

COMPARATIVE STUDY OF NET INTEREST MARGIN (NIM) OF SELECTED INDIAN PUBLIC AND PRIVATE SECTOR BANKS

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ABSTRACT

Net Interest Margin (NIM) of commercial banks varies from economy to economy due to variation in country, industry and firms specific factors. This study aims to assess and identify the determinants of NIM in the Indian Banking Industry. The data has collected from annual reports of selected Bank for the period 2008 to 2017 and MS Excel has been used for analysis of data. In this study, assessment was made to identify determinants of NIM, which is the ratio of net interest income to earning assets using panel data. The results of the study revealed that cost efficiency, implicit interest payment, competition, and scale efficiency have positive and significant effect on NIM. However, liquidity risk and management efficiency has negative and significant effect on NIM. On the other hand, credit risk, interest rate risk, capital risk, inflation and economic growth do not seem to have significant impact on banks' performance.

Keywords: Net Interest Margin, Banking Industry, Macroeconomic Variables, Banking Performance

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INTRODUCTION

Finance is an integral part of any financial system and allows businesses to take advantage of opportunities. Financial institutions are important in managing and circulating fund within the economy. In doing so, financial institutions contribute towards economic growth and efficiency of a country through optimal allocation of resources. They provide platform for continuous restructuring of the economy through reallocating financial resources to the fastest growing sectors. For financial institutions to play their expected role, a well functioning financial system is a must, as a weak financial system is one of the reasons for many countries to remain poor.

Under developing economies like India where the financial sector is largely dominated by banks, the effective and efficient functioning of the banking sector plays significant role in accelerating economic growth. In order to achieve the goal of efficient allocation of resources, the intermediation role of banks should be carried out at the lowest possible cost. However, studies conducted to assess the effect of intermediation cost (interest margin) of banks in different parts of the world show variations. The main reason behind this variation associated with both internal and external factors such as credit risk, liquidity risk, interest rate risk, cost efficiency, management quality, competition, inflation, GDP growth, etc. and change in any of these factors leads to change in interest margin and economic growth.

The NIM ratio measures the profit a company makes on its investing activities as a percentage of total investing assets. Banks and other financial institutions typically use this ratio to analyze their investment decisions and track the profitability of their lending operations. This way they can adjust their lending practices to maximize profitability.

Investment firms also use this margin to measure the success of a fund manager's investment decision-making. A positive percentage indicates that the fund manager made good decisions and was able to a profit on his investments. A negative ratio, on the other hand, means the fund manager lost money on his investments because the interest expenses exceeded the investment earnings.

The net interest margin formula is calculated by dividing the difference of investment income and interest expenses by the average earning assets.

Net Interest Margin = (Investment Income – Interest Expenses) / Average Earning Assets

LITERATURE REVIEW

Dr. Virender Koundal (2012) concludes that commercial banks in India get favorable effects because of the various reforms. Even though the overall profitability has also improved, the major benefit is taken by the private sector banks and foreign banks whereas public sector banks are still lagging behind on various financial parameters.

Seema Malik (2014) has analyzed the effect of technology on transformation of banking in India and also studied the benefits and challenges of changing banking trends. Technology and financial innovations have led to tremendous improvement in banking services and operations over the past decade. Survival, growth and profitability of banks depend upon the organizational effectiveness and operational efficiency in today's competitive scenario where customers' needs are changing everyday and technology is touching new highs.

Indian Brand Equity Foundation (2015) has studied that Indian banks are focusing on adopting an integrated approach to risk management. Banks have already embraced the international banking supervision accord of Basel II. According to RBI, majority of the banks already meet with the capital requirements of Basel III, which has a deadline of March 31, 2019. Most of the banks have put in place the framework for asset-liability match, credit and derivatives risk management. As per their report, rising incomes are expected to increase the need for banking services in rural areas which will positively affect the growth of the banking sector. The RBI has relaxed its branch licensing policy which emphasized the need to focus on spreading the reach of banking Services to the un-banked population of India.

Brock et al., (2000): The cost of funding affects the investment potential and capital allocation of the banks. The increasing cost of intermediation negatively affects the growth potential of the economy. The increasing financial intermediation cost affects banks' profitability and thus, being

a reason for decreasing efficiency of the banking sector as a whole. High interest margin is also considered ‘negatively’ as it leads to ‘disintermediation’.

Research Gap

After reviewing the available literature research gap has been observed i.e. the research on NIM did not happen after Dr. Virender Koundal (2012) research paper. It means, since last 5 years the research on NIM has not been done.

