Nexus Between Demonetisation and the Asset Quality of the Commercial Banks: Evidence from India

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Abstract

Demonetisation has affected the Indian economy at large, with a significant impact on the Indian financial sector in general and the banking sector in particular. The instantaneous announcement of the demonetisation not only opened doors of enormous opportunities for the banking sector but also posed a challenge to strategies and improve asset quality. The high level of unanticipated deposits and improved NPAs level left Indian banks with high liquidity to invest in profitable avenues. The study aims to explore the performance of the Indian banking sector in the pre and post-demonetisation and investigates the impact of demonetisation on deposit inflows and the disbursement of funds to assess the overall fund management strategy of the banks in India. The sample data comprises 10 banks, which includes the top five public and private sector banks of India, and covers a period of 14 quarters from April 2015 to Sept 2018.

Introduction

A developed financial system's role in driving and sustaining the economic growth of a country is well acknowledged. The banking sector plays a crucial role in financial transmission by mustering deposits from households and dispensing credits to deficit sectors. Therefore, the banking sector's effective functioning has a notable effect on the growth and performance of various sectors largely. The job of a very much created banking framework in animating and supporting a country's financial development is all around perceived. The financial area assumes an indispensable part in monetary intermediation by preparing stores and dispensing credits to the needy sectors in an economy. Accordingly, the successful working of the financial area, thus, influences the presentation and efficiency of different areas to a great extent. The arrangement technique of banks stays a huge worry for the controllers, financial backers, public just as the policymakers to screen the general exhibition of the monetary status of the country all things considered. The uncommon development of non-performing resources brings the consideration of different controllers and analysts towards the asset the executives capacity and the benefit age methodologies of the banks around the globe. Credit development has become a disturbing issue for quite a long time; further, Ghosh has contended that higher credit development prompts bank delicacy, which must be checked warily to dodge future outcomes. The quick speed of credit development has likewise raised a few prudential dangers, which lead to corrupting the monetary adequacy of the financial area sequentially. In association with this, the Reserve Bank of India has begun a few prudential measures in the year 2015 to recognize the focused on resources and figured the techniques to recuperate the non-performing resources of the banks to fortify the monetary dependability of the financial framework on the loose.

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The new demonetisation move embraced by the Indian government has encountered a tremendous money inflow (liquidity) through the financial divert as stores. It revealed an irregular development in explicit sorts of records, generally set apart by a low degree of movement in the customary course of banking tasks. The report (Mint-street Memo.1) delivered by the Reserve Bank of India, uncovers abundance stores that gathered to the financial framework because of the demonetisation to be in the scope of 2.8-4.3 trillion. Also, a critical expansion in 18 million new records has been opened in the plan of Pradhan Mantri Jan-Dhan Yojana (PMJDY) put various inquiries upon the productivity and sending procedure of the banks in India should be inspected (Singh and Roy, 2017). Banks add to financial development as well as render the chances to put away and set aside their cash through a few got and unstable methods of venture (Sufian and Habibullah, 2009), yet that requirements to agree with the prudential standards thoroughly.

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Review of Literature

A few writing has zeroed in on an individual nation to investigate various determinants of bank's productivity (Berger et al., 1987; Neely and Wheelock, 1997 and Sanyal and Sankar, 2005). Indian public area banks are confronting a triple risk for example losing piece of the pie, crushed productivity, and frail monetary record, which thusly influences the development and benefit must be circumspectly dissected (Saumitra, 2002). There is a positive connection between the adjustments in danger and capital in an enormous example of banks (Shrieves and Dahl, 1992), and a positive interrelation exists in the middle of the advance payment and bank proficiency (Berger and Deyoung, 1997). Cost proficiency is a fundamental pointer of future advances and bank issues later on. A few investigations have corresponded bank size to capital resource proportion and report a positive connection between bank productivity and capital proportions. It is contended that the increment in the capital prompts higher productivity as huge banks can raise capital with ease; accordingly, the higher capital proportions show the sufficiency of the bank (Haslem, 1968; Bourke, 1989; Bikker and Hu, 2002; and Goddard et al., 2004). Further, a low degree of bank liquidity and helpless resource quality are huge variables that antagonistically influence a bank's monetary wellbeing and lead to bank disappointments. Be that as it may, in various business sectors and large scale financial situations, different examinations have introduced opposing outcomes like Bourke (1989) report a positive connection between the degree of liquidity and productivity. In any case, Molyneux and

Thornton (1992) set up a negative connection between the said factors.

