

# An Analysis on the Impact of Demonetization on Sector Indices of the Bombay Stock Exchange

P. B. Saranya, S. Poornima

**Abstract:** On November 8th, 2016, Government of India announced its decision to discontinue the legal tender status of Rs 500 and Rs 1000 notes. The primary objectives to discontinue were eliminating fake currency notes, inflicting losses out of black money and disrupting terror activities. Later, it tacked on: turning India into a less cash economy and enabling growth in bank credit. The barometers of Indian stock markets BSE SENSEX and NIFTY dropped down by 300 and 90 points respectively the next day of the announcement. The Nifty Realty and BSE Realty index gapped down after the day of the demonetization by 11% & 8% respectively. The Nifty Bank and BSE Bankex Index dropped by 5.3% and 5 % respectively. This paper attempts to measure the impact of demonetization on several stock sectors. Among the 19 sector indices of the Bombay Stock Exchange, 14 were selected for analysis. The study reveals that the sector returns and volatility prior and post demonetization do not have high fluctuations. Though some of the indices dropped the next day, they recovered.

**Keywords:** Demonetization, Stock Markets, Stock returns.

## I. INTRODUCTION

On November 8th, 2016, Government of India announced demonetization of 500 and 1000 rupee notes with an objective to eliminate fake currencies, black money and terrorism. National Investigation Agency and the Indian Statistical Institute, in 2016, conducted a survey and estimated that fake Indian currency notes in circulation have a face value of Rs. 400 crore, the amount of cash seized during raids by income tax authorities is 4.88% of total undisclosed income admitted in those cases. In general, demonetisation can't be seen as a tool for dealing with counterfeiting. The Indian stock markets envisioned a bearish trend in several stock prices as a result of demonetization. The US presidential elections results followed by demonetization blocked the recovery of Indian

The prompt effect of expelling such a great amount of cash is obviously the effect it can have on a few areas that are driven by the dark economy like real estate, construction etc., Since Real Estate is considered to be driven by black economy, this sector envisioned a worst hit compared to all the sectors. The Nifty Realty and BSE Realty index gapped down after the day of the demonetization by 11% & 8% respectively. The infrastructure sector is driven by massive investments from government and loans from banks. Demonetization is expected to create a healthy effect in this sector by increasing the liquidity in the banking system

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The Nifty Bank and BSE Bankex Index dropped by 5.3% and 5 % respectively. The Banking sector took an immediate hit the day after the announcement but recovered on Nov 10th. This is one sector which is expected to benefit in the long run because a lot of the black money will be deposited and the excess funds will address the non-performing assets (NPA) problem faced by bankers. The Information technology industry an export oriented industry is expected to be an unaffected industry. But on the day after the announcement the Nifty IT and BSE IT index dropped by 5% & 4% respectively.

## II. LITERATURE SURVEY

Partap & Virender (2016) analysed the impact of demonetization on the Indian economy and concludes that if the money disappears, the economy will not be benefited. On the other hand it could have a meaningful impact. Experiences from different countries shows that demonetization has failed to fix a debt-burdened and inflation-ridden economy. Partap (2013), discusses the effect of depreciation of money on the economy and has concluded that, the Indian economy has more to lose and less to gain with depreciation of rupee in long run.

Hardouvelis (1987), in the study he identifies that Stock prices primarily respond to announcements of monetary variables. Stocks of banks and financial companies are more sensitive than other sectors. In this study 15 macro-economic variables that is both monetary and non-monetary variables were considered. The study also reveals that 4 macroeconomic monetary variables highly influence the stock markets than the non-monetary variables. Schweet (1981) in his study aims in understanding the behaviour of stock markets in accordance inflation. He measures the Consumer price index and the standard and por's composite portfolio and has revealed that the stock markets responds high when there is an unexpected changes in inflation of the CPI. He concludes that stock markets strongly react to the unexpected inflation rates.

Fama & Fisher (1969) has studied how stock prices respond to new information's such split off, dividends, etc., and have concluded that on the average the market's judgments concerning the information implications fully reflected in the price of a share most probably almost immediately after the announcement date. His study reveals that stock prices strongly react to the various information's.

