

Chapter 3

Materials and Methods

The explanation of the research methods and techniques utilized during the study process is a crucial component of the research activity. In this chapter statement of the problem, scope of the study, research objectives, Material and Method, are all discussed.

3.1 STATEMENT OF THE PROBLEM

On November 8, 2016 Government announced that Rs 500 and Rs1000 banknotes would no longer be useful for public. Total value of demonetized currency amounted to 15.4 trillion and that was around 86.9% of total currency in circulation. Demonetization affected many sectors of the nation but banking sector was the most affected one as it was the main channel through which whole economic process had moved on. It was assumed that banking sector had an edge over the rest during the entire exercise of demonetization. It was said that banks were the main beneficiaries from demonetization. The management of liquidity got impacted and considered to be difficult in day-to-day operations of banks. It had a bigger impact on managing liquidity because of consumer's demand to exchange the notes. Demonetization had disrupted bank operations and work life balance of bank employees because of their long working hour. While exchanging the restricted currency notes, the majority of banks were unable to provide other banking services. So, it becomes necessary to understand demonetization impact on banks financial performance as banks financial performance directly related to a country's economic growth.

3.2 SCOPE OF THE STUDY

The current analysis is limited to six commercial banks only in which there are three public sector banks and three private sector banks. Three public sector banks are State bank of India, Punjab National Bank, Bank of Baroda and three private sector banks are HDFC, ICICI and

AXIS bank. The banks performance is analyzed during the demonetization period. The period is divided into Pre and post demonetization periods. Pre demonetization periods is the year from 2013-14 to 2016-17 and post demonetization period is the year from 2017-18 to 2020-21.

3.3 RESEARCH GAP

After analysis of various literatures, the researcher discovered that many authors from various sections of the country are interested in knowing about the demonetization and its impact. The majority of studies focused on how demonetization affected several economic sectors, including rural and agricultural, cashless and e-commerce, hospitality and tourism, retail, automotive, health care, and so forth. but there are very few papers on the impact of demonetization on the financial performance of the banking sector. Since NPA is the major problem for banks, the impact of demonetization on their NPA position also needs to be determined.

3.4 OBJECTIVES

Researcher would strive to achieve objectives given below.

1. To evaluate the financial performance of public and private sector banks during demonetization period.
2. To compare the financial performance of public and private sector banks before and after demonetization period.
3. To evaluate the factors that directly affect the profitability of banks during the above-mentioned period.

3.5 DATA COLLECTION AND ORGANIZATION METHOD

3.5 (1) Collection of Data: The performance of Indian scheduled commercial banks is assessed using secondary data. To accomplish the objectives, the data is gathered from the different sources like annual reports of banks, Reserve bank of India bulletins. Additionally, the necessary details are obtained from a variety of books, journals, magazine, and newspapers.

3.5(2) Samples: Total six commercial banks are considered for evaluating the financial performance of banks during demonetization period. Three public sector banks and three private sector banks are chosen. Three public sector banks are State bank of India, Punjab National Bank and Bank of Baroda and three private sector banks are HDFC, ICICI, AXIS Bank.

3.5(3) Time frame of the study: Since this study revolves around the demonetization period, so total eight years which were close to demonetization period, are selected for analysis. The demonetization period is divided into two parts as pre demonetization period and post demonetization period. The year 2013-14 to 2016-17 is considered as Pre demonetization period and the year 2017-18 to 2020-21 is considered as post demonetization period.

3.6 METHODS

Some financial and statistical methods are used to analyze the data. These are as follows.

3.6 (1) FINANCIAL TOOLS

Ratio Analysis

Ratio analysis is one of the most popular and regularly employed tool for financial analysis. It is one of the financial analysis approaches that use ratios as a yardstick for assessing the relationship between different components of financial statement so that the company's current situation and potential futures can be evaluated. The relationships between figures are expressed mathematically as ratios that have some relevance to one another. It is systematically applied in financial statements to identify a company's strengths and weaknesses. Also, it is

significant because it shows facts in a comparative way. Additionally, it helps to study a company's competitive landscape by matching its financial performance to that of other companies operating in the same industry. In the current study, four categories of ratios are used. (1) Profitability ratios gauge a company's overall performance. (2) Asset quality ratios are used to analyze the asset quality of a firm. (3) Efficiency ratio which evaluates how well a company, is utilizing its assets to produce revenue. (4) Liquidity ratios are used to gauge the company's ability to meet its short-term obligations.

A. Profitability Analysis

- *Other income to total income ratio*
- *Return on equity*
- *Return on assets*
- *Return on investment*
- *Cost of deposit ratio*
- *Cost of borrowing ratio*
- *Gross profit ratio*
- *Net profit ratio*
- *Return on advance ratio*
- *Operating expense to total income ratio*

B. Asset Quality Analysis

- *Gross NPA to total assets ratio*
- *Net NPA To total asset ratio*

C. Efficiency Analysis

- *Interest income to total asset ratio*
- *Noninterest income to total asset ratio*

- *operating expenses to total assets ratio*
- *Income on asset ratio*
- *Operating profit to total asset ratio*

D. Liquidity Analysis

- *Current Ratio*
- *Demand and saving bank deposit to total deposit ratio*
- *Total investment to deposit ratio*
- *Absolute Liquid Ratio*

Profitability Parameter

Profitability ratios are calculated to estimate a company's capability to create income with respect to the expenditures and extra pertinent charges incurred during a specified time period. High earnings show potential future growth, less risk exposure and efficient operations. Various ratios are computed to analyze the profitability which is as follows.

