IMPACT OF DEMONITIZATION ON SHARE PRICE VOLATILITY: A STUDY ON SBI AND PNBatio

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Abstract

This study measures how the SBI and PNB banks hare price influenced by the demonetization during the study period. The period of study is from 1st December 2016 to 31st November 2018.This study is solely focused on secondary sources like closing stock price of SBI and PNB daily. Here the author considers different statistical tools like ADF test, Descriptive statistics, GARCH model and run test to find out the demonetization effect on volatility of share prices. Here the study reveals that both the banks stock prices are influenced by the demonetization effect. Both banks share prices found normally distributed and followed stationarity. It is concluded that PNB banks stock price is highly volatile in comparison to SBI share prices during the study period

Keywords: Demonetization, SBI, PNB, Volatility, Descriptive Statistics, GARCH (1,1) Model, Run Test.

1. Introduction

Demonetisation is an act of cancelling the legal tender status of a currency. On 8thNovember 2016, the Government of India announced the demonetisation of all 500 and 1000banknotes." This research tests the effect of demonetization on the fluctuations of the share prices of two of India's leading public sector banks. This analysis is solely focused on secondary data, such as the regular closing of SBI and PNB stock prices. In the weeks that followed, the abrupt existence of the declaration and the prolonged currency shortages created considerable instability throughout the economy, crippling economic productivity. The consequent influence on the stock market was also well anticipated.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 demonetization has affected the Indian stock market.According to Harish Damodaran (2016) as per the RBI thetotal bank notes in circulation valued to Rs.16.42 trillion(US\$240 billion) of which nearly 86% (around Rs.14.18trillion (US\$210 billion)) were Rs.500 and Rs.1,000banknotes. In terms of volume, the report stated that 24%(around 22.03 billion) of the total 90266 million banknoteswere in circulation.According to a Bloomberg report, bankswere estimated to have received 14.97 trillion rupees(around \$220 billion) by the December 30 deadline, or 97%of the 15.4 trillion rupees' worth of currency demonetized.

2. Impact on banks

The All India Bank Officers Association (AIBOA) has called for a protest against the challenges faced by demonetization by different banks and their personnel.

Referring out that due to constant changes in RBI/government policies, the banking system itself is losing reputation, AIBOC General Secretary Harvinder Singh said consumer frustration is growing due to uncertainty and misunderstanding generated during the introduction of the mechanism.Team members of banks represent the public and work more hours to fulfil their obligations, which were useless because they have not enough cash to satisfy the customers' prerequisites. The persistent tilt of the government on the exchange and retention of old currency notes in bank branches, in addition to adjusting the cash limits on withdrawals have also created a great deal of uncertainty among individuals. Bankers know banks well but they need not be interested in deposit acceptance inquiries.Additionally, no transparency in this regard, bank officers should be fixed on as they are confronted with a task not required of them. It is valid among these bank staff and officers, there are some black sheep, but only because of that all bank staff and officers should not be painted through one stained brush. In addition to the challenges listed, the employees of the banks have to tackle some badly behaved clients.It is respected that they serve their clients with a smile and even work more hours despite additional salaries. Owing to the shortage of currency notes to banks, public banks officers are exposed to the frustration, anguish and wrath of customers or the general public.

3. Bank Profile

3.1.State Bank of India

It is inarguably the king of the Indian banks. Incorporated in 1955, SBI brags of at least 13,000 branches across India together with at least 190 foreign offices across the continents. It has its headquarters in Mumbai. The banks are popular for its technologically advanced products such as the recently launched SBI in Touch cards that give its users the effective ability to execute payment by just touching or waving their cards near contactless readers. Other than banking products, the bank is also known for offering other services and products mainly in the fields of capital markets, General Insurance and Life Insurance via its subsidiaries.

3.2. Punjab National Banks

Established in 1894, it is the oldest of the big three public sector banks. The bank seems to have a large base in India, with a further 5 overseas branches having at least 6,000 offices scattered throughout the home economy. Its head office is based in New Delhi and reportedly has a population of roughly 62,000 employees. Punjab National Bank seems to be another recipient of the competition, including the Golden Peacock Award winner.

