A Thesis Report
On

'A Study of Non-Performing Assets in India'

Prepared in partial fulfillment of the requirements of
Course No. BITS F423T (9 Units)

BY

Name of the Student	ID Number
Shubham Shanker	***2016B3A30446P***

Under supervision of Dr. A.K. Giri
Head of Department, Economics Department

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI

27th April 2021

Acknowledgement

Firstly, I would like to thank my supervisor Dr. A.K. Giri for their constant support and guidance throughout the journey of this thesis. Their guidance has helped me throughout not only during the thesis but even before it and the project would also not be possible without it. The knowledge related to the project has helped me to understand newer parts of economics as well as made me more curious about various other related branches.

I would also like to thank my family for constantly supporting and motivating me throughout the project.

Certificate

This is to certify that the Thesis entitled A Study of Non-Performing Assets in India and submitted by Shubham Shanker ID No. **2016B3A30446P** in partial fulfillment of the requirement of BITS F423T-Thesis embodies the work done by him under my supervision.

Date: 27th April ’2021

Signature of the supervisor
Dr. A.K. Giri
Head of Department
(Department of Economics)

Abstract

The banking sector in India has come a long way with liberalization and a lot of economics reforms. It has allowed banks to look for new methods of generating revenue as well as serve the ever-expanding needs of a growing economy. Yet despite all the new reforms and regulations non-performing assets (NPA) continue to be a major thorn at its side. In a developing nation especially India with a huge population the strength of the banking system is a major pillar in terms of overall financial stability. The need of the hour is to fix the critical parts of the banking system and one of the major ones is the amount of NPAs. Only once this issue is addressed properly, all the points of views looked at and a thorough analysis is carried out (statistical analysis) of the reasons behind it, can we move hope to alleviate the brunt of the causes. A lot of similar studies have been done in the past 20 years and a lot of ways to reduce the number of NPAs along with recoveries of NPA have also been established. But they suffer from the problem of effectiveness and this will also be looked at and studied.

Keywords: non-performing assets (NPAs), banking sector, loans, public sector banks, private sector banks, foreign sector banks, loan recovery, Due diligence, Lok Adalat, DRTs, SARFASEI

.

Table of Contents

Contents

Chapter 1: Introduction

The chapters and their layout are given as follows. The current chapter (chapter 1) gives the introductions to NPA along with their significance, comparisons of the NPA ratios with a worldwide view, the major factors which play a role in its sustenance and growth and looks at the kind of banks available. Chapter 2 finalizes the objective of the study. Chapter 3 is used for the collection, visualizations, and analysis of data in accordance with the aims laid out in chapter 2. There are comparisons made amongst the sectors as well as within the public sector as to the composition of loans. The Profitability of banks is also looked at. Chapter 4 contains the recovery analysis; what methods have been taken for this and how successful they have been over the years. Finally, Chapter 5 finishes it off with a conclusion.

1.1) Non-Performing Asset (NPA) Definition

Non-Performing Assets (NPA) are asset structures in the form of loans that are termed as nonperforming when the interest/principal is not paid back in the required time. The required amount of time before which an asset is termed non-performing is 90 days and has been extended to 180 days in certain cases due to the COVID pandemic. There are three types of classifications of NPAs based on the period for which the asset has remained non-performing:

1) Sub-standard Assets: If an asset has been an NPA for a period less than or equal to 12 months.
2) Doubtful Assets: If an asset has been in a substandard category for 12 months or more.
3) Loss Assets: An asset wherein the loss has been identified by the bank, auditors, or the RBI inspection but the amount has not been written off wholly.

Normal assets in which there are no issues, and the payments are being made on time under the terms decided at the beginning are called standard assets. Any assets apart from standard assets are categorized as NPAs and they are further divided according to the above classification.

1.2) NPA and its Importance

It has briefly been discussed in the introduction why NPAs are a major cause for concern and the causes are explained in depth here:

1. Proxy for the wellbeing of the banking sector: One of the major indicators of a strong, well balanced, and financially stable banking system is the amount of NPA's that a bank has. This is partly since, in addition to the interest that is not received, the entire loan which comes under the category of an asset in the balance sheet of the bank must be written off in cases. Banks create provisions for every loan in case it turns into a bad loan (NPA). Even after accounting for the provisions the losses due to NPA's can be huge and the bank can and does afford them but only at the cost of profitability and the shareholder value. In some cases, if the loan amount is large enough it can lead to the collapse of the entire bank. One recent example is that of Yes Bank wherein the amount of NPA's grew exceptionally large and the actual amount went unreported. When questions started rising about the quality of loans and an investigation took place it went completely downhill. The share value fell about 50% from the peak in 2018 and has currently lost more than 95% of its value. The government had to bail out the bank and come up with a revival plan.

2. Banking sector externalities: It has been established that the NPA's can serve as a proxy for the bank's health. It is of more importance when we consider that part that a bank plays in India. The banking sector is at the heart of the financial system of any country, and especially India being a developing country is very dependent on the banking system of the country. India is an example of a growth economy, and it is imperative to have a good banking system to support development, provide ample opportunity for investments to companies as well as retail loans. In the case of the above example of Yes Bank, the government had to put in money to buy the bank even though there was a complete mishandling on the part of the bank as to the quality of the loans and the financials of the banks are in extremely poor conditions. This comes at an excessively big opportunity cost which is the huge amounts of funds needed to save the bank as it was "too big to fail". These funds could have been used in so many other ways. This serves the purpose of showing that the financial system of India is a vital part of our country and it plays a role in every decision that is made, and if the system is to be strengthened the weakest parts must be identified and carefully studied.

1.3) NPA and its History

Major changes occurred in India with economic liberalization taking place in 1991. It was done in part to deal with various economic crises and rampant corruption in the system. Stabilization of the economy was an excessively big factor, and this took by various reforms such as monetary and financial reforms, reforms in capital markets, industrial policy reforms, trade policy reforms, promoting foreign investment and steps takes to secure the exchange rate. Specifically, in the banking systems, many reforms were made, and they include:

1. Reserve Requirements: The cash reserve ratio (CRR) and statutory liquidity ratio (SLR) were extremely high and brought down.
2. Interest Rate Liberalization: Rates payable on different deposits were earlier controlled by RBI and now they were slowly decentralized to a certain extent.
3. Guidelines for opening new private banks were made.
4. Liberalization of licensing policy of bank branches was done to supplement the already existing network.
5. New rules regarding asset classification and provisions of bad debt were also done.

These reforms were undertaken to address the existing problems, and they also opened India and made it much more accessible to trade. They also led to a boom in investments. This was initially good and has had many positive impacts but also causes problems when the situation gets worse. There was a banking crisis that occurred during the late 1990s due to the Asian Financial Crisis and the dot-com bubble. Banks were affected and reforms made during liberalization were also corrected. But a big part of today's major NPA problems can be traced back to the excessive lending done during the credit boom of 2003-2008 and the negligence shown during that time. The banks relied too much upon past data and did not do their due diligence which when combined with the 2007-08 crisis made it worse. During and post the crisis RBI made provisions to help banks using debt restructuring but the banks which had not been properly regulated only took advantage and it made the entire situation even worse in the long run (post-2011) and is discussed in detail in Chapter 3. There are a lot of intertwined factors at play and an analysis of the major ones are done.

1.4) NPA Comparison

India has a profoundly serious NPA problem, and this can be discerned very clearly when we compare it with the other nations worldwide and then amongst the large economies as well.
Figure 1 represents a worldwide heat map that shows the gross non-performing loans in 2018 and it varies from 0.22% in Monaco (light blue) to 53% in San Marino and Ukraine. Continent wise North America and Australia seem to be doing the best with NPA's ranging from 1-2%.

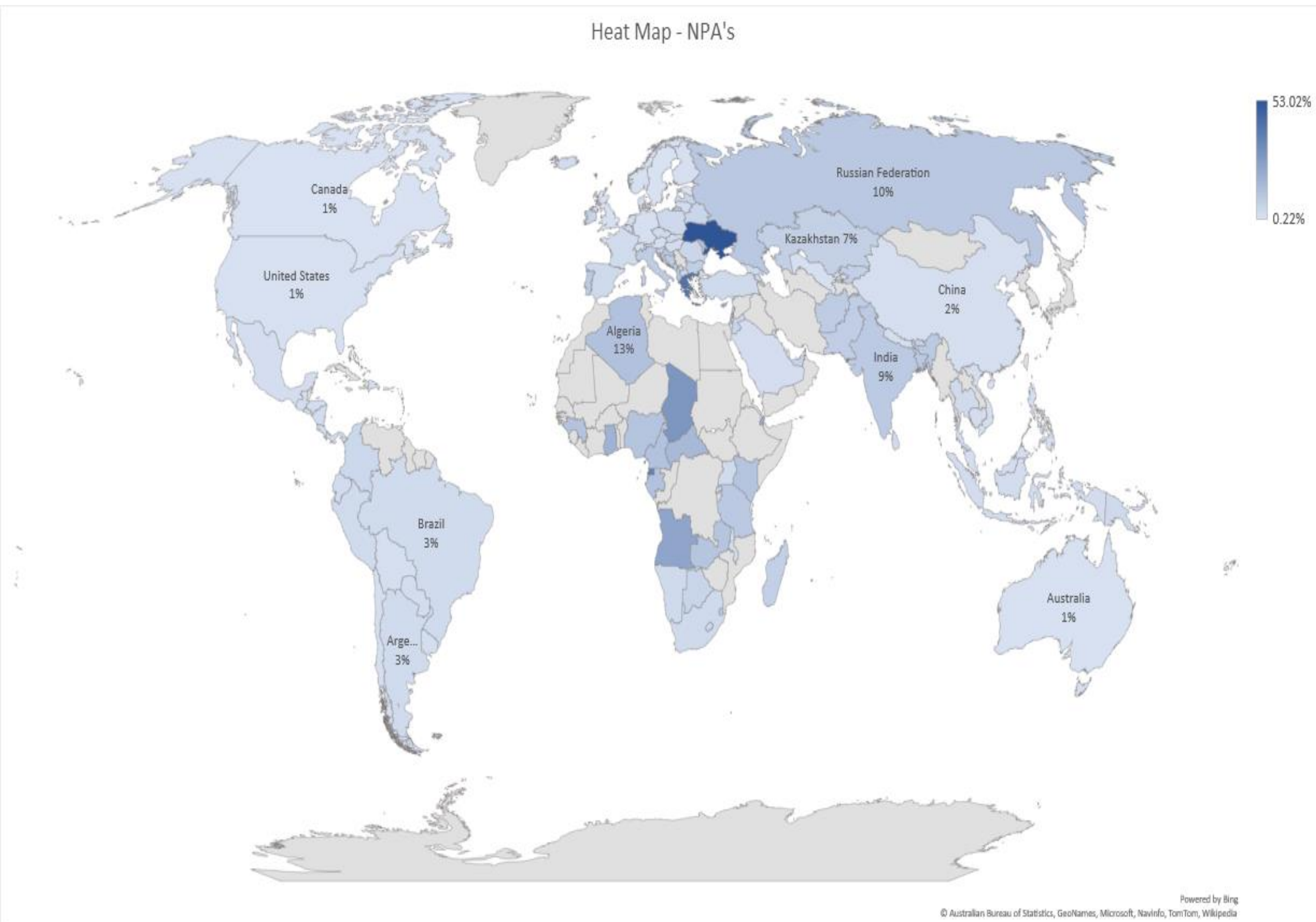

Figure 1: Worldwide Heat Map of Gross NPA

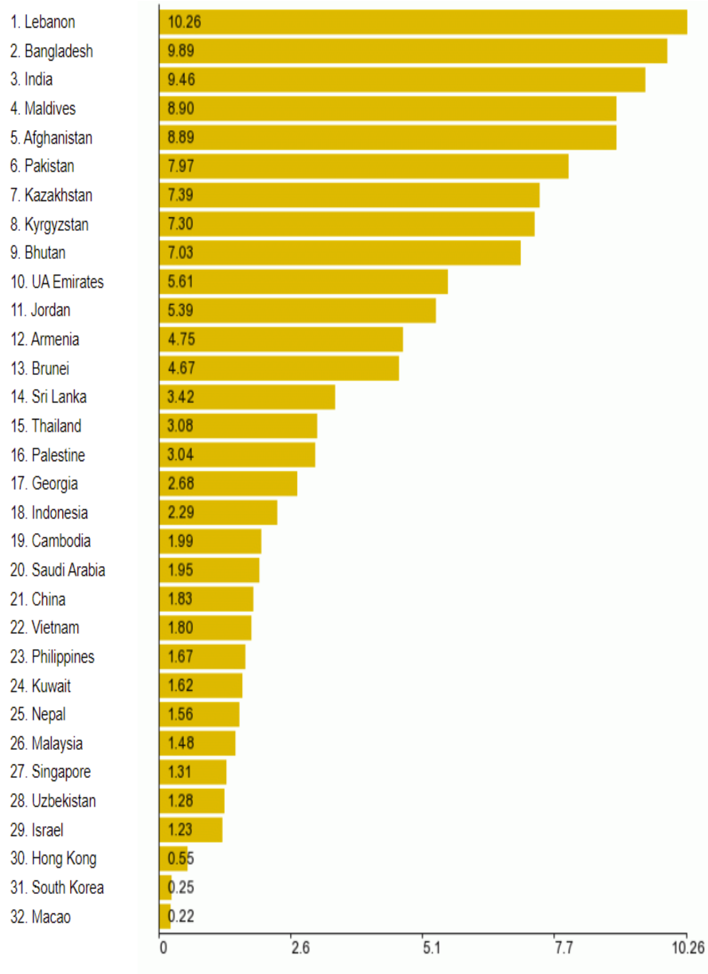

Figure 2: Gross NPAs in Asia

South America comes next, and the range is from 2% to 5%. The rest of the continents have several countries doing well with NPA's below 5% but also a few countries stand out in each continent. In Europe San Marino, Ukraine and Greece have the highest NPAs in the world with the ratios being above 40%. Figure 2 represents the percentage for all of Asia and India is at 3rd place with a ratio of 9.46%. The average for Asia is high as compared to the rest of the continents. According to the IMF India has been ranked 33 among 137 nations in a global list of countries in descending order of the ratio of NPA's. Also, in a similar situation in Africa with the average ratio being even worse than that of Asia.

