Impact of Demonetization on Indian Stock Market: With Special Reference to Sectoral Indices in National Stock Exchange of India

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ABSTRACT: Demonetization is the act of stripping a currency unit of its status as legal tender. It occurs whenever there is a change of national currency. To change this practice of cash circulation a sudden move has taken by our honorable Prime Minister Mr. Modi on November 8, 2016 regarding demonetization of two highest currency denominations of our country. The Government of India announced the demonetization of all 500 and 1,000 banknotes. This move is taken to support cashless economy & to put a check on black currency in our circulation. This incidence impacted almost all the sectors of our economy. That day biggest fall was observed in Indian equity market in comparison to other Asian market. Apart of this there was a down ward trend observed in almost all the sectoral indices. It means all the sectors got affected by demonetization process. The main objective of this paper is to know the Impact of Demonetization on Indian Stock Market. The secondary data was mainly collected from RBI's web site and nseindia.com. This study covers a period of only 15days, 7 days, 5 days and 3 days before and after 8-november-2016. We used Pair sample t-test and regression to analyze the data.

Keywords: Demonetization, Cashless, NSE, Sectors, Pair sample t-test

I. INTRODUCTION

Recently, the Indian government took a bold step of demonetization and declared that five hundred and one thousand rupee notes of Gandhi series would no longer be legal tender from midnight, 8th November 2016. The Purpose of this move was explained to eradicate the corruption, money laundering and aid to terrorists. It is not first time when demonetization happened in India. Before this, it was carried out twice, in 1946 and 1978. Though, this transformation step is not acceptable to many people for problems being faced after demonetization. But experts are ensuring that it will contain pain only in short run. The decision contains so good consequences in near future. For now, it has made severe contraction in money supply and decreased the demand in various sectors. The money supply will pick up after circulation of new notes in the market. The demand in various areas i.e. Consumer goods, Real Estate and Property, Gold and luxury goods, Automobiles (only to a certain limit)etc. affected to an extent. As a consequence, price level would decrease marginally for moderation in demand as use of cards and cheques would compensate for some transactions. The majorly affected area is real estate and property where a major part of transactions is based on cash. Other than these areas there are certain sectors of the economy depict by the Nifty sectoral indices that have been taken in this study for analyzing the impact of demonetization. Nifty sectoral Indices represent different sectors of the Indian economy. These indices represent performance of the companies representing movements in particular sector. This study has been done to analyze the demonetization effect on these various Nifty sectoral Indices in India.

II. REVIEW OF LITERATURE-

Chatterjee and Banerji (2016), discussed the general impact of demonetization on Indian economy and specific impact on various sectors. As per them the demonetization of 500 and 1000 notes will have significant and immediate impact on Indian economy. Demonetization resulted into increase in bank's deposit level due to more number of deposits with banks. Further financial savings are expected to increase as a result of shift from unproductive physical asset based savings to interest bearing financial assets. This in turn is expected to increase the banks liquidity position, which can be leveraged by them for lending purposes. As the demonetization is expected to result in low preference for informal funding sources, the real estate sector is expected to have an adverse impact in terms of demand. Luxury property rates are expected to fall as result of fewer purchasers with substantial liquidity. The demonetization measures are also expected to affect the cash transactions in Automobile Industry, predominantly in auto ancillary and two wheelers industry.

Sectorial indices get affected by various macroeconomic factors. One of such studies is by **Tripathi et al (2014**), who examined the relationship among the macroeconomic factors and selected sectorial indices. The factors they considered are exchange rate, FII, current account balance, foreign exchange reserves, and crude oil. Relationship of these factors was examined with the selected sectorial indices at National Stock Exchange (NSE) viz. CNX Auto, CNX Bank, CNX IT, CNX Energy and CNX FMCG. Monthly observations for the period April 2005 to March 2013 were taken and analyzed by using multiple regressions. Results revealed that FII affects all sectorial indices while other variables selectively affect different sectorial indices in India.

