have fallen tremendously.

Table.1

RELATIVE DAY	AAR	T-SCORE	CAAR	ALLA RESID	ANDH RESID	BOB RESID	BOI RESID	CAN RESID	DBI RESID	GRU RESID	PNB RESID	SBI RESID	SYND RESID	UTI RESID
-45	-0.0051	0.3505	0.0103	0.0116	-0.0092	0.0001	0.0039	0.0049	0.0089	-0.0060	0.0018	0.0058	0.0140	0.0119
-30	-0.0040	0.2716	0.0091	0.0031	-0.0128	0.0113	0.0037	0.0023	0.0128	0.0004	0.0100	0.0054	0.0118	0.0145
-15	0.0058	0.3934	0.0006	0.0082	0.0025	0.0026	0.0006	0.0019	0.0364	-0.0012	0.0037	0.0031	0.0003	0.0116
-5	-0.0060	0.4075	0.0111	0.0053	0.0018	0.0026	0.0029	0.0117	0.0124	-0.0068	0.0179	0.0078	0.0036	0.0126
0	-0.0196	1.3327	0.0247	0.0435	-0.0421	0.0022	0.0165	0.0209	0.0338	-0.0269	0.0231	0.0269	0.0071	0.0724
5	0.0062	0.4203	0.0010	0.0011	0.0015	0.0315	0.0003	0.0339	0.0095	0.0184	0.0160	0.0015	0.0110	0.0000
15	0.0033	0.2231	0.0019	0.0092	0.0062	0.0013	0.0017	0.0083	0.0024	0.0033	0.0037	0.0043	0.0034	0.0032
30	-0.0045	0.3063	0.0097	0.0128	0.0008	0.0009	0.0054	0.0102	0.0021	-0.0060	0.0001	0.0109	0.0063	0.0082
45	-0.0044	0.2970	0.0095	0.0101	-0.0116	0.0028	0.0084	0.0142	0.0101	-0.0141	0.0221	0.0058	0.0025	0.0022

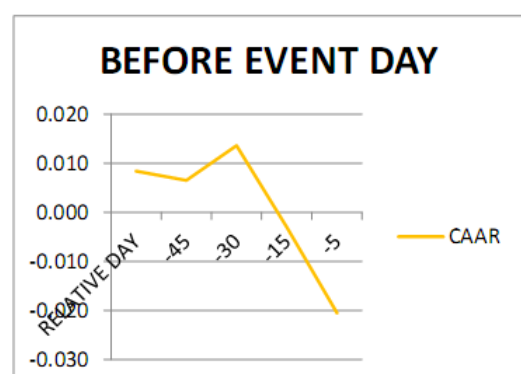
Source: Author's calculation

Table 1.1 shows the the result of return analysis of Aggregate public sector banks stocks which revealed a positive statistically significant result on 5 days prior to demonetization announcement where t value of CAAR is 0.407 which is not less than 0.05 and we can say that it is not significant at 5% significance level and also after 45 days also there is no significant result as t value of CAAR is 0.2973 which is more than 0.05 and hence not significant at 5% level of significance. CAAR value shows that there is negative as well as positive impact on the public sector bank's stocks post demonetization.

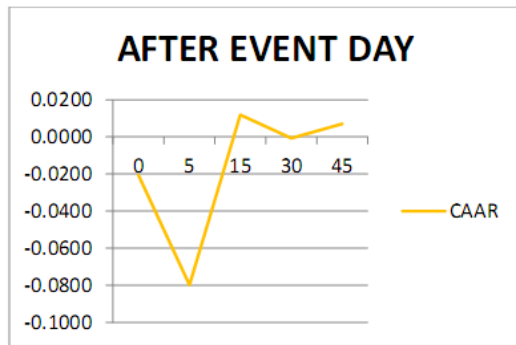


Graph 2.1

Source: Author's compilation



Graph 2.2



Graph 2.3

Source: Author's compilation

Graph 2.1 shows the overall impact of demonetization on Aggregate private sector banks stocks. Overall impact shows the fluctuation in the Private sector bank return pre and post demonetization. Graph 2.2 shows the impact of demonetization on private sector bank stock return pre demonetization period which shows that the returns were low but on the event day only there is sudden decrease in returns. Graph 2.3 shows the impact of demonetization on private sector bank stock return post demonetization which shows that only on the event day there is abnormal decrease in returns but after the event day again there has been recovery in returns of the private sector bank stock which shows that after the demonetization there is increase in CASA (Current Account Saving Account) deposit which led to increase in bank liquidity that has resulted the increase in Stock Price of Private Banks .