Another comparison carried out is in between the largest economies in the world for 2018. Figure 3 given on the next page provides a picture of the condition that India is in. We are the second highest after Russia and way higher than the rest of the nations which are below a 2% ratio. This is important as it highlights the severity of the problems that exist in the banking system in India. There is often a trend of NPA issues in countries that are developing but there are also examples of countries such as China, Argentina, and Chile which are developing and still have low ratios of 1-2 %. Another worrying factor is that the ratio has shown an increasing trend from 2011 onward when it was at around 3% to 9.5% in 2018. The rest of the countries apart from Russia and India have shown an opposite trend and decreased and stabilized at just under 2%.

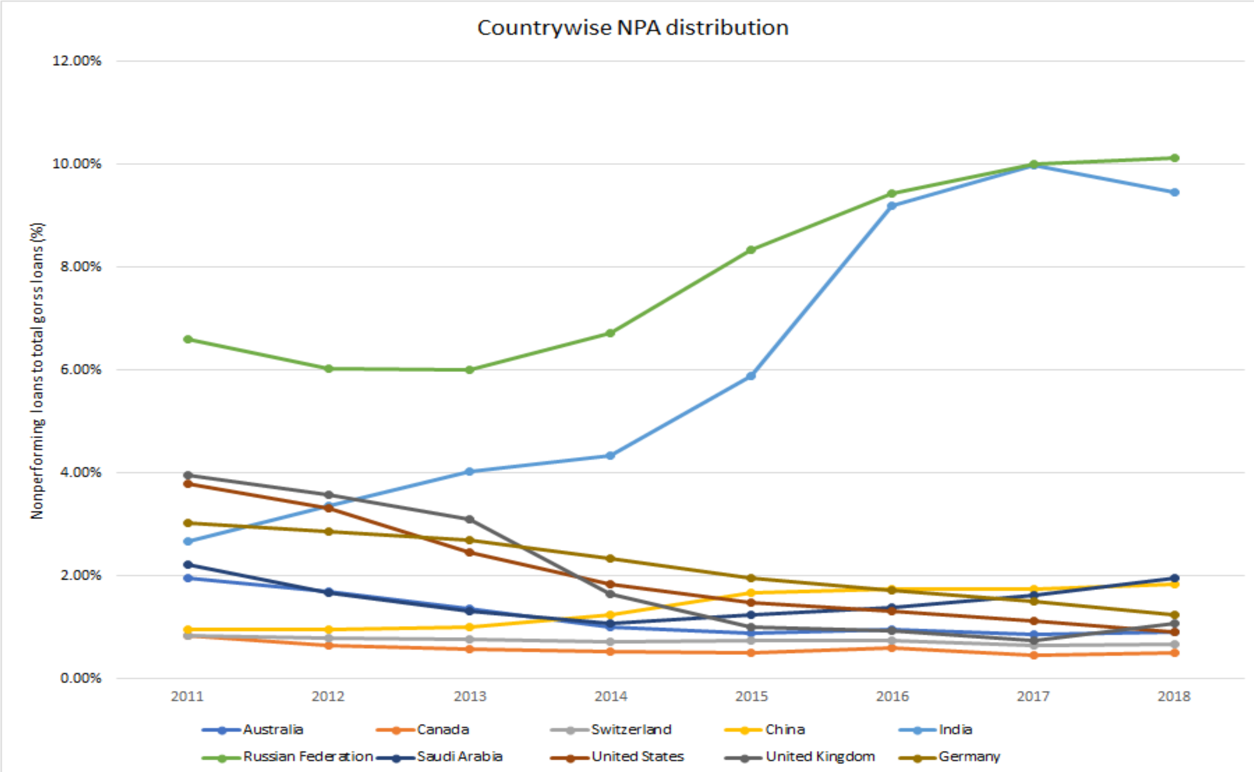

Figure 3: Large Economies NPA distribution

1.5) NPA Factors

There are a lot of factors that come into play and make it much more likely that in developing countries the ratio of gross NPAs will be higher. They are listed as follows:

a. Nature of Investment - The increased amounts of investments when going well for the bank that finances them is a plus, but this leads to a decrease in the quality of investments by banks. Over time if a few bad decisions are made which leads to the erosion of the capital of banks, to increase profits bad upper management makes decisions based on adverse selections and that will lead to even more erosion. Also, most of the bad loans can be attributed to only a few big companies.

b. Financial Framework - The entire banking system is also developing and there is a lot for the scope of improvement. Also, there are a lot of bad actors involved as the system is not very efficient yet and taking advantage is not that difficult.

c. Economic Conditions - Oftentimes loans that are taken for a project are defaulted due to economic conditions and it is not entirely the fault of the banks or the borrower. But stringent measures should be put into place while giving out a loan and lots of things must be taken into consideration and large provisions must be made against it. Even after giving out a loan, timely checks must be done to ensure that the conversion in NPA's is low.

d. Other Factors - The judicial system is also not up to the mark. The time taken for processing such cases is huge and it will be discussed in detail in the upcoming chapters. Guidelines for the recovery of NPAs are also developing along with proper and quick systems relating to the prosecution of defaulters.

1.6) Types of Banks

In India, all the banks can be classified into mainly three types and those are as follows:

a. Central Bank - Reserve Bank of India is the central bank. It is the statutory bank and a regulatory body under the jurisdiction of the Ministry of Finance. It plays a key role in the finances of the country. It is responsible for the management of the Indian currency, it also controls the monetary policy of the country, and is responsible for the regulations of the entire banking system. Some of the important functions are shown in the figure given.

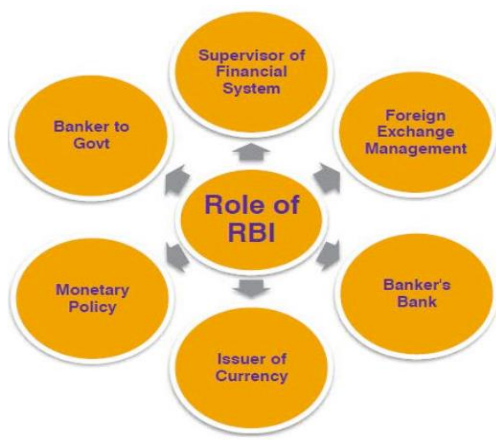

Figure 4: Functions of RBI

b. Scheduled banks - These are those that have been included in Second Schedule of the Reserve Bank of India Act, 1934. Also, they must meet certain requirements laid down in the Act. There are two further classifications in these types of banks which are:

i.) Commercial Banks – These are organized under the Banking Companies Act, 1956. As the name suggests they are commercial and one of the major objectives is to make a profit. They are owned both by the government and private parties and are further classified into Public Sector, Private Sector, and Foreign Sector banks. A deeper dive into these types of banks will be taken in the upcoming chapters wherein the NPA ratios will be examined.

ii) Co-operative banks - These banks are organized under the Cooperative Societies Act, 1912. They serve an important role by providing loans in the rural areas as well as to the smaller industries and individual loans. They are further classified into Short Term (1-5 years) and Long Term (greater than 5 years) credit institutions. In rural areas, the loans are given for agricultural and other related purposes. The main aim is to increase social welfare by providing concessional loans.

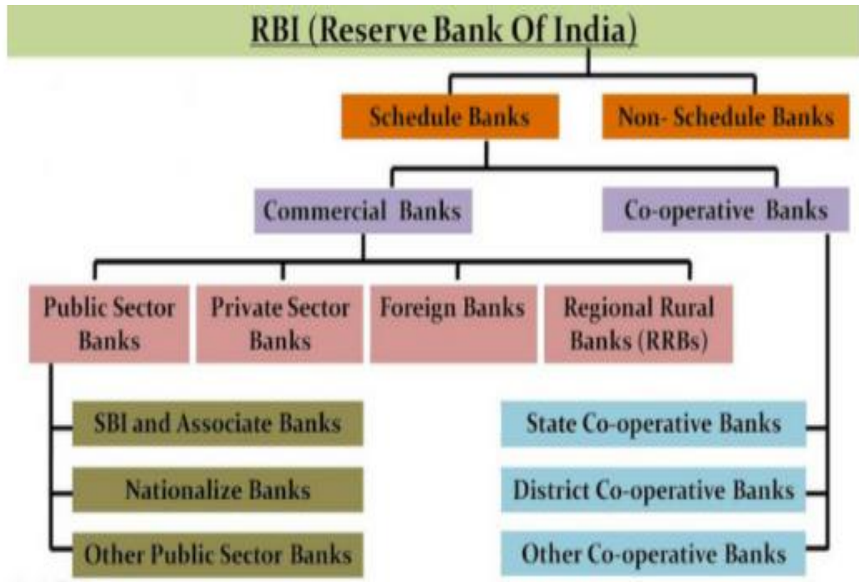

Figure 5: Banks Classification in India

c. Non-Schedule Banks - Banks which are not included in the list Second Schedule of Reserve Bank of India Act, 1934. There are only 3 such banks in the country. They are also not eligible for having loans from the RBI for day-to-day activities but only under the emergency conditions can they get a loan.

Chapter 2: Outlining Major Objectives

A brief background for NPA's importance in today's context and with relation to India has already been provided in the previous chapter. It has also been shown that this is one of the major weaknesses in our economic system and there has been a lot of effort to identify the root causes and recommendations based on those. It is important to look at data and understand the difference in the NPA's and compare the private, public, and foreign sector banks on their performance considering the NPA trends. The recovery mechanisms and their impacts will also be looked at in Chapter 4.

Different NPA trends will be analyzed concerning the types of banks as well as the sectors of lending regarding the public sector banks. This will help identify specific causes as to how often an asset becomes non-performing along with examining their causes as well as their distribution across sectors. The next chapter will include the data from secondary sources related to NPA's for a period dating back to around 20 years (2000 – 2019).

The major objectives can thus be classified as follows:

- Compare the NPA's trends along with it factors which cause it across public and private sector banks and how they have changed.
- Compare the profitability of both public and private sector banks and their relationship with NPAs.
  Identify the major recovery systems for NPAs, comparing and analyzing how they have performed in recent years.

All the given points will be looked at in the upcoming chapters and hopefully, significant conclusions can be drawn along with a complete picture of the results while also providing insights into the reason behind them.

Chapter 3: Comparison of NPA across Sectors

The NPAs are compared in percentage terms across the different sectors of scheduled commercial banks to paint a picture as to the main cause behind it. A comparison amongst the public sector banks is also done based on the composition of loans.