OBJECTIVES OF THE RESEARCH

- 1) To study the profitability of 08 Selected Indian public and private Sector banks.
- 2) To find out impact of NIM on ROA.

RESEARCH TYPE:

Analytical Research has used for the research. Researcher has to use facts or information already available, and analyze them to make a critical evaluation of the material. It involves the in-depth study and evaluation of available information in attempts to explain complex phenomenon.

SAMPLING METHOD:

Researcher wanted to find out characteristics of a population and the objective of the study. Hence, Purposive sampling method has used. Purposive sampling is also known as judgmental, selective, or subjective sampling.

SELECTION OF SAMPLE:

The Indian Banks were selected for the study. Researcher has undertaken top 4 public banks and private banks each for the study. While selecting the banks researcher consider their market capitalization and market shares.

SAMPLE SIZE: 08 Indian Banks (04 Public and 04 private sector Banks)

PUBLIC BANKS-	PRIVATE BANKS-
STATE BANK OF INDIA	AXIS BANK
BANK OF MAHARASHTRA	KOTAK MAHINDRA BANK
BANK OF BARODA	HDFC BANK
BANK OF INDIA	ICICI BANK

DATA COLLECTION

- Secondary Data

Instruments used for data collection-

- ✓ Annual Reports of 04 Public and 04 private sector Banks
- ✓ Websites- <https://www.moneycontrol.com/>

PERIOD OF STUDY:

Researcher has undertaken 10 years financial data of selected banks i.e. 2008-2017 for the study.

TOOLS USED FOR DATA ANALYSIS

A research design is a plan according to which observations are made and data is assembled. The Present study is based on the secondary data and analytical in nature.

For measuring various phenomena and analyzing the collected data effectively and efficiently to draw sound conclusions, certain statistical techniques were used. Trend analysis, graphical analysis and descriptive statistics like as Mean has been used. Also researcher used the tools like MS-Excel for analysis purpose.

FORMULA-

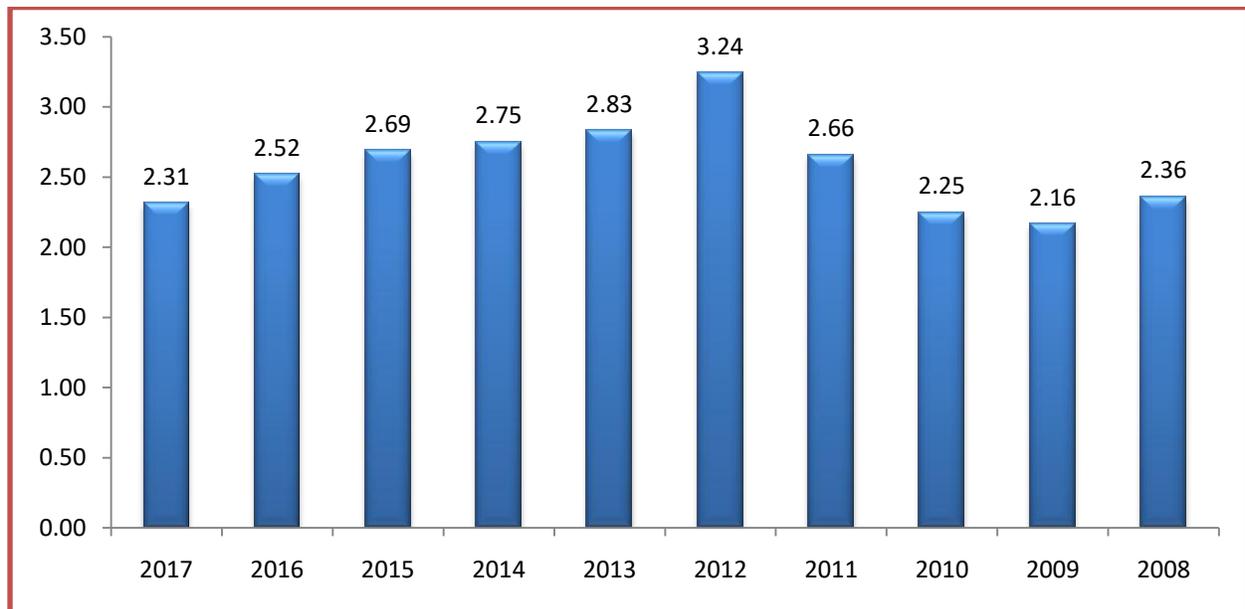
Net Interest Margin = (Investment Income – Interest Expenses) / Average Earning Assets

DATA ANALYSIS AND INTERPRITATION**PUBLIC SECTOR BANKS-****STATE BANK OF INDIA****Table No. 01- NIM of State Bank of India**

