Impact of Demonetisation on Indian Stock Market

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ABSTRACT
Demonetisation is the act of divesting a currency unit of its status as legal tender. It is a tool to handle black money in the economy by lowering the cash circulation in the country which is directly concerned with the corruption. It directly or indirectly influences the various sectors. The effect of taking out so much money from the market is obviously affect the various sectors, which are driven by the black economy like real estate, construction, etc. But this move of government has also affected few sectors that are driven by cash. The move of demonetisation has affected the Purchasing power. The stock market is impacted by two types of risk: systematic and unsystematic risk. The Demonetisation represents systematic risk spread across the Indian stock market with all the shares and benchmarks representing its magnitude of affect. This research paper is trying to analyse the impact of demonetisation on the Indian Stock market. This study is using Event Study Methodology and Granger Causality test to analyse the impact of various sectors (Nifty Bank, Nifty Pharma, Nifty FMCG and Nifty Realty) on the NIFTY50 index during the Demonetisation Period. The Period for the study has been taken from 1/4/2016 to 7/11/2016 and 8/11/2016 to 31/3/2016. The result is being observed from the comparison of both pre and post-event window.

1. Introduction

“Demonetisation is an act of cancelling the legal tender status of a currency. On 8th November 2016, the Government of India announced the demonetisation of all 500 and 1000 banknotes.” The sudden nature of the announcement and the prolonged cash shortages in the weeks that followed created significant disruption throughout the economy, threatening economic output. A resultant impact on stock market was also well expected.

The shortage of money and reduced purchasing power lead to decline in the performance of various sectors. The sectors which faced the blow of demonetisation are Banking, Automobiles, Cement, FMCG, Pharmaceutical, Real estate and Agriculture.

Demonetisation in India and the US Presidential Election affected the Indian stock market, where market Indices dropped to 6 months low in the week following the announcement of demonetisation. BSE and NIFTY both crashed around 1689 and 541 points respectively in that week. Hence there is a need to understand how much the demonetisation has affected the Indian stock market.

2. Literature Review

The stock market is impacted by two types of risk: systematic and unsystematic risk. The Demonetisation represents systematic risk spread across the Indian stock market with all the shares and benchmarks representing its magnitude of affect. The demonetisation which took place on the 8th of November 2016, where Hon’ble PM Narendra Modi made an announcement that the promissory notes of INR. 500/- and INR. 1000/- will cease to be a legal tender. The Reserve Bank of India’s Annual report Saha, (2017) recorded that as much as INR. 15.28 Lakh Cr. was demonetized.

A, Apr (2017), in his paper reflected the policies and strategies of the government in the context of demonetisation. She said the demonetisation process is like a two face of a coin i.e., it has both advantage and disadvantage in the economy of the country. Demonetisation will generate long term benefit for the nation.

Kalaimani, et al. (2016), studied the impact of the demonetisation on the Indian economy and concluded that the demonetisation drive will affect some extent to general public but for the larger interest of the economy such decision is unavoidable.

Ganesan, et al., (2017), examined the impact of the demonetisation on Indian Economy on the parameter of the Gross Domestic Product (GDP) and Gross Value Added (GVA) in which he concluded that the demonetisation decreased the GVA and had adversely impacted the different sector of the economy except the agricultural sector.

Pradhan, et al., (2017), reviewed how the demonetisation will drive the development of the Indian economy and study the impact of demonetisation on the society. The paper disclose that the demonetisation helps to bring the black money back to the system, stoppage of threat of fake currencies, end of terrorist and Naxalites funding, to take step towards digital or cashless economy.

Kumar (2017), studied the demonetisation and cashless banking transaction where he examines the electronic payment
based system in India and the usage of such system. In which he finds that cashless transaction system is growing day by day and as the market become globalised and banking sector is improving and more people will shift from cash to cashless payment system. (Ahmad, Jul-Sep 2017), reviewed the influence of money in circulation on selected banking online transaction before and after demonetisation period, the study concluded that money circulation through electronic way has increased during the demonetisation and after demonetisation.

Mukherjee, et al., (Feb 2016), analysed the domestic (specifically) and international variable on the Indian Stock Market, in which the relationship is also studied. The finding that the institutional investor had significant influence on the Indian Stock Market after 2008 crisis, Gold Market have some bearing in the equity market, return significantly led by the domestic, and the international interest rate. Likewise, Sah, (2016), examined the days of the week that affect the return on the NIFTY, weekend effect on NIFTY, seasonality of monthly return. The paper founded that daily and monthly seasonality are present in NIFTY. Using data on daily basis the Friday effect the NIFTY and in months July, September, December, and January were statistically significant. Therefore, this concluded that Indian Stock Market are not efficient and investor can increase the return on the basis of seasonality factor.