3.1) Data Collection

For most of the data, a period of 19 years from 2000 to 2019 is taken into consideration due to the availability of the homogenous data, but in some places, a few extra years have been also considered in the study. The majority of the data is taken directly from secondary sources such as the RBI (https://dbie.rbi.org.in/). In some cases, due to data not being available, it is directly taken from reports and websites (tertiary sources). The complete amount of loans given to scheduled commercial banks is included. All the figures given below are in thousand crore Rupees unless otherwise mentioned.

NPAs are be classified into type types based on measurement:

a. Gross NPA: They are the total amount of loans that are unpaid and have been classified as NPAs as per the definitions provided earlier. They consist of all the types of NPA's such as sub-standard, doubtful, and loss and represent a total loss due to NPA.
   Gross NPA ratio = Gross NPAs / Gross advances
b. Net NPA: They are the total NPAs after accounting for the provisions made by the banks for NPA's at the start. These provisions are made for this exact case and so that the balance sheet of the bank represents a fair picture. The provisions are made in accordance with the guidelines of the RBI. The difference between the gross NPA and net NPA can be quite large.
   Net NPA ratio = Net NPAs / Net Advances, which is the same as:
   Gross NPAs – Provisions / Gross advances – Provisions

3.2) Visualization

In the tables given below the total amount of advances are mentioned, along with the gross and the net NPAs both as a percentage of advances and total assets.

3.2.1) Scheduled Commercial Banks

Year (End-March)	Advances		Non-Performing Assets					
	Gross	Net	Gross			Net		
	Total Amount	Total Amount	Amount	As % of Gross Advances	As % of Total Assets	Total Amount	As % of Net Advances	As % of Total Assets
2018-19	10287.1	9709.8	936.5	9.1%	5.6%	355.076	3.7%	2.1%
2017-18	9266.2	8746.0	1039.7	11.2%	6.8%	520.838	6.0%	3.4%
2016-17	8476.7	8116.1	791.8	9.3%	5.6%	433.121	5.3%	3.1%
2015-16	8171.1	7896.5	611.9	7.5%	4.7%	349.814	4.4%	2.7%
2014-15	7560.7	7388.2	323.3	4.3%	2.7%	175.841	2.4%	1.5%
2013-14	6875.7	6735.2	264.4	3.8%	2.4%	142.656	2.1%	1.3%
2012-13	5971.8	5879.8	194.1	3.2%	2.0%	98.693	1.7%	1.0%
2011-12	4648.8	5073.6	142.9	3.1%	1.7%	65.205	1.3%	0.8%
2010-11	3996.0	4297.5	98.0	2.5%	1.4%	41.799	1.0%	0.6%
2009-10	3262.1	3496.7	84.7	2.6%	1.4%	39.127	1.1%	0.6%
2008-09	3024.7	2999.9	68.3	2.3%	1.3%	31.564	1.1%	0.6%
2007-08	2503.4	2476.9	56.3	2.2%	1.3%	24.73	1.0%	0.6%
2006-07	2007.4	1981.2	50.5	2.5%	1.5%	20.281	1.0%	0.6%
2005-06	1545.7	1516.8	51.1	3.3%	1.8%	18.543	1.2%	0.7%
2004-05	1167.7	1150.8	59.4	5.1%	2.5%	21.754	1.9%	0.9%
2003-04	902.0	862.6	64.8	7.2%	3.3%	24.396	2.8%	1.2%
2002-03	778.0	740.5	68.7	8.8%	4.1%	29.692	4.0%	1.8%
2001-02	681.0	645.9	70.9	10.4%	4.6%	35.554	5.5%	2.3%
2000-01	558.8	526.3	63.7	11.4%	4.9%	32.461	6.2%	2.5%

Table 1 - Scheduled Commercial Banks

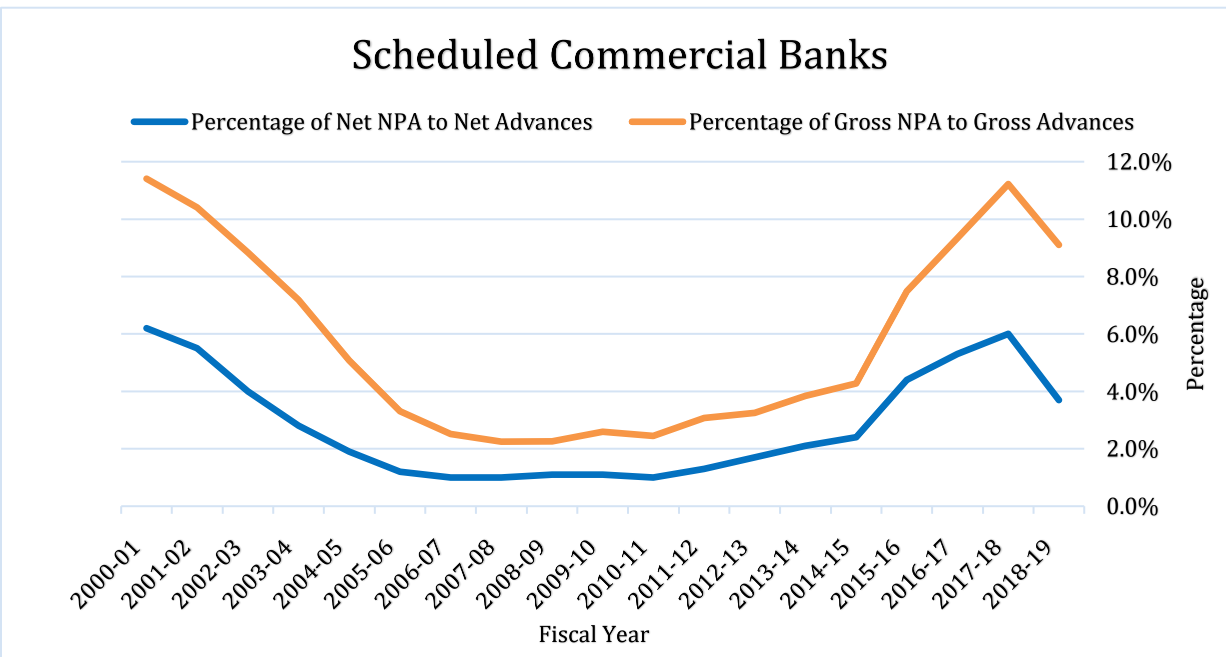

Figure 6: Percentage of net advances converting into NPA for scheduled commercial banks overall.

3.2.2) Public Sector Banks (PSBs)

Year (End-March)	Advances		Non-Performing Assets					
	Gross	Net	Gross			Net		
	Total Amount	Total Amount	Amount	As % of Gross Advances	As % of Total Assets	Total Amount	As % of Net Advances	As % of Total Assets
2018-19	6382.5	5926.3	739.5	11.6%	7.3%	285.123	4.8%	2.8%
2017-18	6141.7	5697.4	895.6	14.6%	8.9%	454.473	8.0%	4.5%
2016-17	5866.4	5557.2	684.7	11.7%	7.0%	383.089	6.9%	3.9%
2015-16	5822.0	5593.6	540.0	9.3%	5.9%	320.376	5.7%	3.5%
2014-15	5616.7	5476.3	278.5	5.0%	3.2%	159.951	2.9%	1.8%
2013-14	5215.9	5101.1	228.3	4.4%	2.9%	130.635	2.6%	1.6%
2012-13	4560.2	4472.8	165.0	3.6%	2.4%	90.037	2.0%	1.3%
2011-12	3550.4	3877.3	117.8	3.3%	2.0%	59.391	1.5%	1.0%
2010-11	3079.8	3304.4	74.7	2.4%	1.4%	36.055	1.1%	0.7%
2009-10	2519.3	2701.3	59.9	2.4%	1.3%	29.643	1.1%	0.7%
2008-09	2283.5	2259.2	45.0	2.0%	1.2%	21.155	0.9%	0.6%
2007-08	1819.1	1797.4	40.5	2.2%	1.3%	17.836	1.0%	0.6%
2006-07	1464.5	1440.1	39.0	2.7%	1.6%	15.325	1.1%	0.6%
2005-06	1134.7	1106.3	41.4	3.6%	2.1%	14.566	1.3%	0.7%
2004-05	870.9	854.2	48.4	5.6%	2.7%	16.904	2.0%	1.0%
2003-04	662.0	631.4	51.5	7.8%	3.5%	19.335	3.1%	1.3%
2002-03	577.8	549.4	54.1	9.4%	4.2%	24.877	4.5%	1.9%
2001-02	509.4	480.7	56.5	11.1%	4.9%	27.958	5.8%	2.4%
2000-01	442.1	415.2	54.7	12.4%	5.3%	27.977	6.7%	2.7%

Table 2 - Public Sector Banks

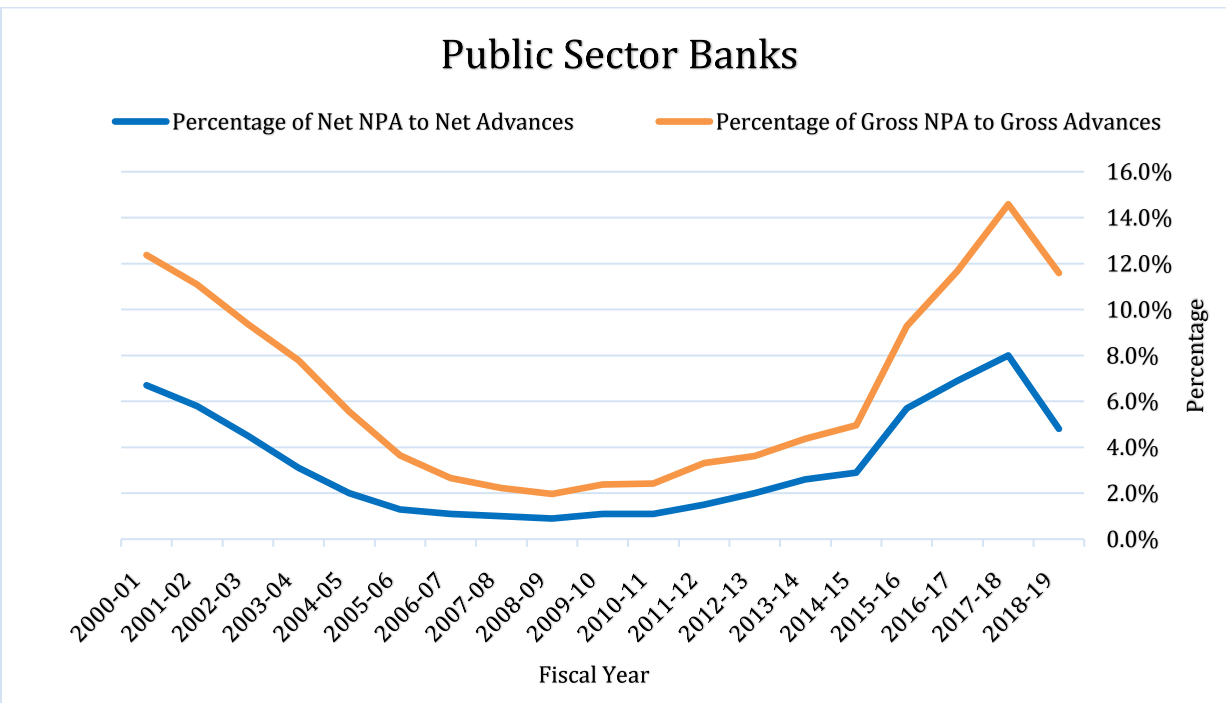

Figure 7: Percentage of net advances converting into NPA for scheduled commercial banks overall.