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	175,518.24	113,658.50	61,859.74	2,674,380.65	2.31	0.41
2016	163,685.31	106,803.49	56,881.82	2,259,063.05	2.52	0.46
2015	152,397.07	97,381.82	55,015.25	2,048,079.80	2.69	0.76

2014	136,350.80	87,068.63	49,282.17	1,792,234.60	2.75	0.65
2013	119,657.10	75,325.80	44,331.30	1,566,261.03	2.83	0.91
2012	106,521.45	63,230.37	43,291.08	1,335,519.24	3.24	0.88
2011	81,394.36	48,867.96	32,526.40	1,223,736.21	2.66	0.71
2010	70,993.92	47,322.48	23,671.44	1,053,413.74	2.25	0.88
2009	63,788.43	42,915.29	20,873.14	964,432.08	2.16	1.04
2008	48,950.31	31,929.08	17,021.23	721,526.32	2.36	1.01
Mean					2.58	

Graph No. 01- NIM of State Bank of India

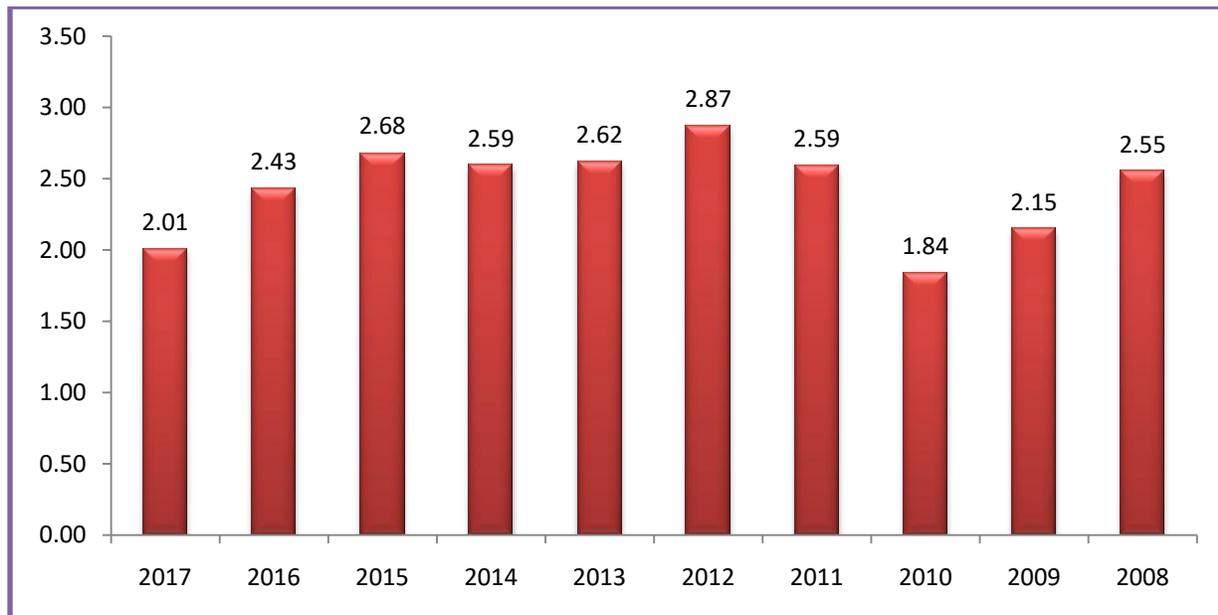


Interpretation:

From the above Table No. 01 it has been observed that, the NIM averaged 2.58%, highest was 3.24% in the year 2012 and lowest was 2.16% in the year 2009. It has been seen that decreasing trend of the NIM since 2013 due to increasing NPA from same period and it's also resulted on Return on Asset. The ROA in the year 2016 was 0.46% and it became 0.41% in 2017 because decreasing NPA. The low margin is partly affected by a very low return on the investment portion of the balance sheet. However, we have also seen decrease spread on loan and deposit rates over the past five years.