Ghosh and Abhiman (2000), in their investigation, discovered that enormous banks expanded their proportion of funding to hazard weighted resources not exactly different banks. Administrative pressing factor is additionally found to essentially affect the proportion of funding to chance weighted resources. Bashir (2003), in his investigation, uncovered that high cash-flow to-resource and credit to-resource proportions lead to higher benefit. The outcomes additionally demonstrate that unfamiliar possessed banks are probably going to be beneficial, and the macroeconomic conditions sway the presentation gauges emphatically.

Ali and Mohammad (2003), in their investigation, investigated that insurance ought to be founded on the possible reliability and no new advance office to past advance defaulters will build bank benefit and takes out the credit danger of the banks. Nitin and Puneet (2008) have uncovered that the unfamiliar bank has shown the best credit proportion, while some consideration is as yet needed on account of public area banks. It is likewise uncovered that the proportion of rustic metropolitan workplaces emphatically affects CD proportion. Ahmad et al. (2008), in their investigation, has asserted that a solid positive connection between administrative capital and bank the board's danger taking conduct exists in the banks of a creating economy. They have contended that the 2007-08 monetary emergency depended on the hefty danger loaning, which prompts liquidity and capital disintegration issue. (Overall, less non-performing credits. Ghosh (2010), in his paper, asserted that higher credit development intensifies bank delicacy. He has likewise inspected that credit development has been employed in private banks. Deger and Adem(2011), in their

examination, propose that banks can improve their benefit by expanding bank size and non-premium pay, diminishing credit to resource proportion. Moreover, a higher genuine financing cost can prompt higher bank benefit. Dhar and Bakshi (2015), in their paper, discovered that net interest edge and capital sufficiency proportion display negative and huge effect on the gross non-performing propels (GNPA) proportion of Indian PSBs. Ghosh (2015), in his paper, unequivocally contended that Macro-prudential strategy (MPP) guidelines focused on arrangements are moderately more viable in restricting credit extension. At the point when considered related to bank possession, the MPPs are successful in controling credit expansion to focused areas. Ali (2016), in his paper, explores that bank's productivity is altogether influenced by its internal factors, while outside factors are irrelevant. Puspa et al. (2016), in their investigation, uncovered that the genuine credit development fell generously (comparative with normal) by around 8 rate focuses from pre-to post-emergency periods. That normal financial guideline and management fortify after an emergency. Bhupal and Indrajit (2017) has investigated Excess stores accumulated to the financial framework because of demonetisation are in the scope of 2.8-4.3 trillion. They have likewise uncovered that new demonetisation has acquired overabundance stores development in a few sorts of records that should be inspected.

Objectives of the Study

1. To analyse and evaluate the asset quality of the commercial banks in India.
2. To illustrate the nexus between the demonetisation and the asset quality.

Data and Methodology

The study comprises of ten commercial banks during the period from 2015 to 2018.

The time periods are divide into three buckets, such as Q1:2015 to Q2:2016 (Pre-demonetisation), Q3:2016 to Q4:2016 (Demonetisation), and Q1:2017 to Q2:2018 (Post-demonetisation) into account. The sample is selected based on the market capitalization, and the sample includes public and private sector banks. The final panel data was built with 140 bank-year observations into account. The variables were collected from the Bloomberg and the Centre for Monitoring Indian Economy (CMIE) also. The figures were cross verified with the information available in the sample banks' annual financial statements to confirm the accuracy.

Empirical Methodology

To estimate the asset quality, we employ the panel data constituting of 140 bank variables having a combination of time series and cross sectional in nature, and the basic financial model for this study is as follows:

Where y denotes the dependent variable and α denotes the intercept term. Whereas β is the coefficient of regression. The study model is as follows:

Asset quality $_{n,t}$ = α_0 + β_1Operating efficiency $_{n,t}$ + β_2Leverage efficiency $_{n,t}$+ β_3 Management efficiency $_{n,t}$ + β_4Long-term Investment $_{n,t}$ + β_5Short-term Investment $_{n,t}$ + β_6 Deposits $_{n,t}$ + γ Control variable + $\varepsilon_{n,t}$

Description of the Variables: The list of variables and their explanation are being presented in Table-1. The variables considered in the study are classified into three categories, such as performance variables, efficiency variables, and control variables.