3.2.3) Private Sector Banks

Year (End-March)	Advances		Non-Performing Assets					
	Gross	Net	Gross			Net		
	Total Amount	Total Amount	Amount	As % of Gross Advances	As % of Total Assets	Total Amount	As % of Net Advances	As % of Total Assets
2018-19	3442.3	3327.3	183.6	5.3%	3.5%	67.309	2.0%	1.3%
2017-18	2725.9	2662.8	129.3	4.7%	3.0%	64.38	2.4%	1.5%
2016-17	2266.7	2219.5	93.2	4.1%	2.6%	47.78	2.2%	1.3%
2015-16	1972.7	1939.3	56.2	2.8%	1.8%	26.677	1.4%	0.8%
2014-15	1607.3	1584.3	34.1	2.1%	1.3%	14.128	0.9%	0.5%
2013-14	1360.3	1342.9	24.5	1.8%	1.1%	8.862	0.7%	0.4%
2012-13	1151.2	1143.2	21.1	1.8%	1.1%	5.994	0.5%	0.3%
2011-12	871.6	966.4	18.8	2.2%	1.1%	4.401	0.5%	0.3%
2010-11	723.2	797.5	18.2	2.5%	1.3%	4.432	0.6%	0.3%
2009-10	579.5	632.4	17.6	3.0%	1.5%	6.506	1.0%	0.6%
2008-09	575.2	575.3	16.9	2.9%	1.6%	7.412	1.3%	0.7%
2007-08	523.7	518.4	13.0	2.5%	1.4%	5.647	1.1%	0.6%
2006-07	418.2	414.8	9.3	2.2%	1.2%	4.028	1.0%	0.5%
2005-06	315.1	313.0	7.8	2.5%	1.4%	3.17	1.0%	0.6%
2004-05	223.7	221.3	8.8	3.9%	2.1%	4.212	1.9%	1.0%
2003-04	119.5	115.1	6.0	5.0%	2.4%	1.986	1.7%	0.8%
2002-03	94.7	89.5	7.2	7.6%	3.8%	1.365	1.5%	0.7%
2001-02	76.9	74.2	6.8	8.9%	3.9%	3.663	4.9%	2.1%
2000-01	31.5	30.1	1.6	5.1%	2.1%	0.929	3.1%	1.2%

Table 3 - Private Sector Banks

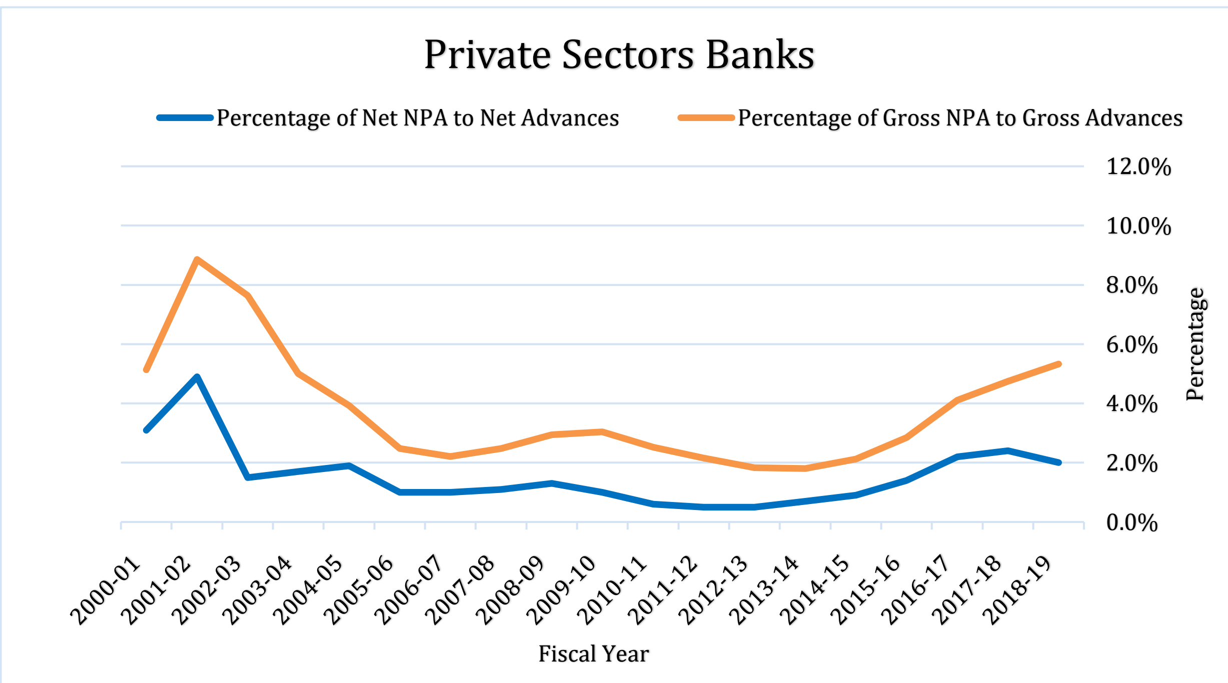

Figure 8: Percentage of net advances converting into NPA for private banks.

3.2.4) Foreign Sector Banks

Year (End-March)	Advances		Non-Performing Assets					
	Gross	Net	Gross			Net		
	Total Amount	Total Amount	Amount	As % of Gross Advances	As % of Total Assets	Total Amount	As % of Net Advances	As % of Total Assets
2018-19	406.9	396.7	12.2	3.0%	1.2%	2.05	0.5%	0.2%
2017-18	363.3	351.0	13.8	3.8%	1.6%	1.548	0.4%	0.2%
2016-17	343.6	332.3	13.6	4.0%	1.7%	2.137	0.6%	0.3%
2015-16	376.5	363.6	15.8	4.2%	1.9%	2.762	0.8%	0.3%
2014-15	336.6	327.6	10.8	3.2%	1.4%	1.762	0.5%	0.2%
2013-14	299.6	291.1	11.6	3.9%	1.5%	3.16	1.1%	0.4%
2012-13	260.4	263.7	8.0	3.1%	1.3%	2.663	1.0%	0.4%
2011-12	226.8	229.8	6.3	2.8%	1.1%	1.412	0.6%	0.2%
2010-11	193.0	195.5	5.1	2.6%	1.0%	1.312	0.7%	0.3%
2009-10	163.2	163.3	7.1	4.4%	1.6%	2.977	1.8%	0.7%
2008-09	166.0	165.4	6.4	3.9%	1.4%	2.997	1.8%	0.7%
2007-08	160.7	161.1	2.9	1.8%	0.8%	1.247	0.8%	0.3%
2006-07	124.7	126.3	2.3	1.8%	0.8%	0.927	0.7%	0.3%
2005-06	95.9	97.6	1.9	2.0%	1.0%	0.808	0.8%	0.4%
2004-05	73.2	75.3	2.2	3.0%	1.4%	0.639	0.8%	0.4%
2003-04	62.6	60.5	2.9	4.6%	2.1%	0.933	1.5%	0.7%
2002-03	54.2	52.2	2.8	5.3%	2.4%	0.903	1.7%	0.8%
2001-02	50.6	48.7	2.7	5.4%	2.4%	0.92	1.9%	0.8%
2000-01	45.4	43.1	3.1	6.8%	3.0%	0.785	1.8%	0.8%

Table 4 - Foreign Sector Banks

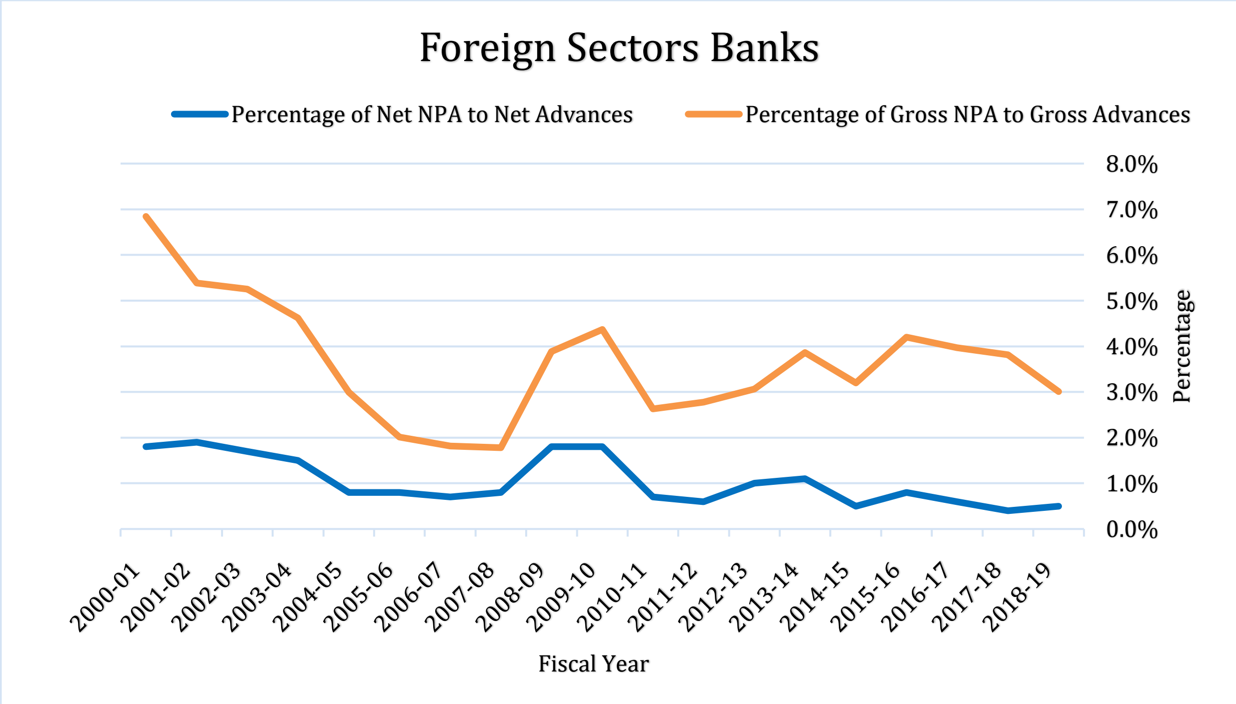

Figure 9: Percentage of net advances converting into NPA for foreign banks.

3.3) Analysis

3.3.1) Sector Wise Comparison

Complete gross and net NPA data for scheduled commercial banks and their components of public, private, and foreign banks have been accumulated and shown in the tables above. In the graph, both the gross NPA and net NPA ratios have been considered as they show both the overall number of losses and actual losses sustained after provisions.

Starting with the entire scheduled commercial banks we observe that the net NPAs ratio was at around 6% during the year 2000 and it has reduced consistently till 2006 and stayed flat for a few years at around 1% reaching a minimum of 0.9% in 2008. Then it has risen again and reached a peak of 6% in 2017 before declining to 3.7% in 2018. The gross NPAs ratio follows almost the same trajectory, with the only difference being that the ratio is about 2 times higher than that of the net NPAs.

Moving on to Public Sector banks, they follow a remarkably similar trend to that of the scheduled commercial banks. The magnitude on the other hand is much greater. The net NPAs start at about 6% during the year 2000 and it falls till about 2007-2008, stays stable for a few years at around 1% and then stars rising from 2011 gradually and then faster from 2014 and reaches a maximum of 8% in 2017 and falls back down to 4.8% the next year in 2018. The value for the gross NPAs also follows the same pattern and is about twice the value of the net NPAs.

For the Private Sector Banks, the net NPAs ratio started at 3.1% in the year 2000 witnessed a dramatic increase next year to 4.9%, and then has gradually tapered off over the year. It reached a minimum of 0.5% in 2011 and rose over the decade and it as of 2019 at 2%.
The gross NPAs ratio follows the same pattern as that of the other of having a similar trend and a greater magnitude that is about twice the net NPAs. The magnitude of net NPA ratios and gross NPA is much lower than that compared to the public sector banks.

Moving on to the last group, which is the Foreign Sector Banks, the net NPAs ratio started with the least value compared to the rest of the sectors at 1.8% in the year 2000 which declined to 0.8% over the next few years and then rose again during the years 2008, 2009 due to the impact of the financial crisis. After that, it has fallen a little and as of 2018, the value is at an extremely up to the mark value of 0.5%. An interesting observation that can be made looking at the value of the gross NPAs ratio is that the magnitude compared to the net NPA's is around 3 times higher in the 2000s and as of the last 5 years, it is on average 6 times higher. This shows that the amount of provisions made for bad loans is much higher in foreign banks as compared to both the public and the private sector banks in India.