BANK OF MAHARASHTRA**Table No. 02- NIM: Bank of Maharashtra**

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	12,061.96	8,887.27	3,174.69	158,117.52	2.01	-0.86
2016	13,052.99	9,174.29	3,878.70	159,661.55	2.43	0.07
2015	12,665.44	8,790.40	3,875.04	144,640.65	2.68	0.33
2014	11,956.66	8,447.73	3,508.93	135,254.47	2.59	0.3
2013	9,613.43	6,580.08	3,033.35	115,832.53	2.62	0.74
2012	7,213.96	4,696.88	2,517.08	87,642.35	2.87	0.55
2011	5,563.09	3,594.69	1,968.40	75,998.66	2.59	0.47
2010	4,735.56	3,439.31	1,296.25	70,601.22	1.84	--
2009	4,291.56	3,035.03	1,256.53	58,578.17	2.15	--
2008	3,540.58	2,311.79	1,228.79	48,134.79	2.55	--
Mean					2.43	

Graph No. 02- NIM: Bank of Maharashtra**Interpretation:**

From the Table No. 02 depicts that, the averaged Net Interest Margin of the Bank of Maharashtra was 2.43%, maximum was 2.87% in the year 2012 and minimum was 1.78% in the year 2010. It has been seen that the NIM has decreasing since 2013 due to increasing NPA. The NPA of the

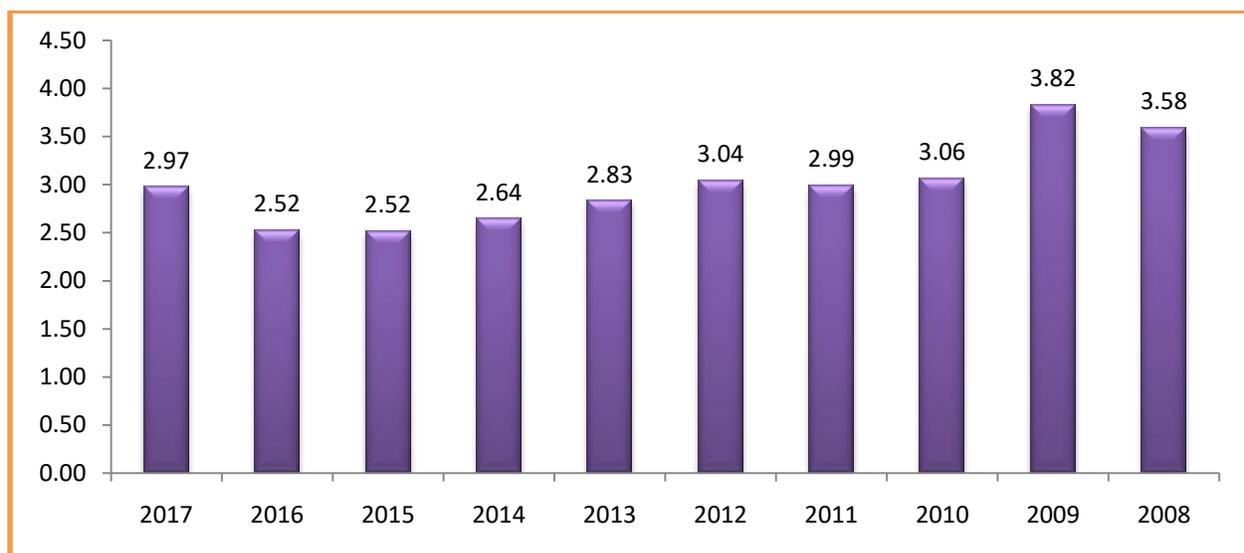
Bank of Maharashtra in the year 2013 was 0.52% and in the year 2017 it headed 11.76. The figure roughly translates to near 10% of all loans given. This means that about 11.76% of loans are never paid back, resulting in substantial loss of money to the banks.

BANK OF INDIA

Table No. 03- NIM: Bank of India

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	46,063.18	27,464.74	18,598.44	626,309.27	2.97	-0.24
2016	45,449.01	30,071.84	15,377.17	609,913.93	2.52	-0.94
2015	47,662.61	32,086.24	15,576.37	618,697.76	2.52	0.03
2014	42,201.94	27,079.57	15,122.37	573,190.20	2.64	0.51
2013	35,674.97	22,884.93	12,790.04	452,602.72	2.83	0.65
2012	31,801.84	20,167.23	11,634.61	383,299.57	3.04	0.72
2011	24,393.49	13,941.03	10,452.46	349,853.08	2.99	0.82
2010	20,494.63	12,122.04	8,372.59	273,537.84	3.06	--
2009	19,399.22	10,848.45	8,550.77	223,791.46	3.82	--
2008	14,472.15	8,125.95	6,346.20	177,066.90	3.58	--
Mean					3	

Graph No. 03- NIM: Bank of India



Interpretation:

Table No. 03 showing that, the average Net Interest Margin of the Bank of India was 3.00%, highest was 3.82% in the year 2009 and lowest was 2.52% in the years 2015 & 2016. It's has been seen that, the NIM of the Bank of India in the year 2017 has increased (2.97%). It has been observed that, the Borrowings of the Bank of India were increased 5.13% as compared to last year (2016) and NPA has also decreased from 7.79 to 6.90.

