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Measuring the Performance Efficiency of State Bank of India and HDFC Bank using Balanced Score Card

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Abstract

The research article presents performance analysis of the State Bank of India Ltd and the HDFC Bank Ltd using Balanced Score Card (BSC) developed by Robert Kaplan and David Norton. It attempts an analysis to develop a deep understanding of the concept of BSC as a tool for strategy mapping and measurement of performance of a public sector bank and a private sector bank as mentioned elsewhere. BSC is a performance evaluation system not only based upon financial parameters, but also on non-financial aspects like customer indicators, internal business processes and employee learning and growth. Actual performance data from years 2009 to 2019 and business indicators of the year 2020 of the Banks are used for this purpose. The BSC model was developed to address the problems and limitations of relying only on financial measures for strategy formulation and measuring organizational performance. The study revealed that Gross NPA of SBI has increased while that of HDFC Bank has reduced during the period of study. Obviously the ROA is also better for HDFC Bank compared to that of SBI. It is inferred that HDFC Bank has garnered more net profit than SBI during the period of study. HDFC Bank has shown better performance compared to SBI according to the current study. The implication of the study is that both the banks have to visit all the areas of their business to ensure growth in financial performance, better customer service, efficient internal processes and higher learning and growth in the future years. This could ensure better profit management and risk management.

Keywords: Balanced Score Card, Financial Perspective, Internal Business Perspective, Organizational Growth Process

1. Introduction

Since 1991, banks in India face tough competition. In India's banking and financial sector is expanding rapidly by incorporating the advanced technology in the industry like internet and mobile devices to carry out the transactions and to communicate with masses and continuously improving customer experiences. Banking industry is challenged by competitive pressure from national and global banks, changes in customer preferences and loyalty, introduction of new infrastructural and technological advancement, meeting stakeholder's expectations, complying with stringent regulatory environment. In the competitive business era the only thing that really matters is Bank's performance. All the above factors pressurise the banks to pay attention in evaluating their performance by introducing new performance evaluation models and scientific techniques to streamline operations and improve processes and performance. The traditional financial measurement like return on investment, profitability and earnings per share can give misleading

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signals for continuous improvement and innovation in competitive world. Also financial performance measurement indicators are criticised in respect of being short term oriented, considering past performance, being non consistent with current business's environment, lack of predictive power and being irrelevant for all levels in the organizations. Therefore, it is imperative to develop a performance measurement system in an organisation, if an organization aims at the long-term survival, growth and development. A performance measurement system of a bank must be able to balance between the financial and non-financial measures, leading and lagging indicators, short term as well as long term objectives and supports management in predicting future fiscal performances in addition to highlight possible changes in operations to maintain congruence with the intended strategy. Balanced Score Card is such a strategic performance measurement and management system that has gained a much focus over the last decades to improve the planning, control and performance measurement functions of management accounting. Balanced Score Card is not only an appraisal method, but also a strategic tool. The use of the Balanced Score Card is abolishing the traditional single-use financial indicators methods to measure the organisational performance. The vital idea of behind the adopting balance score card is to set organisational strategy through finance, customer, internal processes and learning and development indicators. It would show a relationship between the organization's strategic approach and its performance.

To achieve a competitive edge and to retain customers, organizations should be innovative to fulfil the ever changing needs of their customers. The performance efficiency is an important factor while considering the overall development of the organization. The problem of the study is to measure the performance efficiency of a public sector bank State Bank of India (SBI) and a private sector bank HDFC Bank using Balanced Score Card. Thus the objectives of this study are:

- To measure the performance efficiency of State Bank of India and HDFC Bank using Balanced Score Card and compare the performance of both the banks.
- To analyze the financial indicators of the banks.
- To examine the customer orientation strategy of the banks.
- To assess the internal business process strategy of the banks.
- To analyze the learning and growth indicators of the banks.

2. Scope of the Study

In this study only one private sector bank and one public sector bank have been taken into consideration for evaluation and identification of factors responsible for difference in financial performance. This can be extended to remaining public sector banks, private sector banks, foreign banks as well as urban and rural cooperative banks.

3. Company Profile

3.1 State Bank of India

The State Bank of India (SBI) is an Indian multinational, public sector banking and financial services statutory body. It is a government corporation statutory body headquartered in Mumbai, Maharashtra. SBI is ranked as 236th in the Fortune Global 500 list of the world's biggest corporations of 2019. It is the largest bank in India with a 23% market share in assets, besides a share of one-fourth of the total loan and deposits market.