Table -2

RELATIVE DAY	AAR	T-SCORE	CAAR	YESR RESID	KOTAK RESID	KARUR RESID	INDUSIN D RESID	IDFC RESID	ICICI RESID	DEFC RESID	FEDERA L RESID	CUB RESID	AXIS RESID
-45	0.004	0.050	0.008	0.001	0.006	-0.002	0.000	0.035	0.009	0.001	0.008	0.017	0.003
-30	0.002	0.027	0.006	0.012	-0.001	0.003	0.000	0.011	0.013	0.004	0.019	0.007	0.011
-15	0.009	0.111	0.014	0.018	0.009	0.010	0.001	0.014	0.004	0.007	0.002	0.002	0.026
-5	0.007	-0.086	0.003	0.028	-0.003	-0.007	0.019	0.020	0.015	0.003	-0.024	0.009	0.001
0	0.025	-0.293	0.021	0.027	-0.012	-0.030	-0.018	0.028	0.037	0.006	-0.050	0.030	0.010
5	0.084	-0.998	0.080	0.011	0.001	-0.789	0.004	0.007	0.010	0.011	-0.012	0.031	0.002
15	0.008	0.092	0.012	0.017	0.002	0.002	0.009	0.006	0.009	0.012	0.002	0.004	0.015
30	0.005	-0.058	0.001	0.009	-0.003	0.007	-0.004	0.016	0.007	0.002	-0.012	0.000	0.016
45	0.003	0.033	0.007	0.014	0.009	0.005	0.000	0.001	0.010	0.001	-0.001	0.017	0.008

Source: Author's calculation

Table 1.2 shows the result of return analysis of Aggregate private sector banks that does not show any statistically significant result pre and post demonetization period. But t score of CAAR value shows that there is abnormal increase in return value on the event day and after that again there is decline in stock return .

T- Test

T-test is used to analyze whether CAAR value is statistically significant pre and post demonetization period. If t-statistics < or > t-critical value two tail, we reject Null Hypothesis.

Therefore we fail to reject Null Hypothesis. The observe difference between the sample means.

HO: Post announcement of CAAR $\leq$ Pre announcement of CAAR

H1: Post announcement of CAAR > Pre announcement of CAAR

Table-3

T-Test: Paired Two Sample for Means for Public sector banks

	BEFORE	AFTER
Mean	-0.01094	-0.00895
Variance	8.2E-05	9.99E-05
Observations	5	5
Pearson Correlation	0.269877	
Hypothesized Mean Difference	0	
df	4	
t Stat	-0.38537	
P(T<=t) one-tail	0.359791	
t Critical one-tail	2.131847	
P(T<=t) two-tail	0.719581	
t Critical two-tail	2.776445	

Source: Author's calculation

If t-statistics < t-critical value two tail or If t-statistics > t-critical value two tail. We reject Null Hypothesis. This is not $-2.36 < 0.57 < 2.36$. Therefore we accept Null Hypothesis. The observe difference between the sample means.

Table 3 Analysis result accept null hypothesis because p value is greater than 0.05 and hence null hypothesis in this case cannot be rejected, which shows post demonetization announcement of CAAR is less than or equal to pre demonetization announcement.

HO: Post announcement of CAAR $\leq$ Pre announcement of CAAR

H1: Post announcement of CAAR > Pre announcement of CAAR

Table-4

T-Test: Paired Two Sample for Means for Private sector banks

	BEFORE	AFTER
Mean	-19	0.000992
Variance	342.5	0.00018
Observations	5	5
Pearson Correlation	-0.67098	
Hypothesized Mean Difference	0	
df	4	
t Stat	-2.29467	
P(T<=t) one-tail	0.041714	
t Critical one-tail	2.131847	
P(T<=t) two-tail	0.083427	
t Critical two-tail	2.776445	

Source: Author's calculation

Table 4 shows the result of Paired sample t-test for Private Banks and the analysis results shows that P-value in case of one-tail is less than 0.05 which led to reject of null hypothesis that Post Announcement CAAR is less than or equal to Pre Announcement but in case of two-tail hypothesis will not be rejected because P-value is more than 0.05. which shows post demonetization announcement of CAAR is less than or equal to pre demonetization announcement

VI. SUMMARY & CONCLUSION

The move of Demonetization is smooth due to the efficient support of the banks functioning in the country. Banking sector has direct implication of Demonetization. The task which became routine for initial days after the announcement of Demonetisation was to stand in big queues to either exchange or deposit the demonetized currency with banks. People faced the problem of liquidity. The short term liquidity problem was curbed by the printing and massive circulation of new currency.

Findings shows that both in case of Private sector banks and Public sector banks stock prices have improved post demonetization as banks was the main sector that had heavy impact of demonetization. There is increase in bank liquidity immediately after demonetization as after demonetization everyone start depositing the money and there were limited withdrawal limit that has led to increase in CASA deposit and thus improve liquidity of both Private sector and Public banks.

With the massive deposits by the public, it was obvious the bank deposits base could hike. Now the unanswered query remained is whether the banks are

able to utilize these assets efficiently and effectively or not. Banks are medium to promote and ensure flow of capital formation in the Economy. Increased liquidity with banks would imply increase CASA ratio (*ratio of deposits in current and saving accounts to total deposits*) and reduced MCLR (*marginal cost of funds based lending rate refers to the minimum interest rate of a bank below which it cannot lend, except in some cases allowed by the RBI*), which can be leveraged for lending purposes The banks will benefit the most if they lend their huge aggregated deposits to RBI at reverse repo rate.

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Corresponding Author

Mrinalini*

Research Scholar

E-Mail – mrinalini1609@gmail.com