

A Study on the Impact of Demonetization and GST on the Indian Banking Sector

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Abstract:- The subject of the study is to analysis the impact of Demonetization and GST in the banking sector in India. The analysis focuses on the stock price of these banks. BSE listed public and private sector banks of bank index are used for this study. Hereby we found that there is no significant impact of Demonetization and GST on the public banks and private banks. Therefore we conclude that there is no impact caused due to Demonetization or GST on the banking sector, of companies listed in BSE. We used market return model for making the result more accurate.

Keywords:- Demonetization, GST, Event Study, BSE Listed Banks, BSE Bankex, Market Return.

I. INTRODUCTION

Demonetization is the act of removing a cash unit from its status as a legal tender. Anyway, a difference in national cash occurs: the current structure or types of money are removed and resigned to be regularly replaced by new notes or coins. Sometimes a nation replaces the old money with new cash altogether. The demonetisation led to fall in the SENSEX and NIFTY50 by six percent the following day. The banks had seen over 3trillion rupees being deposited in form of the old notes. The fall of rupee was sharp against the dollar. There were short term and long term impacts of the demonetisation. In 2016, on 8th of November the Prime Minister of India had publicly announced the 500 and 1000 were to be scrapped of from is legal status with immediate effect. They were the two biggest denomination of the country and these notes accounted for 86% of the country's currency in circulation.

GST is one indirect tax for the whole nation, which will make India one unified common market. GST is a single tax which has been recently introduced in India on the supply of goods and services. Credits of input on which taxes are paid at each stage will be available in the subsequent stage of value addition, which makes GST essentially a tax only on value addition at each stage. The final consumer will thus bear only the GST charged by the last dealer in the supply chain, with set-off benefits at all the previous stages. The TAX happened from July 1, 2017 through the execution of One Hundred and First Amendment of the Constitution of India by the Indian government.

➤ Banking Industry

The Indian banking sector, according to the Reserve Bank of India (RBI), is sufficiently capitalized and well-regulated. The financial and economic conditions of the country are much higher than in any other country in the world. Credit, market and liquidity risk studies indicate that Indian banks are generally resilient and have resisted global decline successfully. The Indian banking industry has recently seen innovative banking models like payments and small financial banks roll out. New actions by RBI can go a long way to help restructure the domestic banking industry.

India's digital payment system has most evolved among 25 countries, the only Faster Payments Innovation Index (FPII) system in India with its Immediate Payment Service (IMPS), level 5.

II. ARTICLE REVIEW

(DANI, 2016) The article talks about the impact of GST on Indian economy, the articles tells how the introduction of GST simplifies the tax calculation and will enhance the economy. In this particular article there has been details about GST impact on the telecommunication sector and the petroleum sector. The article shows that GST is unfavorable for the telecommunication sector as it will lead increase in its direct tax from 14% to 20%. The article also shows the GST impact on petroleum, electricity and real estate which is to be kept out of it purview and petroleum products acts as an direct contributor to inflation in India. the government should make an attempt to insulate the vast poor population of India against the likely inflation due to implementation of GST.

(DASH, 2017) The article sums up the GST as a whole and provides insight about the positive and negative impact of GST on the Indian economy. The nationwide GST will overhaul India's convoluted indirect taxation system and unify the over \$2 trillion economy with 1.3 billion people into a single market. The economy as a whole will have impacts of GST rate being higher than VAT. Industries on a high scale such as manufacturing industries will incur losses but the government has approved to compensate for the losses. To see as an overall benefit the GST will boost the economy and increase the employment rates.

(YADAV, 2017) This article talks about the impact of GST on various sectors and their implications. The article shows that the GST will not have impact on FMCG sector and food industry as these are necessity of the people in the country, having a high GST rates on these sectors will have regressive nature of the people. The implementation of GST on real estate sector will effect partially. As the sale or transfer of immovable properties are not included in GST. GST on transport sector will result in more efficient cross state transportation. It will bring down the logistics cost, reduced times for transportation. The major impact of GST would be on the service sector such as the banking, telecom and insurance sector. These industries will be affected the most and India consist of 60% of service sector.

(Jain, 2017) The particular article talks about the banking sector providing its evidence from the stock market. The articles shows the impact on the banking sector due to demonetization. The impact differed in both the banking sector. The public sector saw an positive impact whereas the private saw an lagged negative impact. The study was conducted on 40 banks listed on the stock market. The data used for the purpose of test was aggregated and disaggregated with the test that was run for these data was event study approach and regression analysis. The analysis was for short term windows such as 5days, 7days, 9days etc.