## III. OBJECTIVES OF THE STUDY

- To analyse the impact of demonetization on selected stock sectors with respect to their returns
- To measure the level volatility in selected stock sectors

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## A. Research Methodology

**Research Design:** The research design adapted is descriptive design since, the nature of the study describes how stock markets responds to announcements.

**Sample:** For the study 14 sector indices were chosen among the 19 sector and industry indices of the Bombay Stock Exchange.

**Data:** The nature of data used for analysis is secondary and was collected from the official website of Bombay Stock Exchange.

**Period of Study:** The period of study is 9th September, 2016 to 8<sup>th</sup> January, 2017. Pre and post demonetization impact has been analysed.

### Tools used for Analysis:

Average Daily Returns is calculated using the formula:

$$\text{Average Returns} = [ ( P_1 - P_0 / P_0 ) * 100 ] / N$$

Standard Deviation is a measure of unsystematic risk. Unsystematic risk, also known as "specific risk," "diversifiable risk" or "residual risk," is the type of uncertainty that comes with the company or industry you invest in. Unsystematic risk can be reduced through diversification. For example, news that is specific to a small number of stocks, such as a sudden strike by the employees of a company you have shares in, is considered to be unsystematic risk.

Correlation coefficient is a measure that determines the degree to which two variables' movements are associated. The range of values for the correlation coefficient is -1.0 to 1.0. A correlation of -1.0 indicates a perfect negative correlation, while a correlation of 1.0 indicates a perfect positive correlation.

Beta is a measure of systematic risk. Systematic risk, also known as "market risk" or "un-diversifiable risk", is the uncertainty inherent to the entire market or entire market segment. Also referred to as volatility, systematic risk consists of the day-to-day fluctuations in a stock's price. Volatility is a measure of risk because it refers to the behavior, or "temperament," of your investment rather than the reason for this behavior.

## IV. RESULTS AND DISCUSSIONS

This paper investigates the fluctuations in stock returns before and after the announcement to discontinue the legal tender of Rs.500 and Rs. 1,000 by the Government of India. Many research studies indicates that stock markets responds to new information's such as dividend, earnings, inflation, budgets, etc., Likewise this paper attempts to analyse measure how Indian stock market responds to new information.

**Table 1: Return, Risk and Correlation Before and After the Announcement of Demonetization**

Stock Sector	Average Return		Standard Deviation		Correlation	
	PRIOR	POST	PRIOR	POST	PRIOR	POST
BSE AUTO	-0.066	-0.080	1.082	1.563	0.808	0.774
BSE BANKEX	-0.113	-0.064	1.062	1.386	0.909	0.812
BSE CONSUMER DURABLES	-0.063	-0.008	1.047	1.459	0.670	0.757
BSE ENERGY	0.078	0.152	0.977	0.974	0.621	0.827
BSE FINANCE	-0.090	-0.097	1.036	1.252	0.954	0.912
BSE HEALTHCARE	-0.157	-0.045	1.221	1.102	0.724	0.757
BSE INDUSTRIALS	-0.091	-0.003	1.193	1.286	0.857	0.896
BSE IT	-0.135	0.089	0.783	1.166	0.246	0.535
BSE METAL	0.111	0.211	1.498	2.105	0.678	0.728
BSE OIL,GAS	0.171	0.148	1.169	1.086	0.568	0.781
BSE POWER	-0.147	0.144	1.143	1.153	0.802	0.766
BSE REALTY	-0.090	0.132	1.877	1.938	0.745	0.686
BSE TELECOM	-0.063	0.124	1.079	1.509	0.606	0.561
BSE UTILITIES	-0.098	0.154	1.116	1.175	0.781	0.783
S&P BSE SENSEX	-0.114	-0.019	0.720	0.883	-	-

Source: Secondary data

It is inferred from the above table, that the BSE Bankex, and BSE IT sectors have started to recover when compared to pre demonetization era. Though their returns are negative, after demonetization their negative average returns has dropped. The sectors such as power, realty, telecom, and

utilities have recovered. Their average daily returns is positive during the post demonetization period. The auto and finance sectors indicate negative returns during both prior and post demonetisation periods.

The energy and metal sectors have recorded positive returns during both the periods. The energy and metal sectors have outperformed when compared with the average returns of the benchmark index.