The bank descends from the Bank of Calcutta, founded in 1806, via the Imperial Bank of India, making it the oldest commercial bank in the Indian subcontinent. The Bank of Madras merged into the other two "presidency banks" in British India, the Bank of Calcutta and the Bank of Bombay, to form the Imperial Bank of India, which in turn became the State Bank of India in 1955. The Government of India took control of the Imperial Bank of India in 1955, with Reserve Bank of India (India's central bank) taking a 60% stake, renaming it the State Bank of India.

3.2 HDFC Bank Limited

The HDFC Bank was incorporated in August 1994. As of September 30, 2019, the Bank had a nationwide distribution network 5,314 branches and 13,514 ATM's in 2,768 cities/towns. The Housing Development Finance Corporation Limited (HDFC) was amongst the first to receive an 'in principle' approval from the Reserve Bank of India (RBI) to set up a bank in the private sector, as part of RBI's liberalisation of the Indian Banking Industry in 1994. The bank was incorporated in August 1994 in the name of 'HDFC Bank Limited', with its registered office in Mumbai, India. HDFC Bank commenced operations as a Scheduled Commercial Bank in January 1995**.**

4. Literature Review

The literature reviewed is summarized below, which indicates the practical applicability of BSC model.

Tapanya (2004) examined the factors which affect the performance management systems in a highly uncertain and rapidly changing environment through the application of the BSC approach. Through several consecutive qualitative and quantitative studies in the Thai banking industry in the post 1997 financial crisis, the author concludes that the institutional forces play a decisive role in the selection of the performance measurement system regardless of the strategic orientation and/or the firm's ownership.

Pandey (2005) reported the results of a simulated exercise where a group of senior managers (attending an educational program) of a large bank developed a BSC made for their bank. Guided by the author, this experiment demonstrated that the achievement of strategic objectives is highly driven by the internal process improvement and that the non-financial variables surpassed the financial variables.

Harold (2006) applied the BSC to develop a comprehensive performance measurement and a management tool for the IT in the banking sector in India. The author clarified how a cascade of balanced scoreboards can be useful in the technology effectiveness of commercial banks in India to guarantee better performance management.

Zhang and Li (2009) in their study examined commercial banks in China and they proposed the BSC as a tool to improve the performance of commercial banks in China. They suggested a method and a strategy for application along with restrictions of the BSC.

Ahmad et al. (2010) conducted a study in which they surveyed a sample of 27 banks in Pakistan to identify the measures that are used by the sample banks to evaluate their performance according to the four perspectives of the BSC. The authors reported that all the banks surveyed used measures that correspond to the BSC approach to evaluate their performance, however, the significance of the measures varied among the sample studied.

Al Sawalqa et al. (2011) analyzed the implementation state of the Balanced Score Card among industrial companies in Jordan. The authors surveyed 168 companies to obtain an insight on the level of BSC implementation. The study showed that 35.1% of the surveyed companies applied BSC, while 30% were considering or implementing the BSC approach.

Singh (2018) used BSC to measure the performance efficiency of HDFC Bank. Based on the concept of strategic map, the author's intention was to determine the characteristic of bank's administrative activities so as to develop a cause-effect relationship to relate the bank's objectives to its strategic goals in an attempt to choose the measures relating to each one of the four BSC perspectives. The followings measures were selected for every perspective, they are: 1. Financial perspective: Cash deposit ratio, Credit deposit ratio, Interest income to total assets ratio, NPA to net advances, Net Interest income to total assets, Investment-Deposit ratio, Return on assets, Return on equity, Capital adequacy ratio. 2. Customer Perspective: Priority sector advances to total advances ratio, Ratio of deposits to total liabilities, Ratio of term loans to total advances, Ratio of secured advances to total advances. 3. Internal Business Processes Perspective: Business per employee (in Rupees million), Profit per employee (in Rupees

Million), Wage bills to total expenses ratio, Wage bills to total income ratio, Wage bills to intermediation cost ratio. 4. Learning and Growth: Number of offices, Number of employees (in thousands), Number of Debit Cards (in lacs) and Number of Credit Cards (in lacs). With the help of the data available about the HDFC performance from 2009-2013, the author could identify the BSC's objectives, measures and targets for the four perspectives. A performance scale was identified for each measure and 50 score points were divided on the elements of each scale. The total scores in the BSC developed are therefore 1100 (22 measures X 50 points).