(Himanshu Kushwaha, 2018) The article talks about the impact of demonetization on the Indian economy. The articles objectives are to understand the meaning of demonetization, to know its sector-wise impact and what are the negative and positive impact on the Indian economy. The entire study is based only on observation

and documentary analysis. Furthermore, the required & relevant secondary data are collected from various Research Papers, Journals, & Publications, websites and many others. The main reason to implement the demonetization was to reduce the black money and terror funding done. The real estate had an impact as it involves cash based transaction which are unaccounted of. The total value of old currency notes in the circulation was to the tune of Rs 14.2 trillion, which constitute about 86% of the total value in circulation.

III. RESEARCH DESIGN

A. Objective of the Study:

- To study the impact of demonetization on the banking company.
- To study the impact of GST on the banking company.
- To study the trends between the two events

B. Variables:

➤ *Independent Variables*

Demonetisation and GST announcement, stock price behaviour before the announcement.

➤ *Dependent Variables*

Stock price behaviour of companies selected after the announcement

C. Data Collection:

The data used for the purpose of research is secondary data. The data of stock prices and particular index is collected from the BSE site. The company chosen are on the base of their market capitalization.

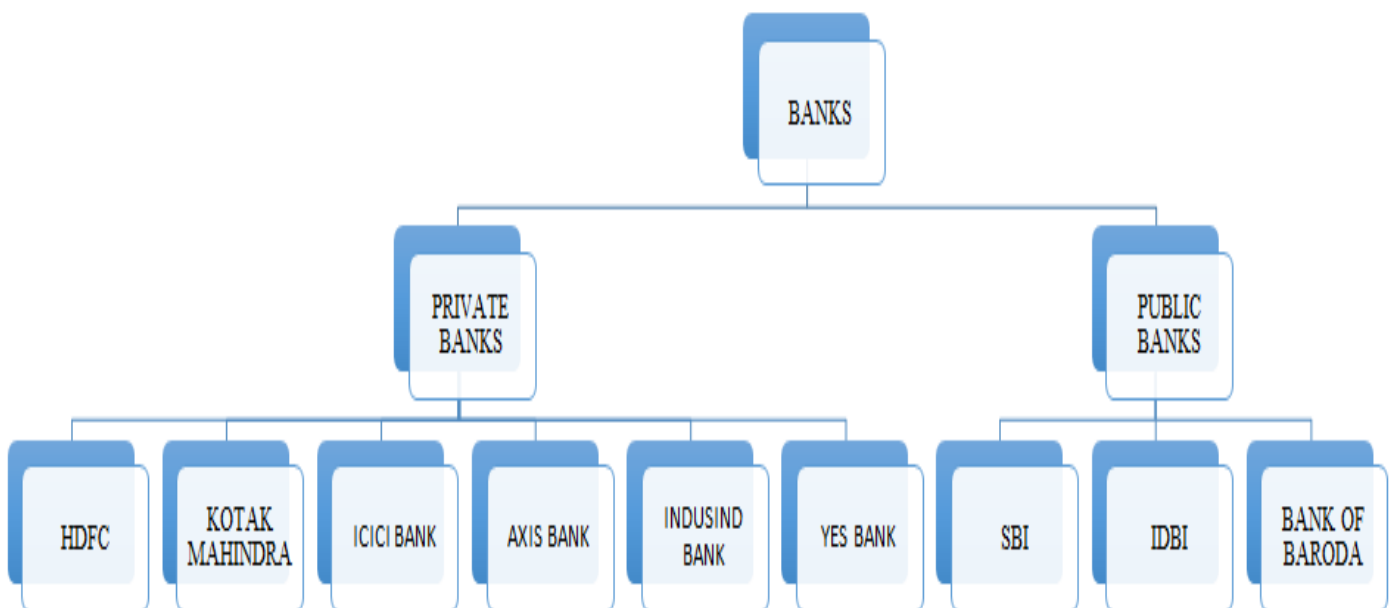


Fig 1

IV. METHODOLOGY

In order to understand the impact of the announcement of demonetization and GST the test applied here is the Paired Sample T-test on the abnormal returns of the banks. The hypothesis are stated below-

➤ *Hypothesis 1-*

H0: There is no significant impact of demonetization announcement on the Abnormal Return (AR) of banking industry of India.

H1: There is a significant impact of demonetization announcement on the Abnormal Return (AR) of banking Industry of India.