BANK OF BARODA**Table No. 04- NIM: Bank of Baroda**

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	42,199.93	28,686.52	13,513.41	694,875.41	1.94	0.2
2016	44,061.28	31,321.43	12,739.85	671,376.48	1.90	-0.78
2015	42,963.56	29,776.32	13,187.24	714,988.55	1.84	0.49
2014	38,939.71	26,974.36	11,965.35	659,504.53	1.81	0.75
2013	35,196.65	23,881.39	11,315.26	547,135.44	2.07	0.9
2012	29,673.72	19,356.71	10,317.01	447,321.46	2.31	1.24
2011	21,885.92	13,083.66	8,802.26	358,397.18	2.46	1.33
2010	16,698.34	10,758.86	5,939.48	278,316.71	2.13	--
2009	15,091.58	9,968.17	5,123.41	227,406.73	2.25	--
2008	11,813.48	7,901.67	3,911.81	179,599.50	2.18	--
Mean					2.09	

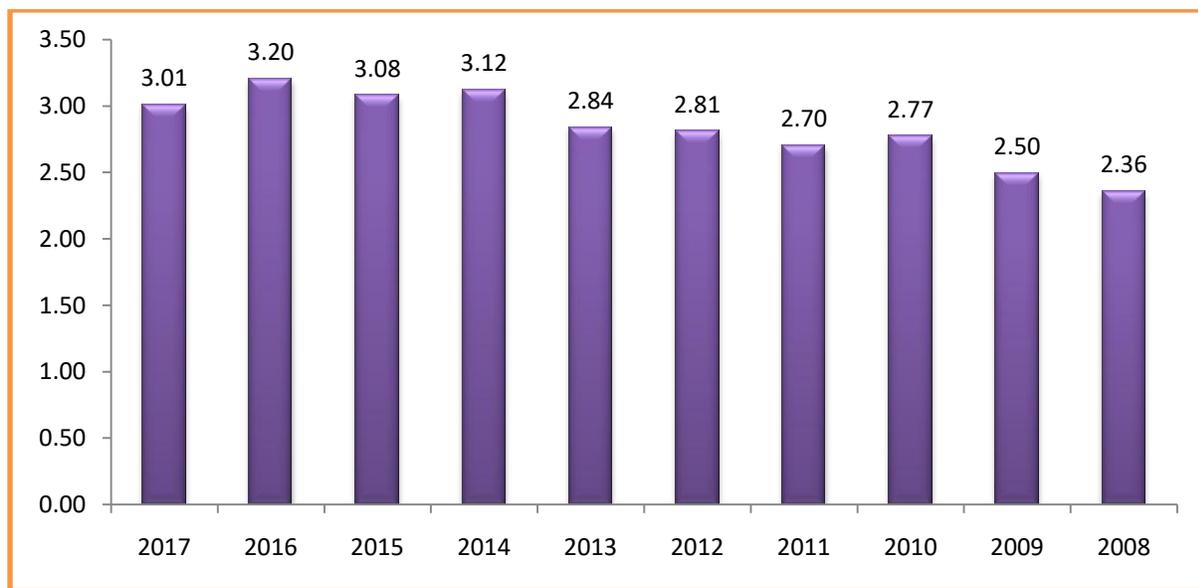
Graph No. 04- NIM: Bank of Baroda

**Interpretation:**

From the Table No. 04 it has been observed that, the average Net Interest Margin of the Bank of Baroda was 2.09%, higher was 2.46% in the year 2011 and lower was 1.81% in the year 2014. It can also be observed that, NIM was decreasing 2012 to 2014 but it also has increasing since 2015 to 2017. Because, NPA have been decreased from 5.06% (2016) to 4.72% in 2017. And it's resulted on ROA of the Bank of Baroda. ROA of the Bank of Baroda in the year 2016 was - 0.78% and it has become 0.20% in the year 2017.

PRIVATE SECTOR BANKS-**AXIS BANK****Table No. 05- NIM: AXIS BANK**

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	44,542.16	26,449.04	18,093.12	601,467.66	3.01	0.65
2016	40,988.04	24,155.07	16,832.97	525,467.61	3.20	1.72
2015	35,478.60	21,254.46	14,224.14	461,932.39	3.08	1.83
2014	30,641.16	18,689.52	11,951.64	383,244.89	3.12	1.78
2013	27,182.57	17,516.31	9,666.26	340,560.67	2.84	1.7
2012	21,994.65	13,976.90	8,017.75	285,627.80	2.81	1.68
2011	15,154.81	8,591.82	6,562.99	242,713.37	2.70	1.68
2010	11,638.02	6,633.53	5,004.49	180,647.87	2.77	--
2009	10,835.49	7,149.27	3,686.22	147,722.06	2.50	--
2008	7,005.32	4,419.96	2,585.36	109,577.84	2.36	--
Mean					2.84	