5. Research Methodology

The present study is a descriptive search study based on analytical research design. It uses the Balanced Score Card as a measurement tool of performance of the Banks.

The concept of Balanced Score Card was introduced by Kaplan and Norton in a Harvard Business Review Article on "The Balanced Score Card-Measures that Drive Performance" in 1992. According to them, "Balanced Score Card is a business management concept that transforms both financial and non-financial data into a detailed roadmap that helps the organization measure its performance and meet long and short term objectives".

The four perspectives of the BSC model are:

5.1 Financial

This indicator measures the profitability, risk, growth and liquidity position of organisation from the perspective of stakeholders. Kaplan and Norton had given importance to the requirement for traditional financial data for the measurement of Return on Investment, Return on Equity, Fund Flow, Cash Flow, Net Operating Income, Revenue Growth, Overall Risk and Return etc of the organisation.

5.2 Customer

This strategy helps to create value addition and differentiation of product from the view of Customer as an ultimate aim of any organisation is to satisfy and retain their customer. Under this perspective, customer satisfaction, resolving of customer complaints, providing value addition to customer, number of customers lost/won, sales from new product, etc are evaluated.

5.3 Internal Business Process

This strategy deals with producing goods and services is most efficient and effective way so that products can be produced in less cost without impairing the quality. Most commonly used measures under this prospective are cost of products, quality of products, time saving of services and process innovation.

5.4 Learning and Growth

This is the strategy for creating congenial climate which could support organisational change, innovation and growth and improve work relationship. The most common measures used under this indicator are employee's

Figure 1. Balanced Score Card.

Source: Adopted from Kaplan and David (1996) empowerment, employee's motivation, employee's development and information system capabilities.

The relationship between the four perspectives is represented in the following diagram.

It translates mission and vision statements into a comprehensive set of objectives and performance measures that can be quantified and appraised. It is a method of identifying strategic objectives based on mission and vision of an organization and developing the key performance indicators based on financial, customer, internal processes and learning and growth perspective to transform a bank's strategy into action and then evaluating the performance of an organization based on these indicators.

6. Rationale Behind Selection of Banks under Study

State Bank of India is the biggest public sector bank in India in total business and branch network. On the other hand, HDFC Bank is the biggest private sector bank in India in total business as well as profitability. So it would be interesting to study their performance and make a comparative analysis.

6.1 Data Collection Method

To accomplish the objectives secondary data is used. These are collected from banks' annual reports, published financial reports, journals, magazines and websites. The study is chronological and covers a period from 2009-2019. The study was conducted to analyze the performance of the banks using Balanced Scorecard. The various measures for BSC are adopted from the study by Harpreet Singh (2018). Thus, ratio analysis has been used for analysing the trends in the financial performance. Findings have been presented in the form of Balanced Score Card.

6.2 Tools used for Measurement of BSC Perspectives

Based on the concept of strategic mapping, the characteristics of bank's administrative activities were determined so as to develop a cause-effect relationship to relate the banks' objectives to their strategic goals in an attempt to choose the measures relating to each one of the four BSC perspectives. Followings measures were selected for every perspective, they are:

- **Financial Perspective:** Cash Deposit Ratio, Credit Deposit Ratio, Interest Income to Total Assets Ratio, NPA to Net Advances, Net Interest Income to Total Assets, Investment-Deposit Ratio, Return on Assets, Return on Equity, Capital Adequacy Ratio. If all these ratios except NPA to Net Advances increase over the years, it is interpreted that the Bank's financial performance is improving. NPA to Net Advances, on the other hand should come down steadily to indicate higher efficiency.
- **Internal Business Processes Perspective:** Business per Employee (in Rupees million), Profit per Employee (in Rupees Million), Wage bills to Total Expenses Ratio, Wage bills to Total Income Ratio, Wage bills to Intermediation Cost Ratio. Increase in Business per Employee, Profit per Employee increase, we can conclude that the Internal Business Processes of the Bank are strong. On the other hand, if the Wage bills to Total Expenses Ratio, Wage bills to Total Income Ratio and Wage Bills to Intermediation Cost Ratio increases, it is shows a weakness in the Internal Business Processes. Since Wage Bill is a non-controllable expense, we may not be able to expect these ratios to decrease, but at least, they should not grow largely over the years.
- **Customer Perspective**: Priority Sector Advances to Total Advances Ratio, Ratio of Deposits to Total Liabilities, Ratio of Term Loans to Total Advances, Ratio of Secured Advances to Total Advances. If these ratios grow over the years, it could be interpreted that the Bank is meeting the expectations of the customers and it is good sign from customer perspective.
- **Learning and Growth:** Number of offices, Number of employees (in thousands), Number of Employees using IT and Number of Employee Development Programmes. Growth in all these parameters could be interpreted as the higher efficiency of the Bank from Learning and Growth perspective of BSC Model.