➤ *Hypothesis 2-*

H0: There is no significant impact of GST announcement on the Abnormal Return (AR) of banking industry in India.

H1: There is a significant impact of GST announcement on the Abnormal Return (AR) of banking industry in India.

The software used for testing the abnormal returns was SPSS and test that was used to run the data was Paired Sample T-Test. In this part their calculation of abnormal return. Abnormal return is the difference of actual return and expected return in the event window. It is predicted by two inputs in this study, using stock price of the companies and that particular index of the industry from BSE. The index for demonetization and GST chosen was BSEBANKEX.

The formula for calculating the closing return of stock price and index return used in excel sheet was =ln (current days price/previous day price)*100.

The formula for calculating the expected return in excel is =INTERCEPT(close price return, index return) + SLOPE(close price return, index return)*index return

- For the purpose for calculating the expected return we have chose the pre-data i.e, day -31 to day -493 for expected return in case of DEMONETIZATION and -31st day to -246th day in the case of GST.

ABNORMAL RETURN = close price return - expected return(locked in excel)

- The abnormal return period has been conducted for a time period of 21days i.e., -10,0,10.

➤ *Limitation of the Study:*

This particular study constraint to the BSE data and their particular index where the data is collected only for -

- The study is done for a event window of 21days i.e., 10days pre to the event and 10days post to the event. The study hasn't been conducted for a longer period of time.
- The study is conducted only for the banking index of Bombay stock exchange and has been done for the whole index except for the two banks Federal and City Union.
- Only the event of announcement date has been taken into consideration and not other factors which can influence the banking sector.

V. ANALYSIS AND INTERPRETATION

1. HDFC BANK

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	HDFCPRE - HDFCPOST	.44834	1.59695	.50500	-.69405	1.59073	.888	9	.398

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	HDFCPRE - HDFCPOST	-.20580	.83932	.26542	-.80621	.39461	-.775	9	.458

Table 1

➤ *Interpretation:*

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of HDFC bank.

2. KOTAK MAHINDRA BANK

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	KOTATPRE - KOTAKPOST	.77190	2.52095	.79720	-1.03148	2.57528	.968	9	.358

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	KOTAKPRE - KOTAKPOST	-.39851	1.51693	.47970	-1.48366	.68664	-.831	9	.428

Table 2

➤ Interpretation:

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of KOTAK MAHINDRA BANK.

3. STATE BANK OF INDIA

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	SBIPRE - SBIPOST	-.63436	3.76795	1.19153	-3.32978	2.06107	-.5329		.607

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	SBIPRE - SBIPOST	-1.01293	1.68857	.53397	-2.22086	.19500	-1.897	9	.090

Table 3

➤ Interpretation

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of SBI bank.

4. IDBI

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	IDBIPRE - IDBIPOST	-.64754	2.90387	.91828	-2.72484	1.42977	-.705	9	.499

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	IDBIPRE - IDBIPOST	-1.78784	3.01271	.95270	-3.94300	.36733	-1.877	9	.093

Table 4

➤ Interpretation

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of IDBI bank.

5. ICICI BANK

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	ICICIPRE - ICICIPOST	.45830	3.72090	1.17665	-2.20347	3.12007	.389	9	.706

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	ICICIPRE - ICICIPOST	-1.32550	3.17218	1.00313	-3.59474	.94374	-1.321	9	.219

Table 5

➤ Interpretation

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of ICICI bank.

6. AXIS BANK

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	AXISPRE - AXISPOST	-.52101	4.53516	1.43414	-3.76527	2.72325	-.363	9	.725

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	AXISPRE - AXISPOST	.28941	1.64592	.52048	-.88800	1.46683	.556	9	.592

Table 6

➤ Interpretation

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of AXIS bank.

7. INDUSIND BANK

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	INDUSINDPRE - INDUSINDPOST	1.29445	3.60964	1.14147	-1.28773	3.87663	1.134	9	.286

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	INDUSINDPRE - INDUSINDPOST	-.71665	.81621	.25811	-1.30053	-.13278	-2.777	9	.022

Table 7

➤ Interpretation

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of INDUSIND bank.

8. YES BANK

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	YESPRE - YESPOST	.01873	4.19833	1.32763	-2.98457	3.02204	.014	9	.989

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	YESPRE - YESPOST	-.24350	1.53079	.48408	-1.33856	.85156	-.503	9	.627

Table 8

➤ Interpretation

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of YES bank.