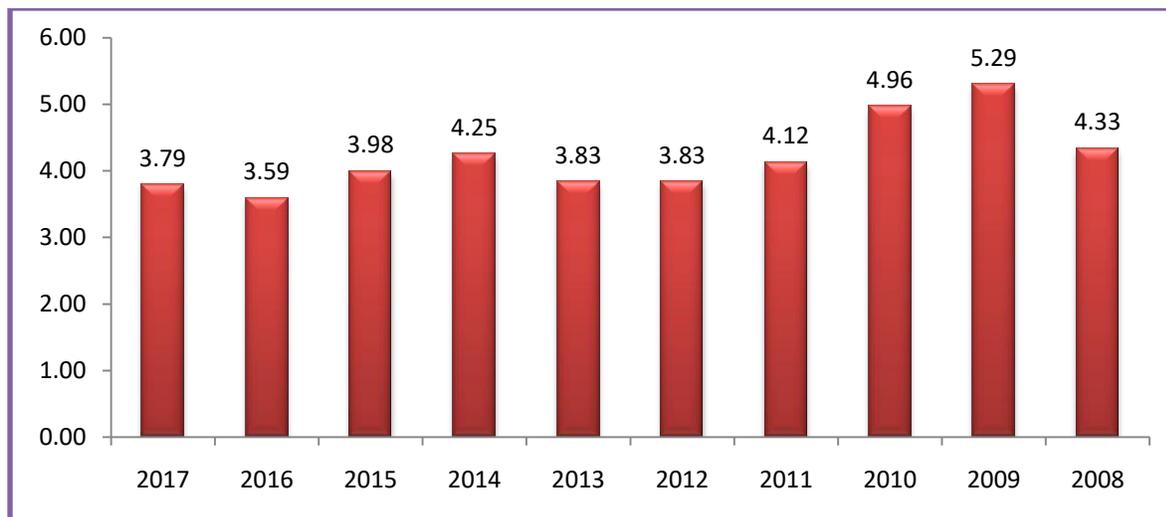
Graph No. 05- NIM: AXIS BANK

Interpretation:

From the table No. 05 it has been seen that, the average Net Interest Margin of Axis Bank was 2.84%. Higher was 3.20% in the year 2016 and lower was 2.36% in 2008. It means the NIM of Axis bank has increased till 2016 but, in 2017 it's declined by 3.01%, it also resulted in ROA of the bank. The ROA in the year 2016 was 1.72% and in 2017 it became 0.65%. It has been observed that, the NPA of Axis Bank has increased in 2017 (0.70 to 2.11).

KOTAK MAHINDRA BANK**Table No. 06- NIM: KOTAK MAHINDRA BANK**

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	17,698.93	9,572.78	8,126.15	214,589.96	3.79	1.73
2016	16,384.18	9,483.81	6,900.37	192,259.79	3.59	1.19
2015	9,719.87	5,496.13	4,223.74	106,012.08	3.98	1.98
2014	8,767.12	5,047.07	3,720.05	87,585.34	4.25	1.8
2013	8,042.49	4,836.82	3,205.67	83,693.68	3.83	1.81
2012	6,180.24	3,667.75	2,512.49	65,666.79	3.83	1.83
2011	4,189.75	2,092.18	2,097.57	50,850.67	4.12	1.77
2010	3,255.62	1,397.48	1,858.14	37,436.31	4.96	--
2009	3,065.14	1,546.60	1,518.54	28,711.88	5.29	--
2008	2,535.36	1,309.56	1,225.80	28,312.36	4.33	--
Mean					4.20	