Shah, et al., (Dec 2016), in the CARE report which took the period of 1/10/2016 to 8/11/2016 and then 8/11/2016 to 23/12/2016. The study shows that the BSE SENSEX decline by around 5.6% whereas IT and energy index has positive increase as compare to another sector which decline. The sector which have most impact of demonetisation was Consumer durables, Auto segment, FMCG, Basic metal stock and Banking stock.

Mr. Sunil T, (2017), analysed the impact of demonetisation on stock prices of 5 selected sectors, Automobiles, Banking, Consumer Durables, Telecommunication and Real Estate. The period of the study was from 7/9/2016 to 8/3/2017. Realised return, CAPM Return and BHAR analysis has been carried out in the study. Using ANOVA on the BHAR in the three windows, it was concluded that demonetisation had no impact on stock returns during the study period.

Kaushik, et al., (June 2017), analysed the impact of the demonetisation on the S&P BSE 100. This research study that there is no significant impact of the demonetisation on the S&P BSE 100. There is an impact for the shorter duration but soon they recovered it.

Bharadwaj, (May-June 2017), studied the impact of the demonetisation on the 16 companies from the National Stock Exchange. Taking the 16 companies on the basis of random sampling. The study found that there is no correlation in the companies which have arrived before and after demonetisation, so there is an impact of the demonization on the Indian Stock Market.

Iyengar, et al., (Sep 2017), researched the impact of the demonetisation on Indian stock market; primarily focus is on FMCG sector, Banking sector and automobile sector where NIFTY act as an indicator for this sector. The study selected only 7 companies of from the three sector and data is related to 30 days before and 30 days after demonetisation. The outcome of study was announcement of the demonetisation had an impact on capital market due to price movement.

From the above literature review it can be concluded that there are very few specific research done on the both the important index of stock market i.e. BSE SENSEX and NIFTY 50. The research has been done, but it has either done on a different index like that of Kaushik & Chauhan, June, (2017) which is based on S&P BSE 100, or of taking particular number of stock as of Bharadwaj, May-June (2017), or it is done by taking particular sector as of Iyengar, Iyengar, &Aswani, (Sept-2017). Therefore, it is viable to conduct research on the impact of demonetisation on the Stock market.

3. Objective

This study is undertaken with an objective to determine the impact of demonetisation on the Indian Stock Market by considering the five sectoral Indices include Nifty FMCG, Nifty Pharma, Nifty Realty and Nifty Bank.

4. Data and methodology

This paper aims to study the impact of Demonetisation on the Indian stock market. In order to facilitate the study 5 Indices including the Nifty 50 Index have been selected. The sectoral Indices include Nifty FMCG, Nifty Pharma, Nifty Realty and Nifty Bank. Nifty 50 Index have been selected to represent the overall market. Data for 6 months Pre and Post demonetisation starting from 1 April 2016 to 31st March 2017 has been used for analysis. The daily data for 5 Indices have been collected from NSE’s official website http://www.nseindia.com/. In order to identify the presence of Unit root Augmented Dickey Fuller Unit root test was performed. And then Granger Causality test was performed to evaluate the cause and effect of indices on the overall market at that period of time. These tools were also used by R &Makhariya, (2017) to study the impact of sectoral indices on the nifty. The results for the test were obtained by EVIEWS statistical software package.

5. Results and inferences

This section presents the results in two difference aspects i.e. the movement of stock return during the pre-demonetisation period first followed by results of the post demonetisation period.

5.1 Pre Demonetisation

In econometrics unit root test is performed to find whether the data is stationary or non-stationary. In order to perform Granger Causality test it’s a prerequisite that the data must be stationary at level. In this test the null hypothesis is sated as the data has a unit root test and alternative hypothesis is that the data is stationary. There are two ways to test the data i.e., based on t-statistic and based on probability. In t-statistic
method if the t-statistic coefficient is smaller than the critical value in absolute value then the null hypothesis is accepted and the data is considered to be non-stationary and vice versa. In the probability method if the probability coefficient is greater than 0.05 then the null hypothesis is accepted and vice-versa. This test forms as the foundation for the Granger Causality test. This is because; Granger Causality test can only be performed if all the variables are stationary.

5.1.1. Stationarity Test

<table>
<thead>
<tr>
<th>INDEX</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nifty 50</td>
<td>-11.10367</td>
<td>0.0000</td>
</tr>
<tr>
<td>Nifty FMCG</td>
<td>-9.971577</td>
<td>0.0000</td>
</tr>
<tr>
<td>Nifty Realty</td>
<td>-8.722711</td>
<td>0.0000</td>
</tr>
<tr>
<td>Nifty Pharma</td>
<td>-11.77722</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

**Table 1: Augmented Dickey Fuller Test statistic**

As can be seen in the table 1 and figure 1, the probability value is less than 0.05 (p<0.05), so we reject the null...
hypothesis, thus stating that the data is stationary and can be used to do further analysis.