In line with the benchmark index, the amount of deviation in expected returns is considerably higher in most of the sectors during the post demonetization period. All the sectors are positively correlated with S&P BSE SENSEX and their correlation values are lower than 1. The correlation value between 0 and 1 indicates that two variables that are measured are positively correlated.

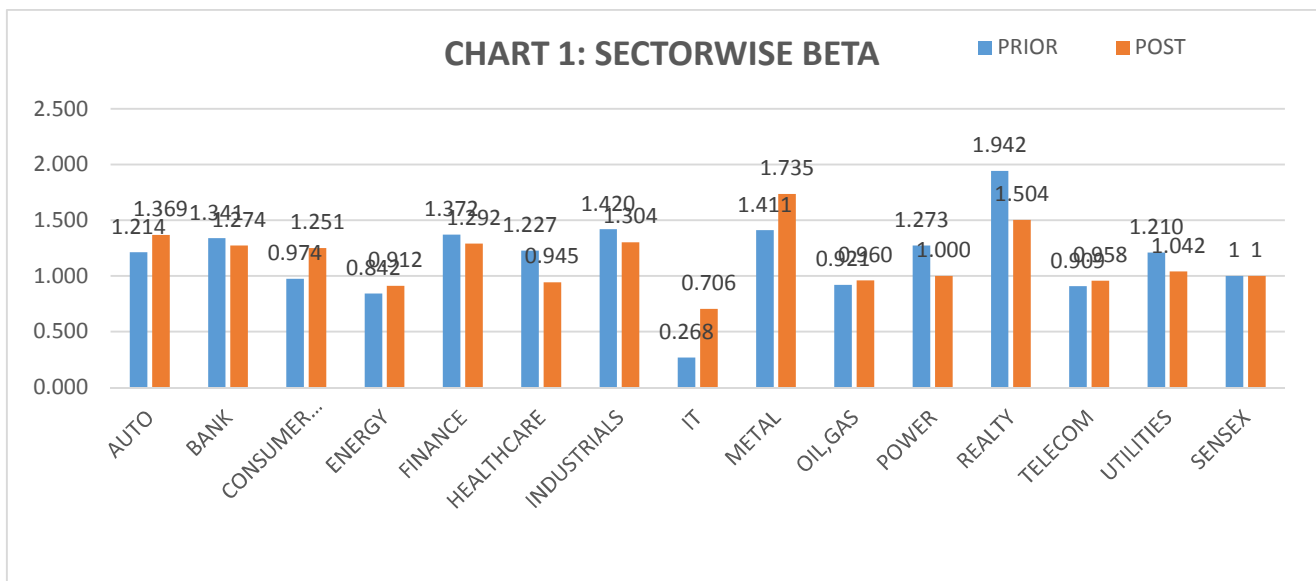
**Table 2: Sector Wise Beta before and After Demonetization**

Indices	Prior	Post
BSE AUTO	1.214	1.369
BSE BANKEX	1.341	1.274
BSE CONSUMER DURABLES	0.974	1.251
BSE ENERGY	0.842	0.912
BSE FINANCE	1.372	1.292

BSE HEALTHCARE	1.227	0.945
BSE INDUSTRIALS	1.420	1.304
BSE IT	0.268	0.706
BSE METAL	1.411	1.735
BSE OIL,GAS	0.921	0.960
BSE POWER	1.273	1.000
BSE REALTY	1.942	1.504
BSE TELECOM	0.909	0.958
BSE UTILITIES	1.210	1.042
S&P BSE SENSEX	1	1

Source: Secondary data

Beta is a measure of systematic risk which indicates the level of volatility among several stocks in line with the benchmark index. From the above table and the chart below, it can be inferred that few sectors such as power, realty, industries and healthcare are some sectors which were less volatile when compared to the other sectors during the post demonetization period. Metal, IT, automobile and consumer durables are those sectors which were measured to be highly volatile during post demonetization period.



## V. CONCLUSION

This paper is an attempt to analyse the impact of stock markets and several sectors to the demonetization announcement. The research indicates some sectors like realty, power, energy, etc., positively respond during both the periods. Some sectors like IT, auto, consumer durables, etc., have shown negative results during both the periods. The level fluctuation between different periods analysed were very low. This indicates that the prompt effect of demonetisation has been observed only for a short run. The sectors have started to recover. Tough the sectors dropped up to 5 % a day after the announcement of demonetization, they have started to recover.

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