Performance Variable Asset Quality: It is a fundamental pointer of bank execution; it mirrors the acknowledge quality for regard to the bank's loaning rehearses. In this examination, the resource quality is estimated by considering advances to add up to resource proportion into account. Ali

(2016) contended that resource quality is emphatically connected with benefit, and it mirrors the bank's profitability.

Efficiency VariablesOperating efficiency

The operating effectiveness is the best boundary to gauge the bank's administration proficiency, though better administration productivity is to manage the lower working proportion. The operating effectiveness is estimated by isolating all out working costs with absolute resources.

Leverage efficiency: Leverage efficiency refers to indicate the financial position of an institution; how much protected the bank from absorbing the financial losses. Lower the ratios better the financial health of the concern. This ratio is computed by dividing debt to total assets.

Management efficiency: The management efficiency indicates how cautiously the bank's used their funds to accommodate the customers' credit needs. The ratio is calculated by dividing loans to deposits into the account. Therefore, the higher the ratio implies lower liquidity.

Long-term investment: Long-term investments are taken to capture the degree to which the funds are deployed in terms of maturity. This ratio is calculated by dividing long-term investment to total assets.

Short-term investments: It is used as a proxy to capture how much the short-term investment is made out of total assets. This ratio can be measured by dividing to short-term investments to total assets.

Deposits: Banks intensely rely upon deposits, and by and large, the deposits are decidedly connected with the bank's productivity. Thus, banks can change their premium and benefit income into advances to be more productive.

Control VariableAsset Size
The study considers asset size as a proxy to arrest the bank size. The natural log of total assets has been undertaken to control its

effect on bank performance. Generally, it has been witnessed that the bank size persists a positive association with bank's profitability.

Table 1: Description of the variables

Nature of variables	Name of variables	Description of variables
Dependent Variable	Asset Quality	Total loans over total assets
Independent Variables	Leverage efficiency	Total debt to total assets
	Operating efficiency	Operating expenses to total assets
	Management efficiency	Total loans to total deposits
	Deposits	Total deposits to total assets
	Short-term Investment	Short-term investments to total assets
	Long-term Investment	Long-term investments to total assets
Control Variable	Asset Size	Natural log of total assets

Source: Authors calculation.

Empirical Analysis and Results

Descriptive Statistics
Table 2 reports the statistical description of the categories of variables used for the study, such as; dependent, independent, and control variables. The average asset quality reported in the sample is 62.59 percent, and the maximum is 69.62 percent, which means the lending practices remain higher. The independent variables, such as deposits, have a maximum of 90.25 percent which is quite high among the Indian banks. Management efficiency, which is the maximum followed by deposits, is 100. Further, 38 percent, which represents the liquidity management, is quite critical in the Indian banks, which need to be monitored. As operating efficiency is a tool for the banks' management practices, which is 0.54 on average, that indicates the Indian banks are perfectly managing the operating expenses so prudently to manage the assets. In the case of leverage efficiency as

measured, the organization's financial health is having an average of 10.47 percent and a maximum of 22.87 percent, which indicates that the Indian banks are quite cautious to their debt management, which is a positive sign for the growth of the banks. In connection to the long and short-term investments, the average is 8.32 percent and 22.51 percent that denotes banks are relying more on short-term rather than long-term to manage the customers' immediate liquidity needs.

Table 2: Descriptive Statistical results

Variables	No. of Obs.	Mean	Median	Std. Deviation	Minimum	Maximum
Dependent Variable : Panel-A						
Asset Quality	140	62.59	62.90	2.55	54.38	69.62
Independent Variables :Panel- B						
Deposits	140	77.46	76.07	7.44	64.06	90.25
Operating Efficiency	140	0.54	0.51	0.19	0.07	1.55
Long-term Investment	140	22.51	24.92	7.48	0.70	33.09
Short-term Investment	140	8.32	7.02	4.24	3.74	21.65
Leverage Efficiency	140	10.47	9.78	5.78	1.21	22.87
Management Efficiency	140	81.62	83.49	9.10	63.33	100.38
Control Variable: Panel-C						
Asset Size	140	15.20	15.49	0.95	13.48	17.29

Source: Authors calculation.