4. Literature Review

The random-walk theory presumes that stock price isuncorrelated with historical prices. It assumes that there is notrend is visible in stock price movements and they are independent. Therefore, the EMH theory suggests thathistorical prices have no predictive capacity over the futureprices. Thus, subsequent price shift should be random (Alexander (1961); Fama, (1965); According to Robin andJessica (2014) an event is aninformational announcement ofany kind which occurrence is assumed to be unexpected bythe market.Dungey, M et al., (2018) Dungey, M et al., (2018) analysed the distribution of tremors amid international banking, local banking and the non-financial segment across eleven European states. The disruptions generated by the non-financial sector have been

shown to have an infectious impact on both the domestic banking system as well to a smaller extent, the global banking sector, thus serving as a source of vulnerability for the financial sector throughout times of hardship.Ganesan, et al., (2017), examined the impact of thedemonetisation on Indian Economy on the parameter of theGross 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 theeconomy except the agricultural sector.Pradhan, et al., (2017), reviewed how the demonetisationwill drive the development of the Indian economy and study theimpact of demonetisation on the society. The paper disclosethat the demonetisation helps to bring the black money back tothe system, stoppage of threat of fake currencies, end ofterrorist and Naxalites funding, to take step towards digital orcashless economy.Li, J, &Meesad, P. (2016), in accordance with the non-compulsory connection among datasuch as stances and remarks, may be used for stock pattern forecast, as per the optional relation between data and stock trend. The complexity of average estimate scores to show the mood of one day is another challenge. In fact, this is induced by the unequal number within one day between positive and negative, so a large susceptibility between opinion and stock trend appears.

5. Objectives of the study

1. Referring to SBI and PNB to see the effect of demonetization on bank stock prices.

2. Comparison of the effect of demonetization on the share prices of SBI and PNB.

6. Research Methodology

As the current empirical study was analytical in nature,the data for the purpose of the study was dependent onsecondary sources. For the purpose of the study BSE SENSEX and closing share prices of SBI and PNB were chosen. Apart from that various secondary sources like journals, research papers, BSE websites, business podcasts, stock market related internet sources, were followed. Here data iscollected for the time period of 2 years i.e. from 1st December 2016 to31st November 2018. To find the results ADF test, Descriptive statistics and GARCH model and Run Test have been considered.

7. Hypothesis

H1: There is exist a normal distribution between stock price of SBI and PNB.

H2: Both the data of SBI and PNB is stationary in nature.

H3: There is a volatility exist between stock price of SBI and PNB.

H4: There is no significant difference in the volatility of stock prices of SBI and PNB due to demonetization impact.

8. Data Analysis and Interpretation

Table – 1: Descriptive Statistics of SBI and PNB

Sample Banks	SBI	PNB
Statistics		
Mean	0.00062	0.00023
Median	-0.00036	0.00069
Maximum	0.27584	0.46198
Minimum	-0.05735	-0.12151
Std. Dev.	0.02142	0.03372
Skewness	4.47547	4.87744
Kurtosis	57.4221	73.89132
Jarque-Bera	62612.13	105401.8
Probability	0	0
Observations	494	494

Source: Author's own calculation in E-Views 10 and BSE Data

During the study period, the share price of the State Bank of India received a high mean value of 0.00062, accompanied by the PNB bank (0.00023), according to the Table-1 review. As regards the unpredictability of stock markets as calculated by the standard deviation of regular returns, it is clear that, relative to the State Bank of India (0.02142), Punjab National Bank has the highest risk value (0.03372). This reflects the fact that during the study time there was a high risk in PNB stock.It is important to remember that speculators have benefited from a high degree of risk, but investors should research the risk of the market and take investment decisions cautiously. The distorted findings show that the prices of both the SBI and PNB banks were pessimistic. It is important to remember from the table above that PNB's kurtosis stock values are greater than SBI, which makes it Leptokurtic.Moreover, the Jarque-Bera (JB) parameters specifically showed that each bank was usually distributed in the study. Yet the research reveals that both banks' stock prices throughout the course of the study were unpredictable. The distribution of daily returns was standard for both banks' stock prices. The H1 theory that there is a standard distribution between the share price of SBI and PNB during the demonetization time has now been accepted.