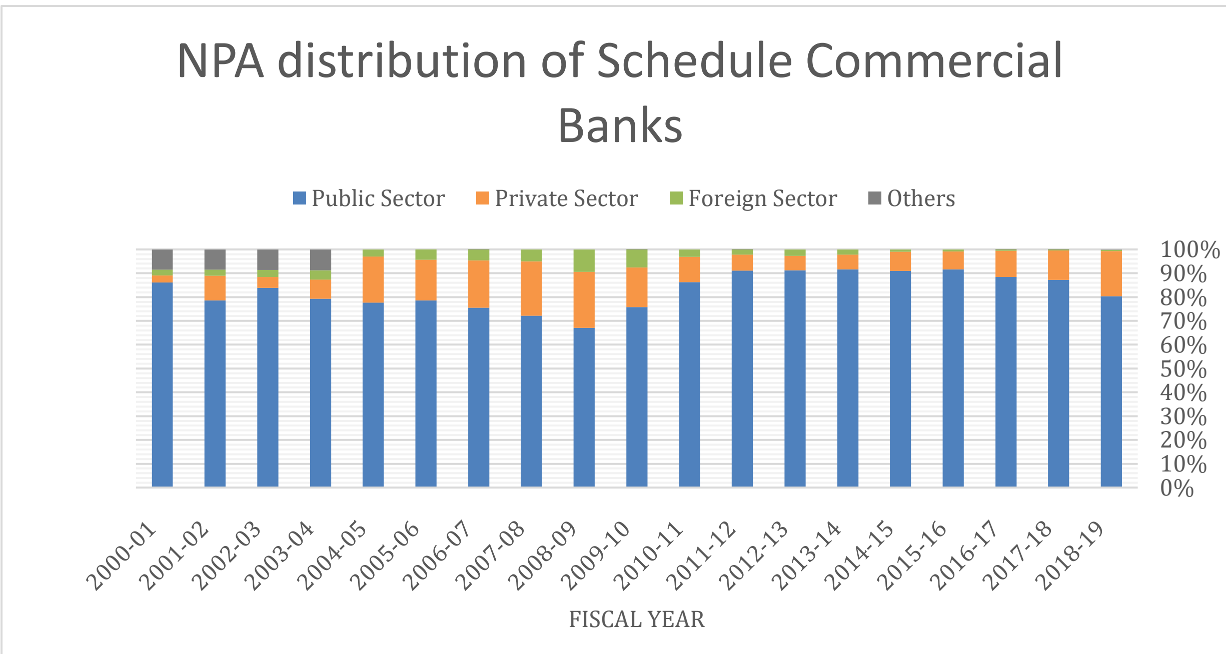

Figure 10: Net NPA ratio distribution for different sectors through the years

The above-given figure also gives a lot of insight and helps in summarizing things. These are given as follows:

1. Majority of the NPAs ranging from 65% to 92% over the years are a result of the Public Sector Banks followed by the NPAs of the Private Sector Banks which range from 2% to 23% and Foreign Banks have the least contribution, and they range from 1% to 8%.
2. One reason attributable to the highest contribution of the NPAs due to the Public sector banks is also that they have the largest amount of assets and hence the total assets also play a role. There are also a lot of other reasons as discussed in Chapter 1, but this is also one of them.
3. Over the years the contribution of public sector banks has initially declined from 86% in 2000-01 to 67% during 2008-09, then risen to 92% in 2013-14 and then come down to 80% in 2018-19. The opposite trend is seen with the private sector banks wherein it has

initially increased from 2% in 2000-01 to 23% during 2008-09, then fallen to 6% in 2013-14 and then risen to 19% in 2018-19. The foreign sector banks stay low and only rise during the financial crisis period during 2008-09 and 2009-10 to around 8-9%.

3.3.2) Composition of Loans

Another important graph that shows the composition of public sector loans is given in Figure 11 below. The three types of sectors and their importance are as follows:

1. Priority Sector: Lending that is used to provide institutional credit to those sectors and segments for which it is difficult to get credit. For example, Agriculture, Micro Small, and Medium Enterprises (MSME's), Education, Housing, etc.
2. Non-Priority Sector: Include such sectors that are evergreen and financial institutions are always ready to lend credit. It is not tough and special focus does not have to be given to this sector in terms of encouragement to lend.
3. Public Sector: Contributes to an exceedingly small percentage of loans given out through the public sector banks.

On analyzing the graph given in Figure 11 we find out that:

1. The contribution of the two major sectors i.e., the Priority Sector and the Non-Priority

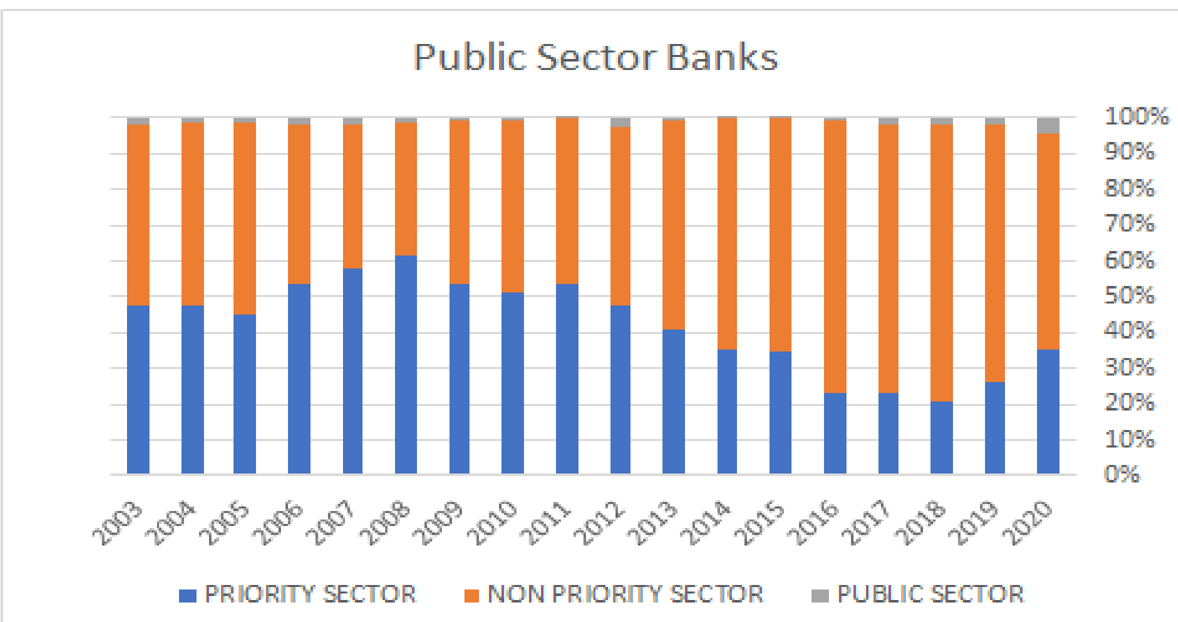

Figure 11: Composition of Loans in the Public Sector

Sector is almost equivalent at 50% during 2003, it eventually increases for the Priority

Sectors and is at around 60% in 2008 and correspondingly 40% for Non-Priority Sectors. From then onward this trend changes and the contribution of the Non-Priority Sector increase immensely and reaches around 80% in 2018 and 20% for Priority Sector. A reversal occurs here and the percentage for the Priority sector increases by a few percentages over the next two years.

2. This indicates that the rise and fall of NPAs due to the Non-Priority sector also corresponds with the rise and fall of overall NPAs in the public sector banks and that these might be one of the major reasons behind the increase in the NPAs of the public sector banks and consequently the overall rise in schedule commercials banks.

3.3.3) Profitability of banks

Profitability is the most important part of a commercial operation. The same applies to public and private sector banks. To estimate profitability the following were taken into consideration 1) Operating Profits, 2) Return on Equity, and 3) Return on Assets are taken into consideration. There is an implicit relationship between the quantity of NPA's and the profitability of banks and intuitively profitability would be a lagging factor and inversely related to the ratio of NPAs.