With the help of the data on the performance of SBI and HDFC Bank from 2009-2019, measures for the four perspectives were arrived at by calculating the relevant ratios.

A performance scale was identified for each measure and 50 score points were divided on the elements of each scale.

The total scores in the BSC developed are therefore 1100 (22 measures x 50 points) as given in the (Table 1). However, in the present study data regarding number of employees IT and number of employee development programmes were not available. Hence these parameters are avoided and hence the total score would be computed on 1000 (20 measures x 50 points).

7. Analysis and Interpretation

In order to develop the Balanced Score Card (BSC) for analysing the performance of State Bank of India and HDFC Bank mainly the four perspectives of BSC have been evaluated. All the perspectives measure the overall performance of the banks. The four perspectives used are as follows:

Table 1. Scoring pattern of different perspectives in Balanced Score Card

	Measures			**Scores**		
		10	20	30	40	50
				Scale		
Financial Perspective	Cash Deposit Ratio	0-2.5	2.51-5	5.01-7.5	7.51-10	10.1-12.5
	Credit-deposit ratio	0-16	17-32	33-48	49-64	65-80
	Interest income to total assets	0 - 2	3-4	5-6	7-8	9-10
	NPA to net advances	0-0.12	0.13-0.25	0.26-.038	0.39-0.50	0.51-0.63
	Net interest income to total assets	0-.86	0.87-1.7	1.8-2.6	2.7-3.4	3.5-4.3
	Investment-Deposit Ratio	0-9	10-18	19-27	28-36	37-45
	ROA	0-.40	0.41-0.80	.81-1.2	1.21-1.60	1.61-2
	ROE	0-4	5-8	9-12	13-16	17-20
	Capital Adequacy Ratio	0-3.5	7	7.1-10.5	10.51-14	14.1-17.5
	Perspective Subtotal/year					
Internal Business Processes Perspective	Business per employee (in Rs Crore)	0-15	15.1-30	30.1-45	45.1-60	60.1-75
	Profit per employee (in Rs Crore)	0-1.5	1.5-3	3.1-4.5	4.51-6	6.1-7.5
	Wage bills to total expenses ratio	0-3.5	3.51-7	7.1-10.5	10.51-14	14.1-17.5
	Wage bills to total income ratio	0-2.5	2.51-5	5.1-7.5	7.51-10	10.1-12.5
	Wage bills to					
	intermediation cost ratio	0-0.5	0.6-1	1.1-1.5	1.6-2	2.1-2.5
	Perspective Subtotal/year					
Customer Perspective	Priority sector advances to total advances ratio	0-10	11-20	21-30	31-40	41-50
	Ratio of deposits to total liabilities	0-20	21-40	41-60	61-80	81-100
	Ratio of term loans to total advances	0-16	17-32	33-48	49-64	65-80
	Ratio of secured advances to total advances	0-20	21-40	41-60	61-80	81-100
	Perspective Subtotal/year					
Learning and Growth Perspective	No of offices	0-600	601-1200	1201-1800	1801-2400	2401-3000
	No of employees (in 000'S)	0-14	14.1-28	28.1-42	42.1-56	56.1-70
	Employee development programs	0 to 5	6 to 10	11 to 15	16 to 20	21 to 25
	Employees using IT	0-10000	10001-20000	20001-30000	30001-40000	40001-50000
	Perspective Subtotal/year					

(Source: www.ijetsr.com)

7.1 Financial Perspective

The financial perspective of the bank is analyzed using Cash Deposit Ratio, Credit Deposit Ratio, interest income to total asset, NPA to net advances, Net interest income to Total Assets, Investment-Deposit Ratio, Return on Asset (ROA), Return on Equity (ROE) and Capital Adequacy Ratio.