Table – 2: ADF test of SBI AND PNB

Augmented Dicky Fuller Test for stationarity of data						
Variable		Statistical Value	P-Value	Critical Value	Durbin Watson Test	R-Squared
	1%	-22.0706	0	-3.44339		
SBI	5%	-22.0706	0	-2.86718	1.999929	0.498012
	10%	-22.0706	0	-2.56984		
	1%	-19.8247	0	-3.44339		
PNB	5%	-19.8247	0	-2.86718	1.988383	0.444583
	10%	-19.8247	0	-2.56984		

Source: Author's own calculation in E-Views 10 and BSE Data

It should be remembered that the vital values of the two banks showing the closing rates were -3,44339, -2,86718 and -2,56984, respectively, at substantial percentages of 1%, 5% and 10%. The likelihood values for the closing stock price of SBI and PNB were zero. The P-values of the daily closing stock price of the two banks were zero during the observation period. The R-Square and Durbin Watson test figures have both been approximately 0.50 and 2.00 for the both banks.The t-statisticalcritical values at 1%, 5% and 10% levels are significant as the stock prices of both SBI and PNB were less as per the analysis. As per the Table-2 analysis returns data of both SBI and PNB are stationary in nature throughout theperiod of study. Therefore, thehypothesis H2 both the return data of SBI and PNBare stationary in nature, is accepted.

Table-3: GARCH Model for investigating volatility of SBI and PNB

GARCH Model for SBI and PNB					
Variables	C	α	β	α+β	P Value
SBI	0.0001	0.08096	0.91446	0.99542	0.013
PNB	0.0002	0.06881	0.77214	0.84095	0.041

Source: Author's own calculation in E-Views 10 and BSE Data

Table-3indicates the GARCH (1.1) model analysis which reflect the volatility of daily closing values of returns of SBI and PNB. As per the statistical analysis, it is observed that P-Value was greater than the confidence level 0.01. Both SBI and PNB'sα+ β values during the study was close to one. This concludes that both the banks daily return data is highly influenced by the demonetization and comprises higher. Hence, the hypothesis H3, there is a volatility exist betweenSBI and PNB's share priceafter demonetization period, is accepted.

Table – 4: Run Test of stock prices of SBI and PNB

Run Test	State Bank of India	Panjab National Bank
Actual Run	20	7
N0	43	36
N1	39	46
N	82	82
Expected run	41.90244	41.39024
variance (R)	20.14947	19.64175
std deviation®	4.488816	4.431901
Z statistics	-1.087	-1.75088
p value of Z	0.018519	0.039984

Source: Author's own calculationand BSE Data

The above Table-4 analysis reflects that P value of SBI is less than 0.5 percent. Similarly, P Value of Punjab National Bank is also less than the P-Value 0.05 percent. Both the banks P-Value is lower than the significant level. This reflectsboth the banks stock prices are significantly affected by the Demonetization during the study period. Hence, the H4, there is no significant difference in the volatility of stock prices of SBI and PNB due to demonetization impact is accepted.

9. Conclusion

The study has been done with an objective to find out the impact of demonetization on Indian banks especially on two largest public sector banks SBI and PNB. Asper the statistical analysis and interpretation, it is found that demonetization put significant impact on volatility of share prices of both the banks during the study period. It is also found that normal distribution exists between the share prices of two banks. Here the author is found that demonetization put significant impact on the stock prices of SBI and PNB and by using the GARCH model during the period of study it is concluded that, SBI and PNBboth the banks share prices reflect high volatility. However, in case of PNB, the share price is highly volatile in comparison to the SBI during the period of study from from 1st December 2016 to 31st November 2018.

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