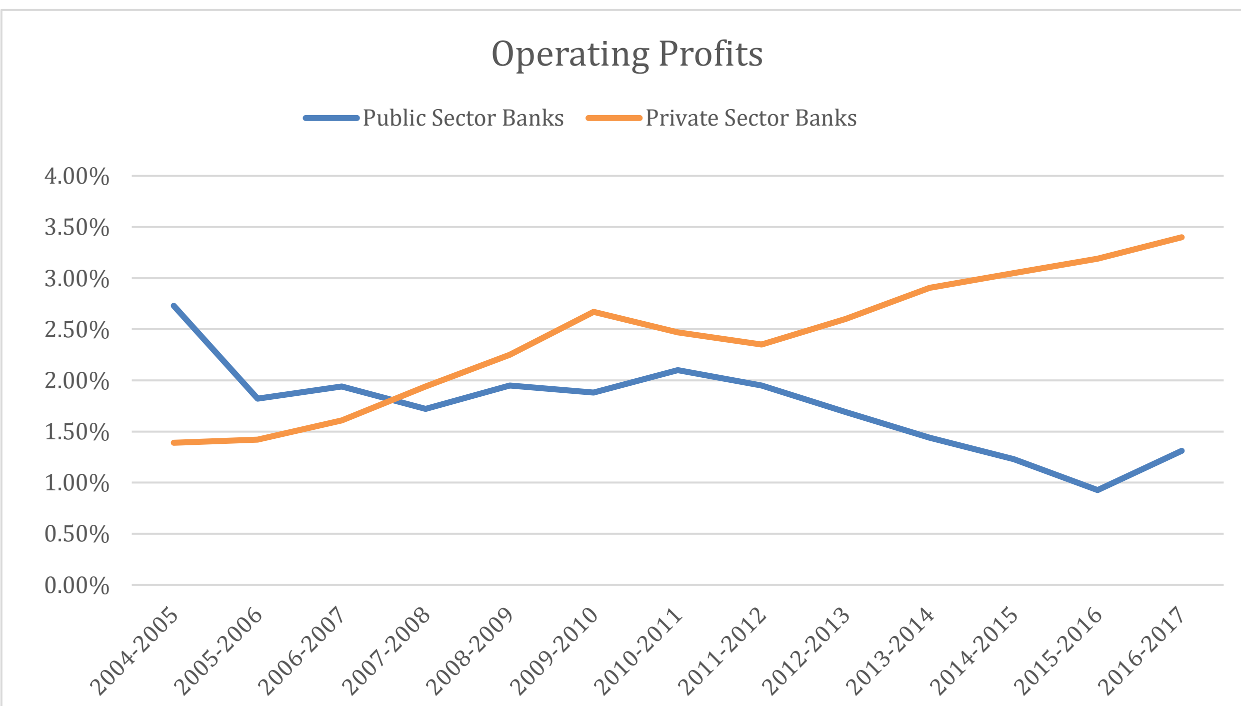

Figure 12: Operating Profits of Public and Private Sector

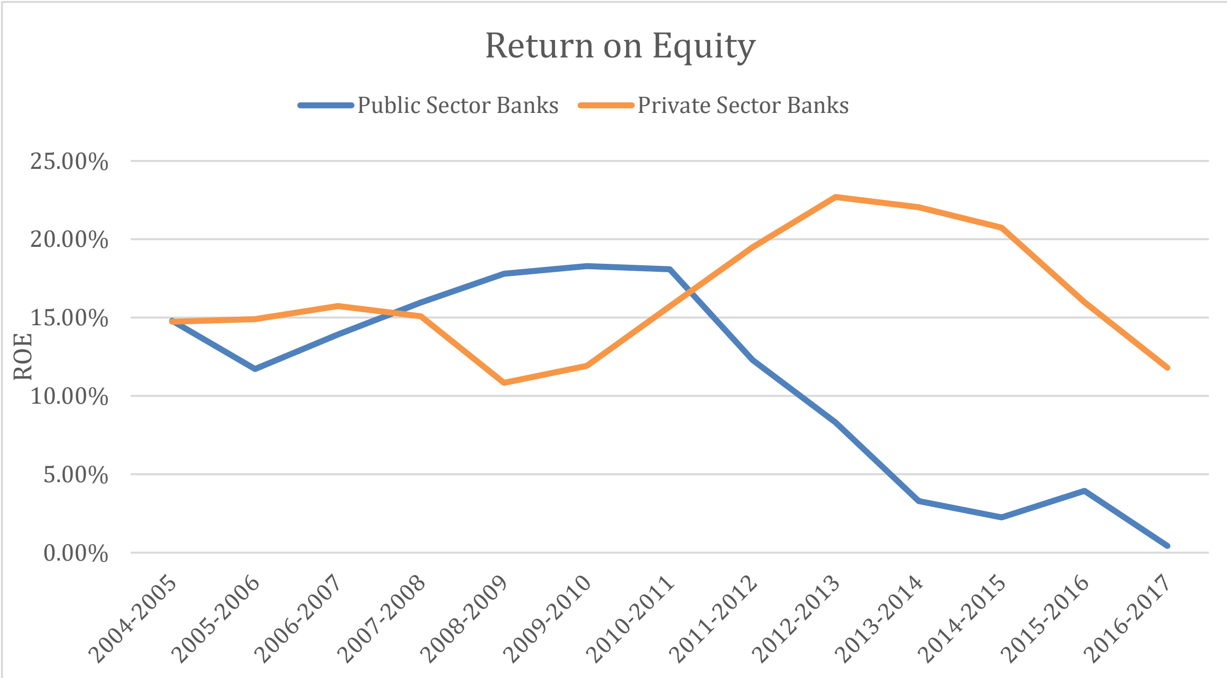

Figure 13: ROE of Public and Private Sector Banks

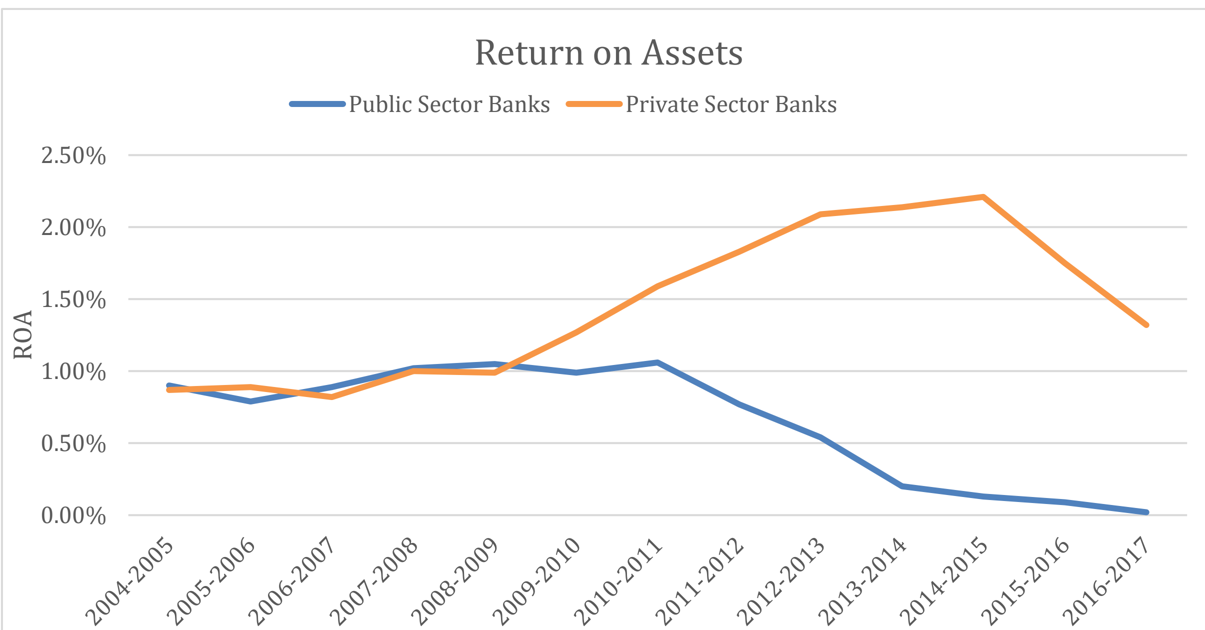

Figure 14: ROE of Public and Private Sector Banks

On analyzing the three given Figures 12,13 and 14 the main points are as follows:

1. All the chosen parameters are directly proportional to the profitability of banks and high value in each of them implies that a bank is doing well.
2. For the year from 2004 – 2011, the values between the paraments are close and keep switching occasionally. After 2011 there is a gap established between the Public Sector

Banks and Private Sectors Banks wherein all the three parameters are greater for the Private Sector Banks. The difference widens substantially as the years go by and is there is a maximum gap in 2014-15. This implies that the profitability for Public Sector Banks is much lower than that of the Private Sector Banks and the data that we accumulated in the above sections correspond with this. It can also be verified by looking at Figure 15 given below. The net NPAs ratio (with respect to total assets) is similar for public and private sector banks in the 2004-2010 region. In the next phase 2010-2015 the gap widens and the ratio (net NPAs to total assets) for that of Public Sector Banks rises by a huge amount. The next phase 2015-2019 leads to an increase in the ratio of private banks along with a small amount of decrease in the gap.

3. At the end years 2015-2017, the difference is lessened in the case of ROE and ROA but not the operating profits which continue to get divulge.

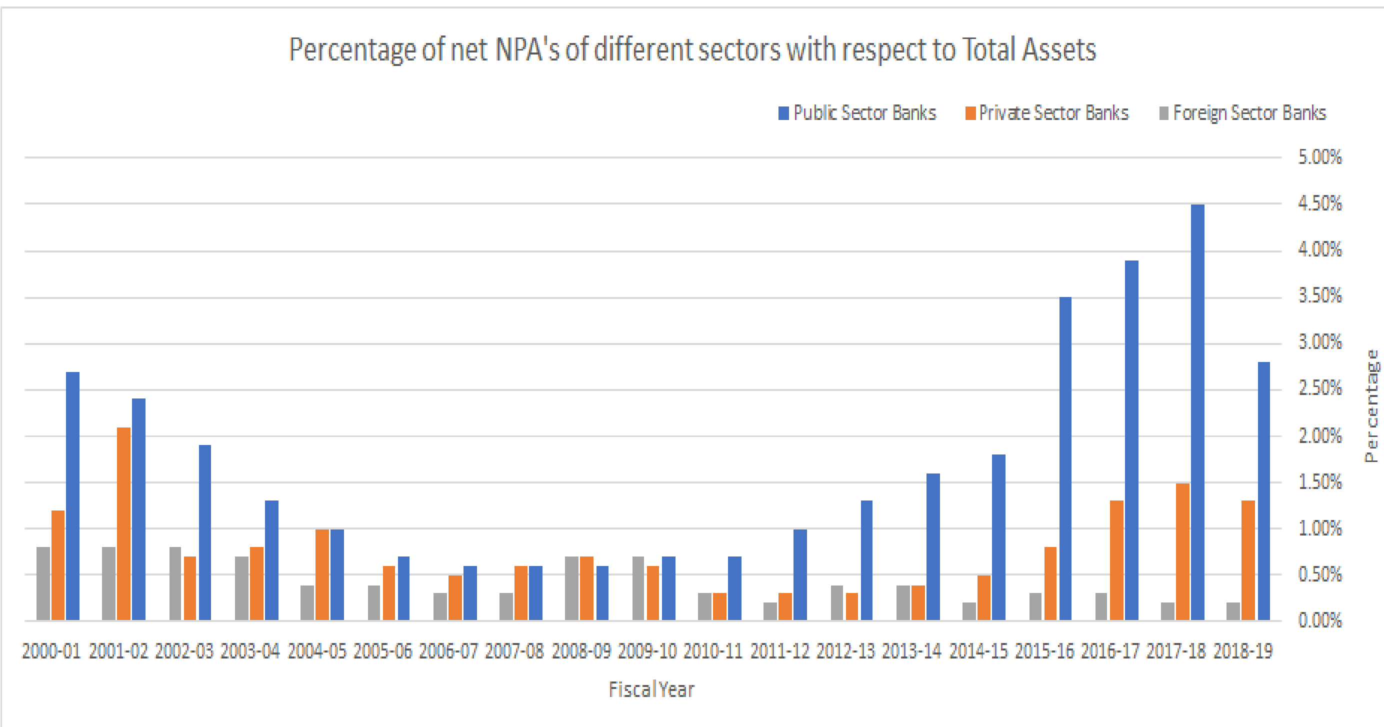

Figure 15: Net NPA’s on basis of sectors

3.3.4) Moral Hazard versus Adverse Selection

Moral hazard refers to the phenomena of an entity increasing their exposure to risk as they do not have to bear the full costs of the risk. Adverse selection refers to a situation in which either party the buyer or the seller has more information about the product (loans in this case) and do not reveal it to the other party to take advantage.

Lenders can engage in morally hazardous loans if they know that the regulation is poor, they can get away with not paying the loans and they will not be that impacted. Adverse selection can be a problem in banking as it is often difficult to distinguish healthy companies and maintain a good asset quality structure, especially for sustained periods. With the banking regulation not being the most robust banks also have even more incentive. An increasing level of NPAs implies moral hazard is at play as the banks are impacted adversely and have a lot at stake and decreasing profitability implies adverse selection. In the real world, it cannot be either one only, and both play a role to a certain extent.

For the profitability of banks operating profits are used as a proxy and a linear regression is run between the two to determine the correlation between them. The net effect and change are also visualized which helps compare the percentage of change.

The regression shows a negative correlation with a R-value of 0.66 and an R-squared value of 0.43 which is not that high. The weak value can be explained via the fact that the banks which have higher NPA's show lower profitability. Also, the equation is given in the figure to the right.

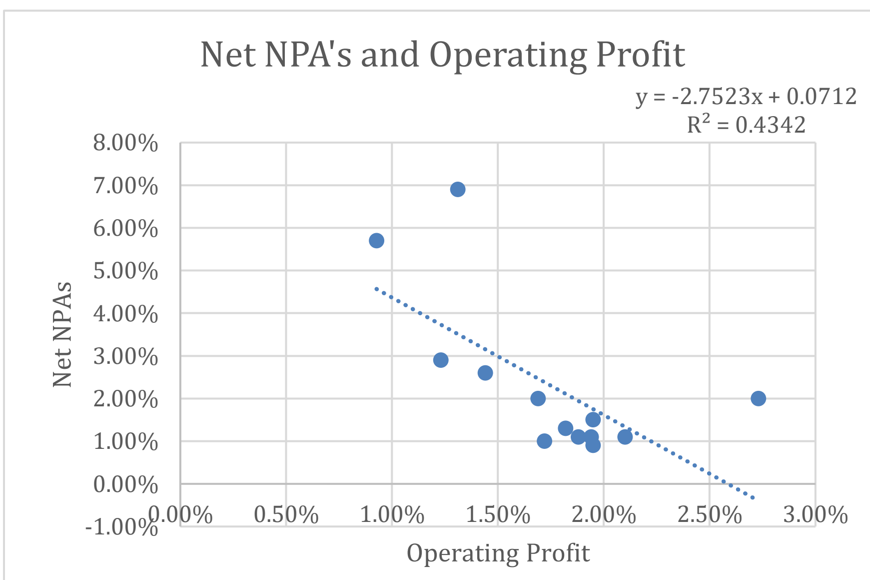

Figure 16: Regression between net NPAs and Operating Profit

The figure given below also helps demonstrate the difference between the two. In the initial stages i.e from the years 2004 – 2011 they are relatively stable with minor differences. After that from 2011 onwards, there is a major deviation. The net NPAs range from a minimum of 0.9% in 2008-09 to a maximum of 6.90% which is an increase of 666.67% whereas the profitability goes from a high of 2.10% in 2010-11 to a minimum of 0.93% in 2015-16. Which is a decrease of 55.71%. The net NPAs have a clear greater effect overall and hence we can conclude that moral hazard has a greater effect than that of adverse selection, even though they play a combined role overall. Hence in addition to the bank's negligence in doing their credit analysis, there is also a big impact of lenders not repaying loans and this can be due to a variety of reasons, some discussed in the upcoming sections.