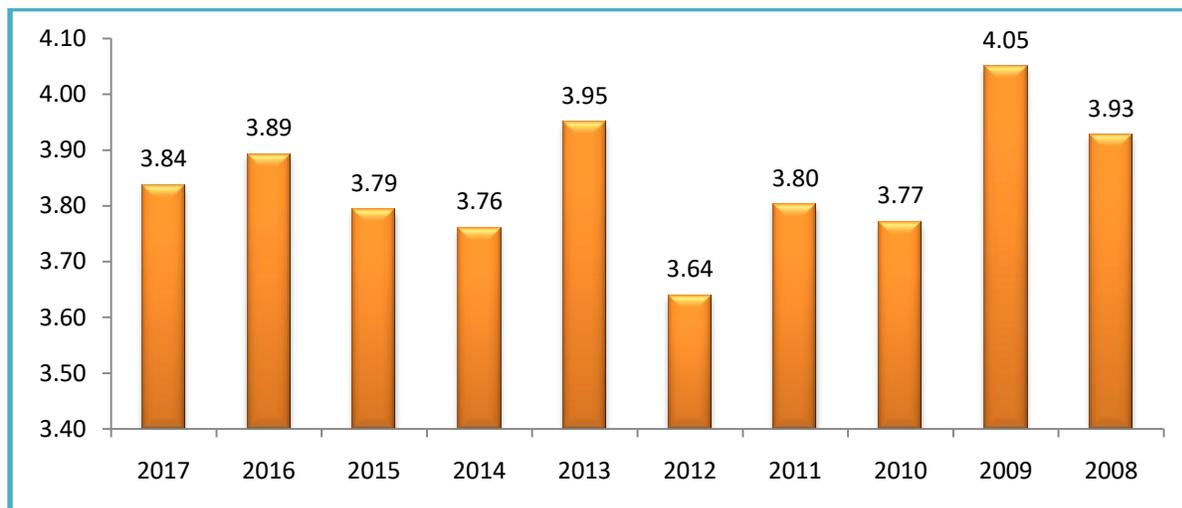
Graph No. 06- NIM: KOTAK MAHINDRA BANK

Interpretation:

Table No. 06 shows that, the average Net Interest Margin of Kotak Mahindra Bank was 4.20%, maximum was 5.29% in the year 2009 and minimum was 3.59% in the year 2016. It has been seen that the NIM of bank has fluctuating throughout the years. NIM has increased in 2017 due to increased in Interest Income by 7.71% in the same year.

HDFC BANK**Table No. 07- NIM: HDFC BANK**

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	69,305.96	36,166.73	33,139.23	863,840.20	3.84	1.88
2016	60,221.45	32,629.93	27,591.52	708,845.57	3.89	1.92
2015	48,469.90	26,074.24	22,395.66	590,503.07	3.79	2
2014	41,135.53	22,652.90	18,482.63	491,599.50	3.76	2
2013	35,064.87	19,253.75	15,811.12	400,331.90	3.95	1.9
2012	27,286.35	14,989.58	12,296.77	337,909.49	3.64	1.8
2011	19,928.21	9,385.08	10,543.13	277,352.61	3.80	1.6
2010	16,172.90	7,786.30	8,386.60	222,458.56	3.77	--
2009	16,332.26	8,911.10	7,421.16	183,270.78	4.05	--
2008	10,115.00	4,887.12	5,227.88	133,176.60	3.93	--
Mean					3.84	

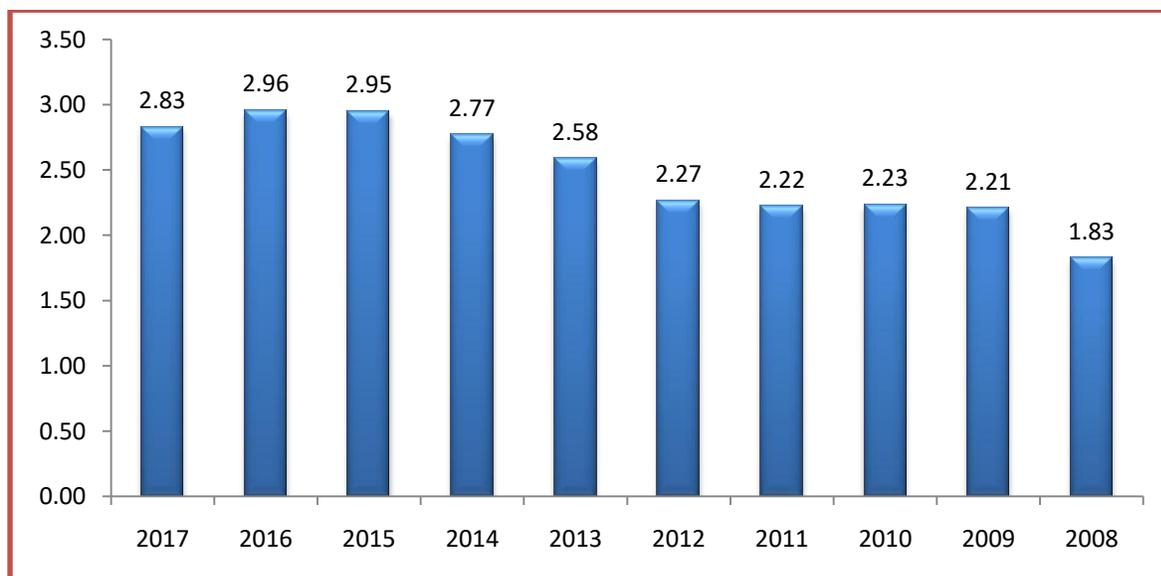
Graph No. 07- NIM: HDFC BANK

Interpretation:

The Table No. 07 depicts that, the average NIM of HDFC Bank was 3.84%, maximum was 4.05% in the year 2009 and minimum was 3.64% in the year 2012. The low margin is affected by increasing in deposits. However, researcher has also seen decreased spread on Loan rates over the last five years.