III. METHODOLOGY:

As the current empirical study was causal in nature, the data for the purpose of the study was dependent on secondary sources. For the purpose of the study of NIFTY AUTO and NIFTY BANK is selected. The data is collected for the time period of 15 days pre and post event (Demonetization) 8 November 2016.

3.1 Objective

- The objective of the research study is to examine the impact of demonetization on selected sectoral indices of NSE.
- Explore the sectoral movement of NSE indices.
- To find out impact of this move in short run on different sectors of our economy.
- To examine the demonetization effect on the volatility of the sectors.
- To examine the demonetization effect on performance of the sectors.

3.2 Analytical Tools-

Hypotheses have been tested by applying paired T-test.

3.3 Research Hypothesis

Ho: there is no significant impact of demonetization on stock prices.

H1: there is significant impact of demonetization on stock prices.

IV ANALYSIS AND INTERPRETATION

NIFTY BANK (3 days before and after event)

H0: There is no significant impact of demonetization on points of the index.

H1: There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	19197.6	19819.1
Variance	22454.01	121117.1
Observations	3	3
Pearson Correlation	-0.57722	
Hypothesized Mean Difference	0	
Df	2	
t Stat	-2.38466	
P(T<=t) one-tail	0.06994	
t Critical one-tail	2.919986	
P(T<=t) two-tail	0.13988	
t Critical two-tail	4.302653	

Here the 't-tabulated ' value is 4.302653 and 't-calculated ' value is -2.38466.

According to the hypothesis rule, if t-tab value is greater than the t-cal value then the null hypothesis is accepted .So we can say that there is no significant impact of demonetization on the nifty bank index pre and post 3 days.

NIFTY BANK (5 days before and after event)

H0: There is no significant impact of demonetization on points of the index.

H1: There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	9958.19	9326.7
Variance	8501.312	211060.9
Observations	5	5
Pearson Correlation	0.884691	
Hypothesized Mean Difference	0	
df	4	
t Stat	3.713198	
P(T<=t) one-tail	0.010298	
t Critical one-tail	2.131847	
P(T<=t) two-tail	0.020596	
t Critical two-tail	2.776445	

Here the 't-tabulated ' value is 2.776445 and 't-calculated ' value is 3.713198..

According to the hypothesis rule, if t-tab value is less than the t-cal value then the null hypothesis is rejected. .So we can say that there is significant impact of demonetization on the nifty bank index pre and post 5 days.

NIFTY BANK (7 days before and after event)

H0:There is no significant impact of demonetization on points of the index.

H1:There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	19336.97	19414.58
Variance	35439.08	192819.3
Observations	7	7
Pearson Correlation	0.712311	
Hypothesized Mean Difference	0	
df	6	
t Stat	-0.61771	
P(T<=t) one-tail	0.279734	
t Critical one-tail	1.94318	
P(T<=t) two-tail	0.559468	
t Critical two-tail	2.446912	

Here the 't-tabulated ' value is 2.446912 and 't-calculated ' value is -0.61771.

According to the hypothesis rule, if t-tab value is greater than the t-cal value then the null hypothesis is accepted . .So we can say that there is no significant impact of demonetization on the nifty bank index pre and post 7 days.

NIFTY BANK (15 days before and after event)

H0:There is no significant impact of demonetization on points of the index.

H1:There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	19485.1	18890.29
Variance	48586.57	351834.5
Observations	15	15
Pearson Correlation	#N/A	
Hypothesized Mean Difference	0	
df	14	
t Stat	4.362457	
P(T<=t) one-tail	0.000325	
t Critical one-tail	1.76131	
P(T<=t) two-tail	0.00065	
t Critical two-tail	2.144787	

Here the 't-tabulated ' value is 2.144787 and 't-calculated ' value is 4.362457 .

According to the hypothesis rule, if t-tab value is less than the t-cal value then the null hypothesis is rejected . .So we can say that there is no significant impact of demonetization on the nifty bank index pre and post 15 days.