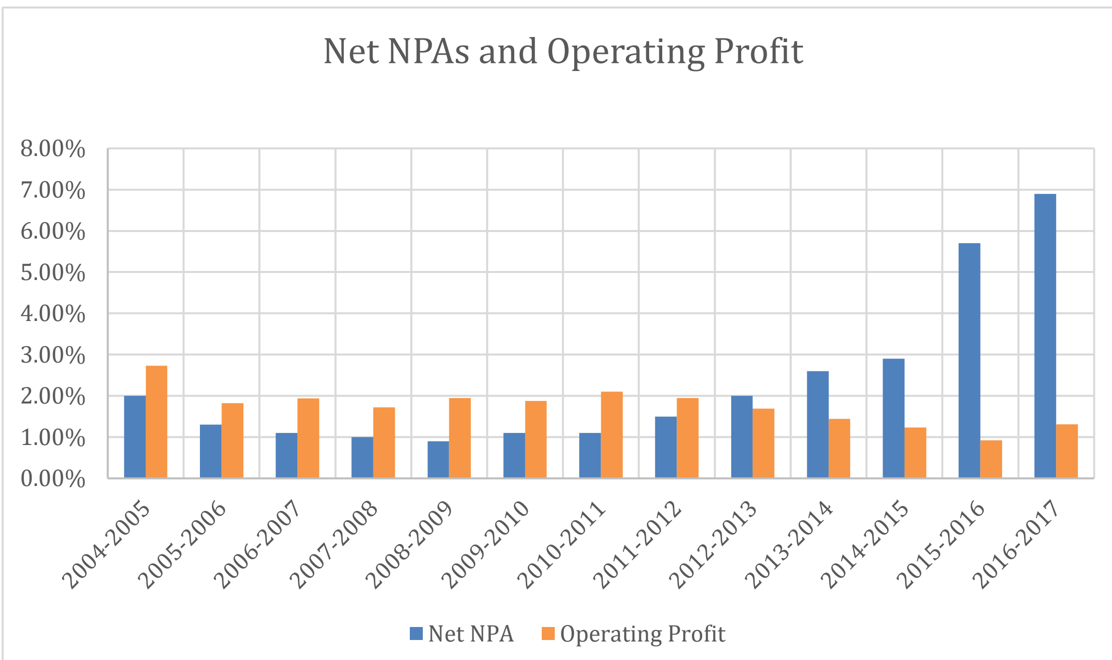

Figure 17: Comparison of Net NPAs and Operating Profits

3.3.5) Deeper look into increase NPA's post 2011

As is seen in the previous section the NPA's for the public sector bank start increasing at a much more rapid rate after 2011. The combination of both internal and external factors is responsible for the increase of NPA's post-2011 and why they reached such highs especially during 2016 -17 and 2017-18. Some of the reasons behind this are as follows:

1. The global economy was on a downtrend at the start of the previous decade and especially took a large hit due to the financial crisis of 2007-2008 and the impacts were felt in the coming years as well. Specifically, the banks changed the monetary easing during the financial crisis to reduce inflation. This also involved a doubling of repo rate from 4.75% in September 2009 to a high of 8.5% in December 2011. This led to an increase in the cost of borrowing in a short period and made it difficult for the firms. There was also a depreciation of the Rupee both during the financial crisis wherein it fell around 20% and after it during 2010-15 wherein it fell another 30%. This had a significant impact on the already over-extended corporate sector.
2. A lot of corporate debt restructuring took place in increasing magnitudes especially in public sector banks and from 2011. This was done due to the above reasons and to present a better picture of the banks, but the defaults were still rising, and the asset quality did not rise. This can be attributed to both the weak economy and a combination of weak banking governance along with corruption at these banks. There were a lot of shortcuts taking place in the banking system and advantage was being taken of the regulations.
3. Certain leeways were also given to banks to deal with the financial crisis of 2008-09. The RBI agreed to forbear certain kinds of stressed loan restructuring, due to the bad condition and hoped that there would be growth in the affected sectors in the future which would lead to resolutions. The RBI also gave banks tools to deal with stressed loans but when the sectors did not grow as expected in the coming years the banks further exploited the system using debt restructuring.
4. In 2015-16 when a special inspection was done named the Asset Quality Review to check asset quality and loan provision. This uncovered massive problems in the balance sheets of specifically public sector banks and is one of the biggest reasons for the huge increase in NPA's in 2016-17 and 2017-18.

Chapter 4: NPA Recovery Analysis

4.1) NPA Remedies

As seen in the previous chapter the percentage of NPAs has increased over the past decade. The quality of deteriorating assets has become a key issue, and this requires corrections and innovations to both reduce the percentage of bad assets and provide a fast and efficient solution to banks that help reclaim such NPAs along with appropriate penalties to the borrowers. The remedies come in a variety of forms and the two main classifications are Preemptive Strategies and Corrective Strategies.

1. Preemptive Strategies: As the name sounds Preemptive measures focus more on preventing an asset from turning bad by focusing on early warning systems and thorough analysis before lending. These consider external factors such as the general macroeconomics conditions, along with an in-depth focus on the borrower in terms of the management, past credit history, viability of the specific sector, viability of the specific project, and so on. Essentially, they are carried out to ensure the prevention of the creation of NPAs in the first place. These activities are mainly carried out before giving the loan, but continuous oversight must be maintained throughout the life of the loan.
2. Corrective Strategies: These take place after an NPA is created and they can refer to the legal, regulatory, and non-statutory tools available to the banks through which they can pursue the recovery of loans gone bad. A lot of remedies come under this category and a few legal remedies are Civil Remedies, Debt Recovery Tribunals (DRTs), SARFAESI Act 2002, Lok Adalat’s, Asset Reconstruction Companies (ARCs) and Sale of NPAs and, Bankruptcy and Insolvency Code (BIC-2016). A few of these are discussed in detail in the next section.

4.2) Legal Remedies

A detailed analysis is done on the three, Debt Recovery Tribunals (DRTs), SARFAESI Act 2002, Lok Adalat’s with data from 2012 to 2016. Insolvency and Bankruptcy Code of 2016 is also considered and compared later.

1. Debt Recovery Tribunals Act (DRTs): Established under the Recovery of Debts and Bankruptcy Act (RDB Act), 1993 with the main objective of providing an expeditious adjudication and recovery of debts due to Banks and Financial Institutions. They are used in cases where the default is higher than Rs 10 lakhs.
2. SARFAESI Act 2002: It stands for The Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest and gives the lenders (banks) the right to auction residential or commercial properties (borrower) to recover loans that have been classified as NPAs and do so without approaching the courts. It does not apply in some cases such as unsecured loans, loans below ₹100,000, or in cases where the remaining debt is below 20% of the original principal.
3. Lok Adalat: It is a formal system of dispute resolution and helps provide quick arbitrations and helps relieve the overburdened court system. Pending amounts up to 20 lakhs can be settled and recovered through these adalat's and they can often be organized under the DRTs as well.
4. Insolvency and Bankruptcy Code 2016 (IBC): It was implemented in 2016 and the objective is to provide a one-stop solution for resolving insolvencies. Before this, there were acts such as the DRT act, SARFAESI Act etc. but it was still a challenge to resolve insolvency due to a multi-layered legal framework. The act addressed this and aimed to streamline the process and make it more efficient. There are separate insolvency codes for individuals, companies, and partnership firms. A maximum time limit is placed on the amount of time needed to complete insolvency (270 days to 90 days depending on the size of the company). Regulators (Insolvency and Bankruptcy Board of India) with members from the Ministries of Finance and Law, RBI, etc. are established and oversee the proceeding and resolutions. The insolvency process is being managed by licensed professionals. Also, two separate tribunals are set up to see oversee the process of insolvency resolutions:
    (i) National Company Law Tribunal for Companies and Limited Liability Partnership firms
    (ii) Debt Recovery Tribunal (DRT) for individuals and partnerships

4.2.1) Data Visualization

Three Figures related to the recoveries of NPAs through the DRT act, SARFAESI Act and Lok adalats are given below.

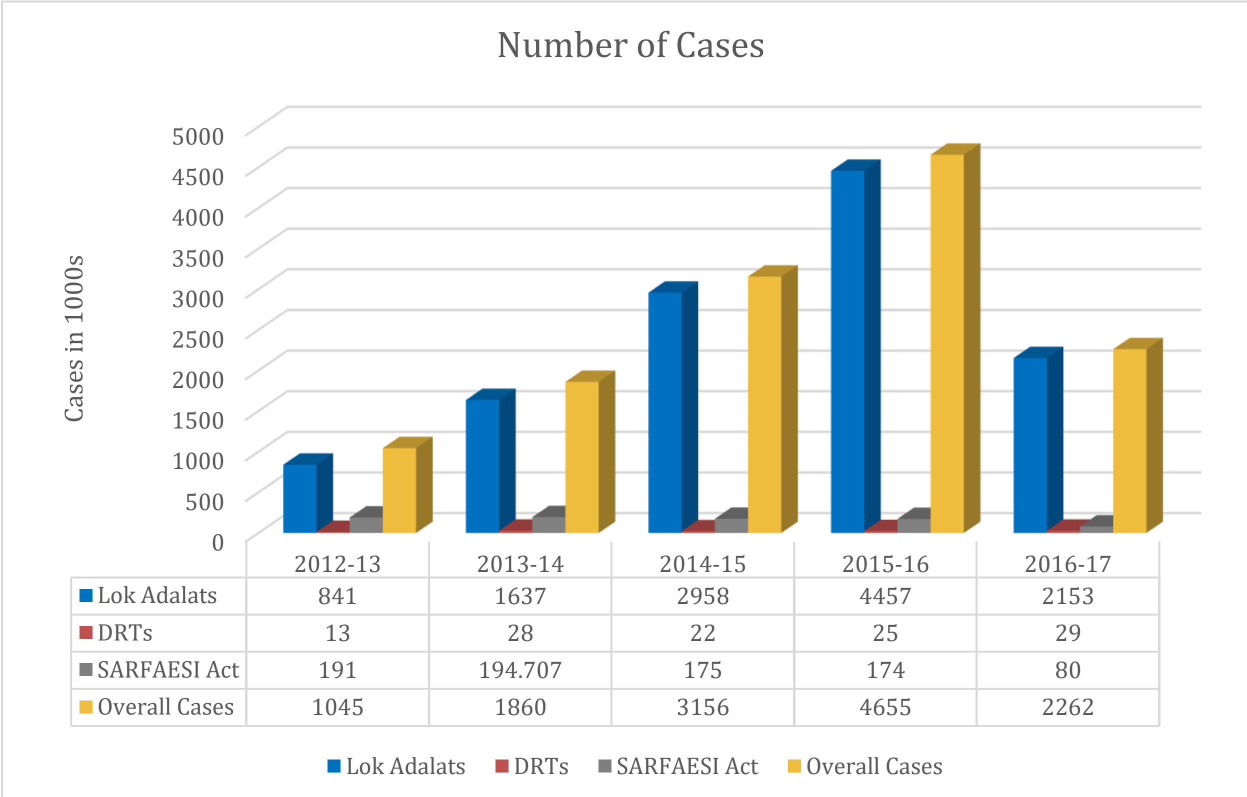

Figure 18: Number of Cases as per Recovery Channels

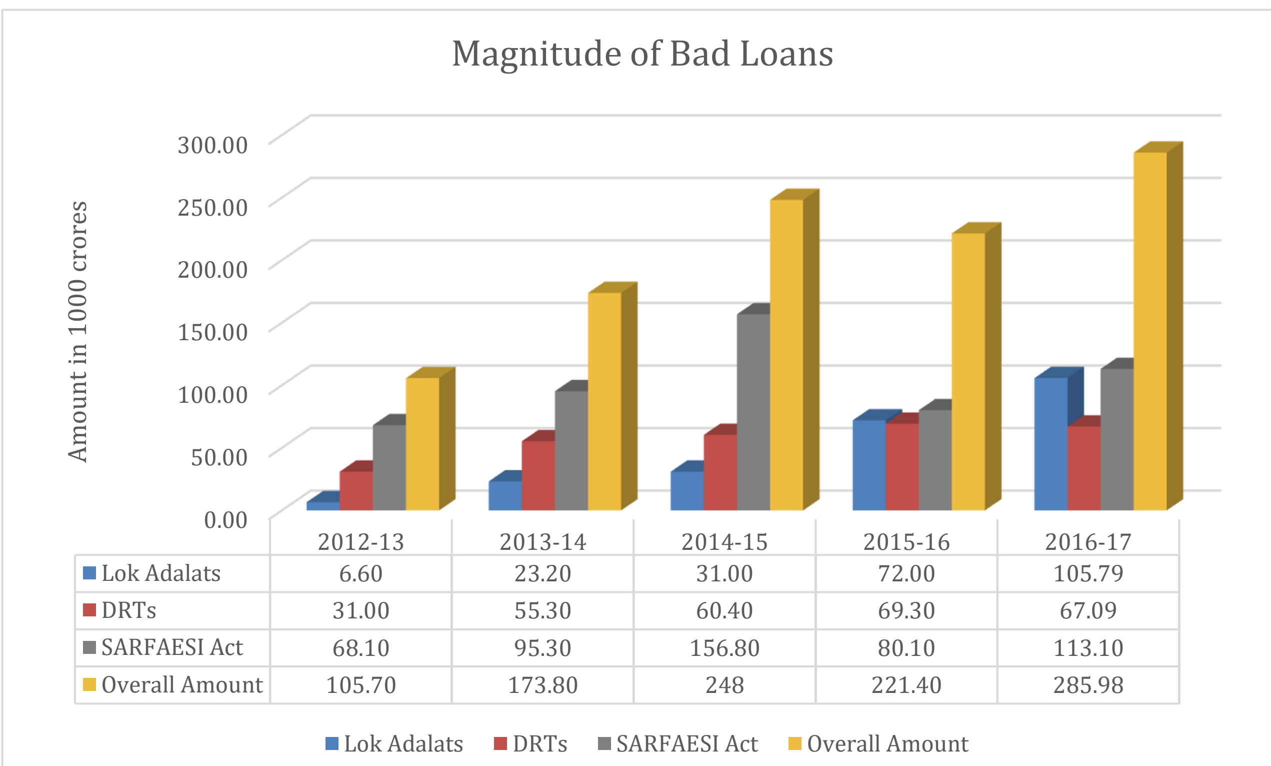

Figure 19: Amount Involved in recovery as per Recovery Channels.