ICICI BANK**Table No. 08- NIM: ICICI BANK**

Year	Interest Income	Interest Expenses	Net Interest Income	Total Assets	NIM %	ROA
2017	54,156.28	32,418.96	21,737.32	768,749.32	2.83	1.1
2016	52,739.43	31,515.39	21,224.04	717,877.63	2.96	1.49
2015	49,091.14	30,051.53	19,039.61	646,129.29	2.95	1.86
2014	44,178.15	27,702.59	16,475.56	594,641.60	2.77	1.78
2013	40,075.60	26,209.18	13,866.42	536,794.69	2.58	1.7
2012	33,542.65	22,808.50	10,734.15	473,647.09	2.27	1.5
2011	25,974.05	16,957.15	9,016.90	406,233.67	2.22	1.35
2010	25,706.93	17,592.57	8,114.36	363,399.71	2.23	--
2009	31,092.55	22,725.93	8,366.62	379,300.96	2.21	--
2008	30,788.34	23,484.24	7,304.10	399,795.07	1.83	--
Mean					2.48	

Graph No. 08- NIM: ICICI BANK

Interpretation:

From the table No. 08 it has been seen that, the average Net Interest Margin of ICICI Bank was 2.48%. Higher was 2.96% in the year 2016 and lower was 1.83% in 2008. It has been seen that, the increasing trend of NIM of ICICI bank till 2016, in 2017 it's declined by 2.83% due to increased in NPA. The NPA of the Bank was 2.67% in the year 2016 but, it increased in 2017 by 4.89%. It's also resulted in ROA of the bank. The ROA in the year 2016 was 1.49% and in 2017 it became 1.10%.

FINDINGS

PUBLIC SECTOR BANKS

- The NPA of the State Bank of India has been decreasing since 2013 and it's affected on NIM for same period. Deposits are rapidly increasing as compare to borrowings.
- Borrowings of Bank of Maharashtra are 178 times lower than deposits; hence it resulted into Lower NIM i.e. 2.01%. The NPA of the Bank in the year 2017 was 11.76%. This means that about 11.76% of loans are never paid back, resulting in substantial loss of money to the banks.
- The Net Interest Income of the Bank of India has increased in the year 2017 i.e. 2.97%. Because in this year NPA has decreased from 7.79% to 6.90% and borrowing are increased up to 5.13%.
- Bank of Baroda has increasing trend of the NIM since 2014. And the NPA of the Bank is decreasing since 2013. It means the performance of Bank of Baroda is being very well.

PRIVATE SECTOR BANKS

- The NIM of Axis bank has increased till 2016 but, in 2017 it's declined by 3.01%, It has been observed that, the NPA of Axis Bank has increased in 2017 (0.70 to 2.11) and resulted on ROA too. The ROA of the Axis Bank was 1.72% in the year 2016 and in 2017 it became 0.65%.
- It has been seen that the Net Interest Margin of Kotak Mahindra bank is fluctuating throughout the years. NIM has increased in 2017 due to increased in Interest Income by 7.71%.
- The low margin of HDFC Bank is affected by increasing in deposits. However, researcher has also seen decreased spread on Loan rates over the last five years.
- It has been seen that, the increasing trend of NIM of ICICI bank till 2016, in 2017 it's declined by 2.83% due to increased in NPA. The ROA in the year 2016 was 1.49% and in 2017 it became 1.10% due to increased in NPA.

CONCLUSION

The study observed that variables such as size, NPA, cost (in) efficiency, deposit concentration and economic growth are important in determining the banks' behavior regarding their interest margin. In this research, researcher has attempted to measure NIM to find out profitability performance of 4 Indian public Banks i.e. State Bank of India, Bank of Maharashtra, Bank of India and Bank of Baroda. At the end, it is concluded the NIM made by calculating Interest

Income and Interest Expenses for 8 Indian Public & Private sector Banks and result portrays that Private sector Banks (ICICI and Axis Bank) having better NIM rather than Bank of Maharashtra and State Bank of India.

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