Other Income to Total Income Ratio This ratio indicates other income as percentage of total income. The greater ratio denotes a higher part of income which is generated from fee income. This ratio is calculated in the following way.

$$\text{Other income to total income ratio} = \text{Other income} / \text{Total income} * 100$$

Return on Equity: The percentage of net income returned to shareholders equity is known as return on equity (ROE). It measures a company's profitability by showing what amount of money it generates by the money of investors. Return on equity measures profit as percentage of equity capital of banks. This ratio is calculated in the following way.

$$\text{Return on equity} = \text{Net Profit} / \text{Shareholders equity} * 100$$

Return on Asset: The net income that the bank makes with respect to its total assets is known as the return on asset ratio. This ratio expresses the net income or profit as a percentage of total assets. This ratio is determined in this following way.

*Return on asset = Net income / Total assets * 100*

Return on Investment Ratio: This ratio indicates interest earned on investment with respect to total investment made by the banks. It demonstrates the successful outcome of bank investments. This ratio is calculated in the following way

*Return on investment = Interest earned on investment / Total investment * 100*

Cost of Deposit Ratio: The cost of deposit ratio shows how much money banks have spent on interest on deposits. Since all banks have about the same deposit rate, there isn't a significant variation between them in this ratio. The volume of business that each bank conducts may explain differences in this ratio between banks. This ratio calculated in the following way.

*Cost of deposit ratio = Interest paid on deposits / Total deposits * 100*

Cost of Borrowing Ratio: This ratio shows how much the bank has experienced the cost for raising money through borrowings. This ratio calculated in the following way.

*Cost of borrowing ratio = Interest paid on borrowing / Total borrowing * 100*

Gross Profit Ratio: This ratio indicates profit before tax (PBT) as percentage of total Income. Greater ratio denotes the high profit for banks. This ratio is calculated in the following way.

*Gross profit ratio = Profit before tax / Total Income * 100*

Net Profit Ratio: This ratio indicates the profitability that compares the company's profits to the total revenue received by the organization. The greater ratio denotes the high profit for banks. This ratio is determined in the following way

*Net profit Ratio = Net profit / Total Income * 100*

Return on Advance Ratio: This ratio indicates the interest earned on advances and bills with respect to total advance given by banks. It demonstrates the successful performance of banks by making use of their advance. This ratio calculated in the following way

*Return on advance ratio = Interest earned on advance and bills / Total advance * 100*

Operating Expenses to Total Income Ratio: This ratio indicates operating expense as percentage of total Income. A lower number for this ratio denotes higher profitability of banks.

This ratio is determined in the following way

$$\text{Operating expenses to total income Ratio} = \text{Operating Expenses} / \text{Total income} * 100$$

Asset Quality Parameter: The most crucial factors in assessing a bank's financial success are its nonperforming assets levels. Nearly all banks are struggling today with a high NPA problem. High NPA is viewed as an unfavorable sign and badly affect financial health of the bank. This ratio reveals the amount of current and future credit risk related to loan and investment portfolios. Various ratios are computed to analyze the asset quality which is as follows

Gross NPA to Total Asset Ratio: This ratio expresses as the gross NPA as percentage of total assets of any banks. A lower ratio shows that banks are performing well. This ratio is calculated in the following way.

$$\text{Gross NPA to total Assets} = \text{Gross NPA} / \text{Total assets} * 100$$

Net NPA to Total Asset Ratio: This ratio expresses as the net NPA as percentage of Total asset of banks. A lower ratio shows that banks are performing well. This ratio is calculated in the following way.

$$\text{Net NPA to total Assets} = \text{Net NPA} / \text{Total assets} * 100$$

Efficiency parameters Efficiency ratios, often known as activity ratios, assess how effectively a business uses its assets and resources to drive sales and optimize profits.

Interest Income to Total Assets Ratio: This ratio expressed the interest income as percentage of total assets. This ratio is calculated in the following way.

$$\text{Interest Income to Total Asset ratio} = \text{Total interest income} / \text{Total Asset} * 100$$

Noninterest Income to Total Assets Ratio: This ratio indicates noninterest income as percentage of total assets. This ratio is calculated in the following way. This ratio is determined in the following way.

$$\text{Noninterest Income to Total Asset ratio} = \text{Noninterest income} / \text{Total Asset} * 100$$

Operating Expenses to Total Asset Ratio: It is a part of efficiency ratio which determines the operating expenses such as non-interest expense of any commercial bank with respect to its total asset. This ratio is calculated in the following way.

$$\text{Operating expenses to total asset ratio} = \text{Operating expenses} / \text{Total asset} * 100$$