9. BANK OF BARODA

Paired Samples Test DEMONETIZATION									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BOBPRES - BOBPOST	-1.53058	4.96491	1.57004	-5.08226	2.02110	-.975	9	.355

Paired Samples Test GST									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BOBPRES - BOBPOST	-.66750	2.56823	.81215	-2.50470	1.16970	-.822	9	.432

Table 9

➤ Interpretation

Since the level of significance is more than 0.05, we accept null hypothesis and therefore, there is no significant impact of DEMONITIZATION and GST announcement on Abnormal Return (AR) of BANK OF BARODA.

VI. CONCLUSION

The research findings depict that there was no significant impact of the announcement in the selected time period. There was no significant correlation or difference between the pre and post period of each announcement.

The analysis of the duration of impact of the announcement show that there is an extremely short term impact of the announcement on the stock price behaviour. In most cases, the stock prices noticed a change only within the first two days after the announcement.

All the companies selected from the listed BSE index of banking sector, but the returns of the companies follow a few similar trends after the announcement of event. There is no difference between the public and private banks movements and all show a no significant impact due to the announcement.

Therefore, the study concluded that there were no long-term wealth creating projects in the banking industry for investors at the Bombay Stock Exchange since there was no significant or sustainable influence on share returns.

SUMMARY

The study undertaken is to determine the IMPACT OF DEMONITISATION AND GST ON THE ECONOMY in the Indian banking industry pre and post the announcement of a demonetisation and GST. It also aims to find the paired sample statistics between both the periods and the magnitude and duration of impact of the these event announcement on the stock price behaviour. After determining the stock price behaviour, various trends were The study comprised of 9 selected companies listed on the Bombay Stock Exchange in the banking industry in which six companies were private and three companies were public for the study undertaken for demonetisation and GST. The study also included IDBI another public sector as it has the second most market capitalisation but has not been included in the Bank index in BSE. The index only comprised of two public sector banks but for a better understanding the IDBI bank was chosen to see if the bank outside the index in case of public sector was had a different impact or not. The study was conducted with an intention to find the statistical difference in the 95% confidence interval of the difference among the means before and after the announcement of the event.

The association between the stock price behaviour in both time periods was determined using an event study methodology where abnormal returns were calculated using the CAPM Model. The data used for carrying out this study was obtained from the Bombay Stock Exchange where 2years of data before and after the announcement demonetisation and 1year data before and after the announcement of GST, each, was taken to further the analysis. The pre event occurrence data was used to find out the expected return and from thereon to find out the abnormal returns.

The research findings using Paired sample t-test to depict that in all the companies selected, there was no significant difference in the means of the abnormal returns in the 2years period before and after the demonetisation announcement. Even in the case of GST it was seen that there was no impact on the 1year selected period. Overall, there was no noticeable impact of the announcement in the selected time period.

When there is a comparison between both the demonetization and the GST it was found out that even though these were a major events which occurred in the last three years and created an impact looking at the effect on the business people in case of money supply, but in the case the banking industry we could see that due to the demonetization there wasn't any significant impact in all the case. As a whole the banking industry did not have an impact due to to the demonetisation but it had followed the similar trend except for a particular day after the day of the announcement. There was a continuous negative trend before the occurrence of the event and only on a particular day after the event the return were highly positive but it had immediately gained backed the previous trend before the announcement that is of negative trend. The positive

return on a particular day after the event can be due to some other reasons and not only because of demonetization. The returns being positive can also due to increase in the market demand and supply of the stocks.

When it comes in the case of GST, it can be seen that these companies had an negative trend from the 10th day previous to the day of the occurrence of the event. The abnormal return below zero and it had streak for about - 10th day to 1st day after the occurrence the event. From the 2nd day onwards we could see that the abnormal returns were positive but later the had returned to negative trend and again next to positive return. The abnormal returns were after the occurrence of the event had quite a bit of fluctuations as they didn't have particular trend to be followed. The GST introduction had created a quite a bit of hassle in the market as the tax system had changed and every business had a must to implement these. The prices of products varied after levying the final GST on the bill. The bill amount had actually seen an increase in overall amount.

The analysis of the duration of impact of the announcement show that there is an extremely short term impact of the announcement on the stock price behaviour. In most cases, the stock prices noticed a change within the first few days of the announcement, after which the prices gradually normalised to the original pattern where the announcement no longer had any impact on the stock price behaviour. The normal market forces and business conditions would continue to have an impact on the regular trading, but the impact of the announcement is very short lived. Hence, the means between the pre and post period are not statistically significant as the change in patterns is only in the initial period which cause slight variances.

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