5.1.2. Granger causality test

The data for 5 indices including the nifty were analysed using pair wise granger causality test. The test gave 4 pairs of results. Table 2 reveals those pairs. The pairs give 3 types of results i.e., unidirectional relationship, bidirectional relationship or no relationship.

The rationale behind the interpreting is adopted from the user guide of the EVIEWS which stated that if probability is greater than 0.05 then the null hypothesis cannot be rejected and if the probability is lesser than 0.05 then the null hypothesis can be rejected.

Table 2: Granger Causality Test

<table>
<thead>
<tr>
<th>Pairwise Granger Causality tests</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nifty FMCG returns does not Granger cause Nifty50 returns</td>
<td>145</td>
<td>1.60298</td>
<td>0.2050</td>
</tr>
<tr>
<td>Nifty50 Returns does not Granger Cause Nifty FMCG returns</td>
<td>1.09016</td>
<td>0.3390</td>
<td></td>
</tr>
<tr>
<td>Nifty PHARMA returns does not Granger cause Nifty50 returns</td>
<td>145</td>
<td>2.80872</td>
<td>0.0637</td>
</tr>
<tr>
<td>Nifty50 Returns does not Granger Cause Nifty PHARMA returns</td>
<td>0.27333</td>
<td>0.7612</td>
<td></td>
</tr>
<tr>
<td>Nifty REALTY returns does not Granger cause Nifty50 returns</td>
<td>145</td>
<td>3.33087</td>
<td>0.0386</td>
</tr>
<tr>
<td>Nifty50 Returns does not Granger Cause Nifty REALTY returns</td>
<td>2.62519</td>
<td>0.0760</td>
<td></td>
</tr>
<tr>
<td>Nifty BANK returns does not Granger cause Nifty50 returns</td>
<td>0.00236</td>
<td>0.9976</td>
<td></td>
</tr>
<tr>
<td>Nifty50 Returns does not Granger Cause Nifty BANK returns</td>
<td>0.06656</td>
<td>0.9356</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen in table 2, since the probability value of all observations except Nifty Realty are more than 0.05 or 5%, we fail to reject the null hypothesis in all situations thus stating that there exists no univariate or bivariate granger cause between the pairs under test.

In the case of Nifty Realty returns and Nifty50 returns, the Probability value is less than 0.05 (p<0.05), so we reject the Null hypothesis, thus stating that there exists univariate granger cause between Nifty Realty and Nifty 50 Returns.

5.2 Post Demonetisation

This section presents the results of the Post Demonetisation period.

5.2.1. Stationarity Test
As can be seen in the table 3 and figure 2, the probability value is less than 0.05 (p<0.05), so we reject the null hypothesis, thus stating that the data is stationary and can be used to do further analysis.

5.2.2 Granger causality test

As can be seen in the table 4, since the probability value of all observations except Nifty Bank are more than 0.05 or 5%, so we fail to reject the null hypothesis in all situations thus stating that there exists no univariate or bivariate granger cause between the pairs under test.

In the case of Nifty Bank returns and Nifty50 returns, the Probability value is less than 0.05 (p<0.05), so we reject the Null hypothesis, thus stating that there exists univariate granger cause between Nifty Bank and Nifty 50 Returns.

6. Scope for further study

The Period of study can be extended up to a period of 1 year post demonetisation and it can also be extended to all the sectors. Also, macro-economic factors during the period, which could have had an impact on the stock prices, could be considered. Also, impact of US Presidential election during the same period which could have had an impact on the Indian stock market, could be considered.
7. Conclusion

The Primary objective of this paper was to study the impact of demonetisation on the Indian Stock market. The tests conducted gave a connecting picture of pre and post demonetisation which after interpretation gives a larger picture. In order to perform Granger Causality test it's a prerequisite that the data must be stationary at level. And through the unit root test, we found the data to be stationary at level.

The Pre Demonetisation results reveal that Realty Sector had a uni-directional relationship with Nifty50, Suggesting that the Nifty50 was highly dependent on the performance of the Realty sector while all the other pairs had neither un-directional nor bi-directional relationship. While the Post Demonetisation results reveal that Banking sector had a uni-directional relationship with Nifty50, suggesting that the Nifty50 was highly dependent on the performance of the Banking Sector while all the other pairs had neither un-directional nor bi-directional relationship.

The greatest problem that banks faced due to demonetisation is that it affects the quality of the assets of the banks in the form of loans given to different sectors. As P. Maheshwari, &Preety, 2017 in his article said that top bankers just recovered Rs. 7099 crores in the quarter ended December 2016 as against Rs. 10177 crores for the quarter ended September 2016. Another important impact of demonetisation is reduction in the demand for credit in the Mid Corporate Advances and MSME (Micro, Small and Medium Enterprise) Advances.

While the blow of demonetisation bought a short term downfall in some of the sectors of the market because of the negative sentiments of the investors, the other sectors remained unaffected which leads to a conclusion that there was no significant impact of Demonetisation on the Indian Stock market.

References