Income on Asset Ratio Income on asset ratio also called as the asset turnover ratio. It measures how effectively a business utilizes its assets to create revenue. This ratio is calculated in the following way.

$$\text{Income on asset ratio} = \text{Total Income} / \text{Total asset}$$

Operating Profit to Total Assets Ratio: Operating profit to total asset ratio indicates operating profit as percentage of total asset. The following way operating profit to total asset ratio is calculated.

$$\text{Operating Profit to Total Assets Ratio} = \text{Operating Profit} / \text{Total Asset} * 100$$

Liquidity Parameter

Liquidity ratios evaluate a company's capacity to pay its short-term obligations. Liquidity ratios determine how quickly a company can convert the assets and use them for meeting the dues that arise. The higher the ratio, the easier is the ability to clear the debts and avoid defaulting on payments. Various ratios are computed to analyze the liquidity which is as follows.

Current Ratio: The current ratio evaluates a company's ability to pay its debts within the following twelve months. It demonstrates the company's liquidity status and its capacity to meet its current obligations in time. This ratio is calculated in the following way.

Current ratio = Current assets / Current liabilities

Current assets = Cash and Balance with RBI+ Balance with Bank & Money at call and short notice + bill purchased and discounted +cash credit, overdrafts and loans repayable on demand

Current liabilities = Demand deposits from banks+ Demand deposits from other + Saving bank deposits + Other liability

Demand & Saving Bank Deposits to Total Deposits Ratio: Here, the ratio indicates the demand and saving bank deposit as percentage of total deposit. This ratio is calculated in the following way.

*Demand & Saving Bank Deposits to Total Deposits Ratio = Demand & saving bank deposits / Total deposits * 100*

Total deposits = Demand deposits, savings bank deposit and term deposits

Total Investment to Deposit Ratio: Here, the ratio indicates the total investment as percentage of total deposit. This ratio is calculated in the following way.

*Total Investment to Deposit Ratio = Total Investment / Deposit Ratio * 100*

Absolute liquid Ratio: This ratio indicates the short-term liquidity of the company. It shows that whether a company is able to clear off its obligation by using its liquid assets. The company's position in terms of short-term liquidity is stronger when the ratio is higher. This ratio is calculated in the following way.

*Absolute liquid Ratio = Cash and equivalents / Current liability * 100*

Cash and equivalents = Cash in hand and balance with RBI

Current liabilities = Demand deposits and savings deposits

Factors that affect the profitability of banks: To evaluate the factors that directly affect the profitability of banks, researcher strived to correlate different variables mentioned below.

Dependent Variable: Profit after tax

The earnings that remain after the company has paid all of its expenses are known as profit after tax or net profit. Profit after tax is considered a dependent variable because it is a measure of profitability. Profitability rises in proportion to the rise in PAT.

Independent Variables: Interest earned, other income, Operating expenses, Interest paid on deposit, Non-performing Assets.

The components of income and expenditure have chosen as independent variables because both of them affect the profitability of banks. NPA is also an important factor that affects the profitability of banks.

Two components of income are interest income and other income.

Interest Income: The primary sources of income are the interest earned on bank loans. A bank's volume of loans, loan types, and interest rate on those loans are the primary factors that determine its interest income level.

Other Income: The revenue that banks make from non-core operations is known as non-interest income. This income is also known as other income which is not interest-bearing income. It plays important role in overall profitability.

Two components of expense are interest paid on deposits and Operating expenses.

Interest paid on Deposits: This is the expense variable for a bank. Banks have to pay interest on saving account and other deposits. The interest rate on bank deposits is significantly influenced by the volume and interest rate structures of bank deposits.

Operating Expenses: Operating expenses are another significant expense for the banks. It represents the total compensation paid to bank staff as well as the expenses associated with maintaining branch office space. Higher the operating costs, lower will be the profits. It affects the profitability of banks.

NPA: Another crucial factor in assessing a bank's profitability is its nonperforming assets levels. High NPA is viewed as an unfavorable sign and badly affect the profitability of the bank.

3.6 (2) STATISTICAL TOOLS

Tabular Analysis and Graphical representation: When a large amount of data has been gathered, it is vital to arrange the data in a clear and logical sequence. This process is known as tabulation. In this process, raw data is filtered, rearranged and presented in a tabular form. The data is gathered from secondary sources. After computation of various ratios, Different tables and graphs are created in order to make the data easier to understand.

Descriptive Statistics: In a current study, descriptive analysis is utilized to show the fundamental characteristics of the data. This analysis provides simple summary about the selected data and the measures. In order to understand the nature of the various variables used in this research study, measures of central tendency like mean, standard deviation, median, and skewness are calculated.

Weighted Mean: A weighted mean is an average that is created by allocating various weights to various individual data. A weighted mean can improve the data's accuracy. To compare the sector-wise performance of banks in pre and post demonetization period, weighted means are calculated. Weighted means are derived, indicating the share of each bank in the group.

Correlation Analysis: Correlation analysis is applied between dependent and independent variable in order to find the factors that affect the profitability of banks.