Multicollinearity

Table 3 represents the cross-correlation matrix for all the explanatory variables undertaken for the study. The result reports the absence of correlation among the explanatory variables. However, management efficiency and leverage efficiency is having -0.94 and -0.92, respectively, which denotes that the total deposits are linked with these two efficiency variables. Generally speaking, the consequence of the presence of the correlation affirms the nonattendance of Multicollinearity among the variables

Table 3: Cross-Correlation Matrix

	Deposits	Mgt. efficiency	Long-term Invest.	Operating efficiency	Short-term Invest.	Leverage efficiency	Asset Size
Deposits	1.00						
Mgt. efficiency	-0.94	1.00					
Long-term Invest.	0.30	-0.28	1.00				
Operating efficiency	-0.15	0.26	-0.02	1.00			
Short-term Invest.	0.34	-0.44	-0.20	-0.29	1.00		
Leverage efficiency	-0.92	0.82	-0.34	-0.08	-0.23	1.00	
Asset Size	0.08	-0.16	-0.09	-0.35	0.23	0.06	1.00

Source: Authors calculation.

Regression Results of the variables

Table 4 depicts the outcome of the panel regression. We utilised the pooled ordinary least square model (OLS) to explain the results. The result shows that deposits has a positive association, i.e. at 5 percent level. This indicates the asset quality is dependent on the proper deployment of the deposits that strengthens the overall bank performance. The leverage efficiency exhibits negative and significant impact upon the asset quality, which indicates the banks' asset quality gets affected by increasing the debt, which is undesirable for the growth of a concern. In the case of management efficiency, the results show significant at 5 percent level and strong association with the asset quality, which implies the more prudently the bank disburse the loans out of the deposits that will strengthen the asset quality in the future. The short-term investment results show a significantly negative association at a 5 percent level, which implies the increases in the short-term investment, decreasing the asset quality. It is an alarming situation for the banks to manage the assets cautiously for liquidity management in the future. The result repeats its nature in the case of long-term efficiency. In operating efficiency, the result shows a negative and significant at 1 percent level, which implies the less usage of the operating expense, increases the asset quality of the banks, and is desirable. Asset size, which has taken as a control variable, has resulted in a positive and significant impact on asset quality.

Table 4: Regression Statistics of the variables

Regression results: Pooled OLS			
Variables	**Coeff.**	**t-Statistic**	**Prob.**
Intercept	-63.9315	-19.9364	0.0000**
Deposits	0.7838	31.7096	0.0000**
Operating Efficiency	-0.2860	-1.0834	0.2806***
Long-term Investment	-0.0019	-0.3070	0.7593***
Leverage Efficiency	-0.0494	-2.2468	0.0263**
Management Efficiency	0.7767	51.3457	0.0000**
Short-term Investment	-0.0440	-3.6804	0.0003**
Asset Size	0.2297	4.8965	0.0000**
No. of Obs.	140		
Adjusted R-square	0.96455		
F-stat.	541.226		
Prob(F-stat)	0.0000		

Source: Authors.
Note: The table reports the results of Pooled OLS regression on Asset quality as dependent variable. ***** Statistical significance at 10% level, ****** at 5% level and ******* at 1% level.

Conclusion

The worry about resource quality in Indian banks has constrained the bank controllers to outline rigid standards with respect to the credit dispensing approaches and a brisk recuperation system. The asset quality is a crucial parameter to measure the financial health of the banks. Henceforth, the Reserve Bank of India has come forward to manage the continuous degradation of the asset quality by imposing several prudential restrictions such as prompt corrective actions (PCA) as the time moves on. It indicates the alarming condition of the Indian banking system at this juncture. This study explores the asset quality of the Indian banks influenced by several internal factors such as deposits, management efficiency, leverage efficiency, long and short-term investments into account.

The study reveals that the total bank deposits that have flooded into the banking channel at the time of demonetisation is having a significant positive impact on the banks' asset quality. Thus, implying the improper deployment of deposits leads to affect the overall performance of the banks. In the case of leverage efficiency, the result

shows a negative impact upon the asset quality that assures the Indian banks are cautious enough to manage the debt, which inversely affects the banks' asset quality, which is desirable. In connection with the management efficiency, the result depicts a positive impact upon the asset quality, which is a good indicator for the Indian banks as a whole. That implies the banks are prudently disbursing the funds in terms of credit creation. But in the case of long-term and short-term investment, none of them is positively associating with the asset quality, which infers that the banks are not concerned about the investments side, which will face liquidity issue in the near future if they do not manage the investments properly for asset creation. In a nutshell, it can be concluded that although demonetisation episode makes the banks to disburse the fund cautiously. However, in terms of asset creation as far as investments are concerned, banks are less focused on meeting the customers' future needs, which is a serious issue and needs to be monitored at the regulatory level at large.

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