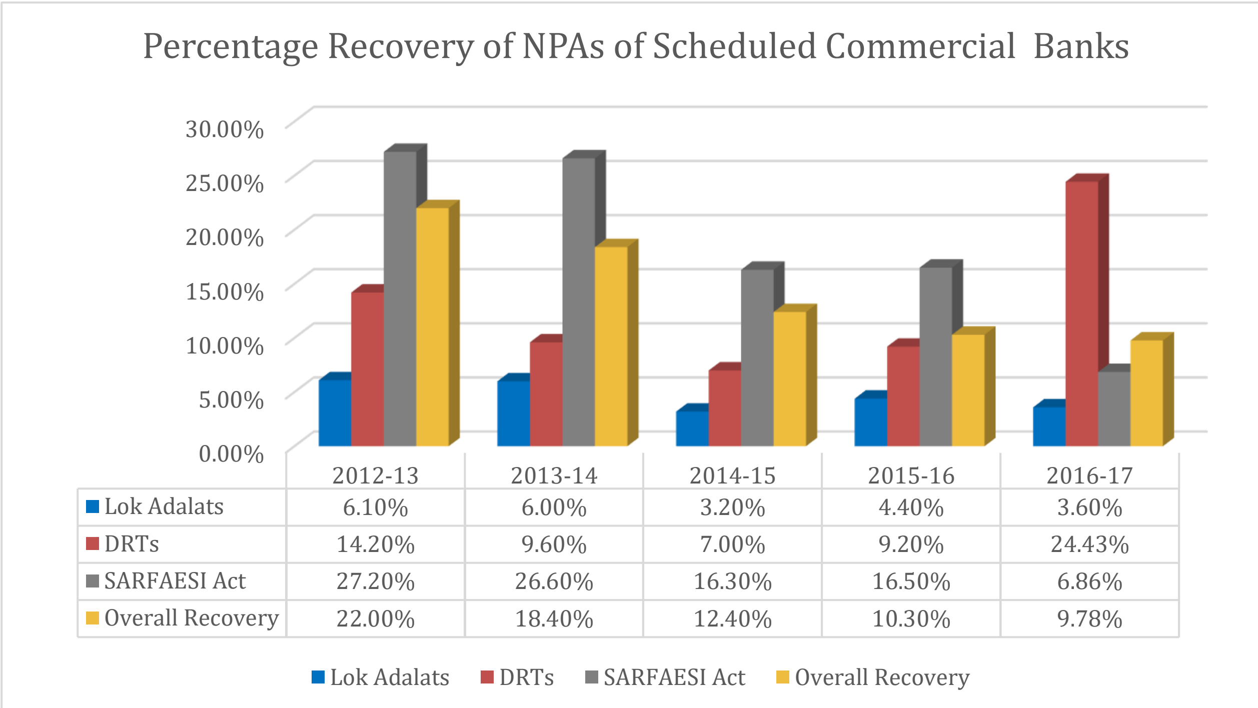

Figure 20: Recovery Percentage as per Recovery Channels

4.2.2) Analysis

The major points that can be inferred from the graphs are as follows:

1. The overall percentage recovered has decreased from 6.1% in 2012-13 to 3.6% in 2016-17. This overall trend is worrisome.
2. In terms of the number of cases and the total amount it is observable that the maximum amount, of cases (at over 85%) is due to the Lok Adalats and it has only increased in the five years and stands at 95% in 2016-17. The amount involved due to Lok Adalats though is the least out of the three recovery methods initially. It has increased over the years and reached a maximum percentage of 37% in 2016-17 from 6.2% in 2012-13. This makes sense as these cases only allow resolutions up to 20 lakhs. Regarding the recovery percentage, there has been a gradual decline from 6.10% in 2012-13 to 3.60% in 2016-17.
3. The number of cases referred to the DRTs is on average 1% of the total cases throughout the five years. The amount involved through them was initially at 29% in 2012-13 and remained around that much for a few years and is currently at 23.5% in 2016-17. The recovery percentage for the DRTs initially decreased from 14.20% in 2012-13 to 7% in

2014-15 but has increased to a maximum of 24.43% in 2016-17 (highest amongst the three sectors).

4. Cases under the SARFAESI Act constitute the range of 5% to 18% of the total cases. The percentage of cases has declined continuously from 18.3% in 2012-13 to 3.54% in 2016-17. It constitutes the maximum amount involved through the legal process compared to the other two. The percentage is at 64.4% in 2012-13 but it has declined over the years and was at 39.5% as of 2016-17. It also constitutes the highest recovery percentage initially which was maximum in 2012-13 at 27.20% but has declined to 6.86% in 2016-17.

4.2.3) Insolvency and Bankruptcy Code 2016 (IBC)

A look at the recovery of bad loans through three methods the DRT act, SARFAESI Act, and Lok Adalat was done in the previous section. The recent code of IBC was also discussed but due to the unavailability of data directly from the RBI source, it was not compared. The given Figure 19 shows how much of an impact this code has had. The percentages of recovery by all three methods combined were dropping continuously from around 50% in 2007-08 to 10.3% in 2015-16. Since the introduction of IBC, the percentage is extremely high at 41.3% for 2017-18 and 46.1% for 2018-19 and it continues to be so. Overall, there is an improvement in the levels despite a few issues such as larger tickets taking way longer for resolution (500+ days), a few sectors (chemical and metal) witnessing more resolutions than others, average recovery rate rising but only till the upper limit of 330 days.

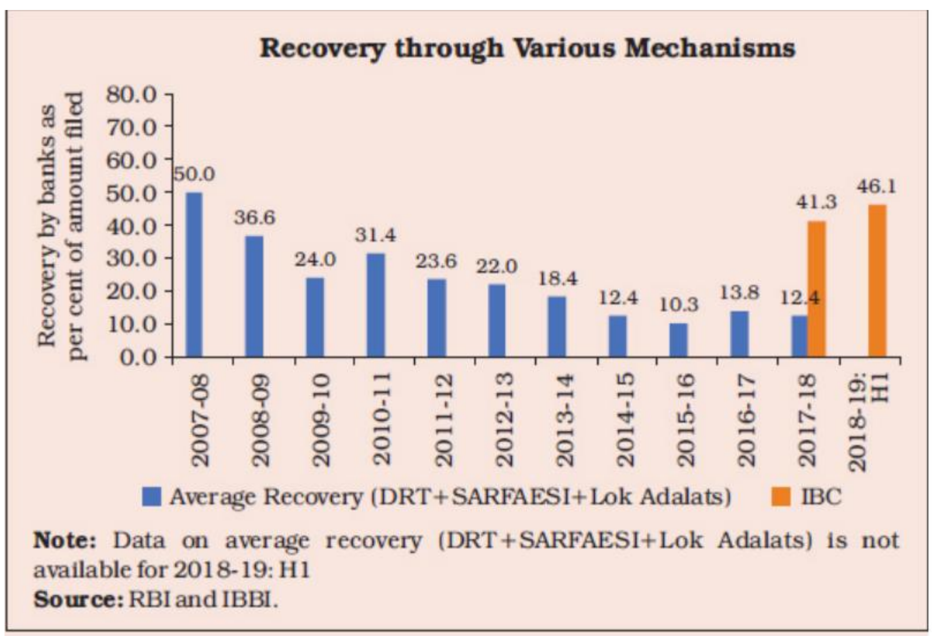

Figure 21: Recovery Percentage along with IBC

Chapter 5: Conclusions

Chapter 1 starts and provides a basic idea as to NPAs its importance especially for India as a developing country and comparisons are made with the rest of the world. India is 33rd in terms of highest NPA's worldwide and at 3rd place in Asia which reflects the seriousness of the problems. The biggest weak spot of the banking sector in India is the number of bad loans and a chain is only as strong as the weakest link.

There has been a lot of research into finding out the cause behind the high number of NPAs and some of them are highlighted in Chapter 1. An analytical study is then undertaken which compares the ratio of NPAs (both net and gross) of scheduled commercial banks across the public, private and foreign sectors. The result is that public sector banks are the biggest contributors to the figure followed by private sector banks and foreign banks. Also, this is partly because the total assets for the private sector banks are also the largest followed by the private sector banks and then the foreign sector banks in India. Despite this, even the ratio (NPAs to advances) of the public sector banks is the highest is followed by the private sector and then the foreign sector banks. The profitability of banks is looked at using Return on Equity, Return on Assets, and Operating Profit as proxies and it gives a similar picture. Chapter 4 then discusses the ways to prevent and cure the number of bad assets and the three main legal ways – Debt Recovery Tribunals (DRTs), SARFAESI Act 2002, Lok Adalat's are looked at and analyzed. There is an overall decrease in the ratio of recoveries despite these Acts and the recently launched Insolvency and Bankruptcy Code 2016 (IBC) which acts as a one-stop solution for insolvency seems to be doing much better.

India is a developing country, and we are learning as we go. To do anything in the most efficient way possible in a country of 140 crore people will still take a huge amount of time and to top that it is not possible to make the most efficient decisions. The financial frameworks of our country are robust today. We must undertake more research and apart from finding out the causes and solutions for NPAs, we must also look to strengthen the system (economic, judicial, legislative) so that effective implementation can take place. Not only this but the continuous and comprehensive evaluation is important to keep a track of it all and amendments must be made swiftly wherever applicable. Only with the overall development will we be able to make steady progress and keep up the pace.

References

- Subramanyam, T.. (2020). A Critical Review on the impact of Non-Performing Assets in Indian Banking Management System. Seybold Report. 25. 285-291.

- Agarwala, V., & Agarwala, N. (2019). A critical review of non performing assets in the Indian banking industry. Rajagiri Management Journal, 13(2), 12–23. https://doi.org/10.1108/ramj-08-2019-0010

- Thoms, R. and Vays, R. K. (2016). Loan Recovery Strategy in Indian Banks, International Journal of Commerce and Management Research, Vol. 2, No. 12, pp. 158-164.

- Bhaskaran, R., Bhalla, L., Sarin, V., Kaur, S., Rahman, A., Singh, G., Bhattacharya, A.M., Jha, A.K. and Verma, P. (2016), "Non-performing assets of public and private sector banks in India – a comparative study", International Journal of Services and Operations Management, Vol. 25 No. 2, pp. 155-172.

- Banerjee, R., Verma, D. and Jaiswal, B. (2018), "Non-performing assets: a comparative study of the Indian commercial banks", International Journal of Social Relevance and Concern, Vol. 6 No. 2, pp. 5-21.

- Dey, S. (2018), "Recovery mechanisms of non-performing assets in Indian commercial banks: an empirical study", NSOU Open Journal, Vol. 1 No. 2.

- Mittal, Raj & Suneja, Deeksha. (2017). The Problem of Rising Non-performing Assets in Banking Sector in India: Comparative Analysis of Public and Private Sector Banks. International Journal of Management, IT & Engineering. 7. 384-398.

- Hazarika, D. (2019). Non Performing Assets In Indian Banking Sector: An Analysis Of Magnitude, Trend And Recovery. *Non Performing Assets In Indian Banking Sector: An Analysis Of Magnitude, Trend And Recovery*, 1748–1753. http://www.ijstr.org/

- Agarwal, P. (2019). Profitability of Indian Public and Private Sector Banks: A Comparative Study. *International Journal of Research and Analytical Reviews (IJRAR)*, *6*(1), 919–928. https://doi.org/10.6084/m9.doi.one.IJRAR190M001

- Reserve Bank of India - Master Circulars (rbi.org.in)
- Structure of Banking Sector in India (jagranjosh.com)
- Bank nonperforming loans to total gross loans (%) - United States, India, China, Japan, Germany | Data (worldbank.org)
- India has the second worst NPA ratio among large economies (theprint.in)
- Non-performing loans in Asia | TheGlobalEconomy.com
- What are the main functions of Reserve Bank of India? (jagranjosh.com)
- Cooperative banking - Wikipedia
- Types of Banks in India - Category and Functions of Banks in India (byjus.com)
- Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 - Wikipedia
- Home | DRT
- 1991: Economic Reforms | India Before 1991 (indiabefore91.in)
- Nishith Desai Associates: Analysing 2018 through the lens of the Insolvency Code
- 3 years of IBC: 7 charts offer insights into how the system has evolved | Business Standard News (business-standard.com)
- The default line : The Tribune India