NIFTY Auto (3 days before and after event)

H0:There is no significant impact of demonetization on points of the index.

H1:There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	9903.867	9628.75
Variance	1596.766	77966.33
Observations	3	3
Pearson Correlation	0.349738	
Hypothesized Mean Difference	0	
Df	2	
t Stat	1.778856	
P(T<=t) one-tail	0.108615	
t Critical one-tail	2.919986	

NIFTY Auto (5 days before and after event)

H0:There is no significant impact of demonetization on points of the index.

H1:There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	9958.19	9326.7
Variance	8501.312	211060.9
Observations	5	5
Pearson Correlation	0.884691	
Hypothesized Mean Difference	0	
df	4	
t Stat	3.713198	
P(T<=t) one-tail	0.010298	

P(T<=t) two-tail	0.217231	
t Critical two-tail	4.302653	

Here the 't-tabulated ' value is 4.3026553 and 't-calculated ' value is 1.778856.

According to the hypothesis rule, if t-tab value is greater than the t-cal value then the null hypothesis is accepted. .So we can say that there is no significant impact of demonetization on the nifty auto index pre and post 3 days.

t Critical one-tail	2.131847	
P(T<=t) two-tail	0.020596	
t Critical two-tail	2.776445	

Here the 't-tabulated ' value is 2.776445 and 't-calculated ' value is 3.713198.

According to the hypothesis rule, if t-tab value is less than the t-cal value then the null hypothesis is rejected .So we can say that there is significant impact of demonetization on the points of nifty auto index pre and post 5days

NIFTY Auto (7 days before and after event)

H0:There is no significant impact of demonetization on points of the index.

H1:There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	9985.164286	9218.992857
Variance	7795.346429	174931.2029
Observations	7	7
Pearson Correlation	0.72159244	
Hypothesized Mean Difference	0	
Df	6	
t Stat	5.634458591	
P(T<=t) one-tail	0.000668931	
t Critical one-tail	1.943180274	
P(T<=t) two-tail	0.001337862	
t Critical two-tail	2.446911846	

Here the 't-tabulated ' value is 2.446911846 and 't-calculated ' value is 5.634458591.

According to the hypothesis rule, if t-tab value is less than the t-cal value then the null hypothesis is rejected .So we can say that there is significant impact of demonetization on the points of nifty auto index pre and post 7days.

NIFTY Auto (15 days before and after event)

H0:There is no significant impact of demonetization on points of the index.

H1:There is significant impact of demonetization on points of the index.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	10042.02333	9030.127
Variance	9854.004952	118454.3
Observations	15	15
Pearson Correlation	0.301407217	
Hypothesized Mean Difference	0	
df	14	
t Stat	11.94118453	
P(T<=t) one-tail	4.98099E-09	
t Critical one-tail	1.761310115	
P(T<=t) two-tail	9.96198E-09	
t Critical two-tail	2.144786681	

Here the 't-tabulated ' value is 2.144786681 and 't-calculated ' value is 11.94118453.

According to the hypothesis rule, if t-tab value is less than the t-cal value then the null hypothesis is rejected .So in this case, there is significant impact of demonetization on the points of nifty auto index pre and post 15days.

V. FINDINGS AND CONCLUSION

The purpose of the study was to determine the impact of Demonetization on Stock Market of India. Result from the Ordinary Least Square support that demonetization or withdrawal of higher denomination currency has a significant impact on the Stock market for the Indian economy. In all the case nifty bank and nifty auto (3, 5,7,15 days) the result of Paired T test for nifty auto and nifty bank index (dependent variable) is significant. Therefore the researcher failed to accept the null hypothesis. This means that there is significant impact of demonetization (independent variable) except for very short span of time for 3 days where in both the indices there was no significant impact on the indices.. Here the values are higher than table value which shows that null hypothesis are rejected in 5 days, 7 days and 15 days period cases which indicates that demonetization have significant impact on the NIFTY auto and NIFTY bank indices.

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