From the Table 2 and Table 3, it could be noted that the Cash Deposit Ratio shows an irregular pattern of growth for both the banks. From 2009 to 2019, it shows a declining trend indicating a liquidity risk. The Credit-Deposit Ratio has grown in the case of HDFC Bank, while the ratio had shown a dip in the case of SBI over the period of study. Obviously, it shows the higher profitability of HDFC Bank compared to SBI. Total interest income to total assets ratio has declined during the period of study for both the banks. This trend shows that they could not recognize interest income due to higher NPAs and also due to decline in interest rates for advances during this period. Furthermore, the gross NPA of SBI has increased while that of HDFC Bank has reduced during the period of study. The Net Interest Income Ratio to Total Assets Ratio is almost steady during the period of study for both the banks considering the interest income from advances as well as investments. The Investment–Deposit Ratio is almost stable for SBI and shows a declining trend in the case of HDFC Bank. It could be inferred that SBI follows a consistent investment policy while HDFC Bank follows a policy of channelizing the deposit funds to advances. It is also evident from the Credit-Deposit Ratios of HDFC Bank during the period of study. It is also observed that the ROA of SBI has reduced during the period of study while that of HDFC Bank has shown an increasing trend. It may be inferred that HDFC Bank has garnered more net profit than SBI during the period of study. The ROE of SBI has declined while that of HDFC Bank has shown a consistency during the period of study. This shows that HDFC Bank is more efficient in generating net profit than SBI. It also shows its efficiency to create more wealth for its shareholders. The HDFC Bank keeps higher Capital Adequacy Ratio than SBI. Both the banks are keeping CAR at a much higher level than what has been recommended under Basel II norms. So it could be inferred that both the banks are keeping strong capital base to meet the risks.

7.2 Customer Perspective

The second perspective in BSC approach to analyze the performance of the bank is Customer Perspective where the Priority sector advances to Total Advances Ratio, Ratio of Deposits to Total Liabilities, Ratio of Term Loans to Total Advances, and Ratio of Secured Advances to Total Advances.

Table 2. Financial Perspective of SBI

Year	Cash-Deposit Ratio	Credit-Deposit Ratio	Interest Income to Total Assets ratio	NPA to Net Advance Ratio	Net Interest Income to Total Assets Ratio	Invest-ment to Deposit Ratio	ROA	ROE	Capital Adequacy Ratio
2019	5.83	73.35	6.85	7.53	6.51	36.10	0.36	6.24	12.72
2018	5.86	73.79	7.22	10.91	6.59	38.45	0.02	4.39	12.60
2017	6.82	80.38	6.98	6.90	6.38	35.54	0.18	3.37	13.11
2016	7.42	83.56	7.44	6.50	6.48	31.97	0.38	6.69	13.12
2015	6.76	84.47	7.94	4.25	6.95	29.64	0.42	6.89	12.00
2014	5.81	86.84	8.12	4.95	7.44	28.87	0.63	10.20	12.96
2013	5.34	85.17	8.25	4.75	7.60	29.52	0.60	9.20	12.92
2012	7.51	82.14	8.32	4.90	7.63	30.73	0.90	14.26	13.86
2011	8.96	79.90	7.15	3.48	7.97	33.45	0.87	19.94	11.98
2010	7.56	75.96	8.52	3.28	6.65	36.33	0.60	11.34	13.39
2009	8.37	74.97	8.88	2.98	6.12	36.00	0.62	11.19	14.25

Table 3. Financial perspective of HDFC Bank

Year	Cash-Deposit Ratio	Credit-Deposit Ratio	Interest Income to Total Assets ratio	NPA to Net Advance Ratio	Net Interest Income to Total Assets Ratio	Invest-ment to Deposit Ratio	ROA	ROE	Capital Adequacy Ratio
2019	8.85	86.32	8.57	1.35	7.50	31.12	1.71	15.35	17.11
2018	9.95	84.68	8.32	1.28	7.95	31.88	1.69	14.01	14.82
2017	5.71	85.64	8.81	1.04	7.54	31.79	1.64	16.45	14.55
2016	5.77	83.24	9.27	0.92	8.02	33.13	1.68	16.26	15.53
2015	6.46	81.71	8.96	0.89	8.49	35.13	1.73	16.91	16.79
2014	6.02	81.79	9.22	0.91	8.20	35.05	1.73	16.47	16.07
2013	5.46	80.14	9.50	0.85	8.36	38.51	1.72	19.50	16.08
2012	8.81	78.06	8.87	0.95	8.75	36.99	1.68	18.57	16.52
2011	10.79	76.02	7.97	1.06	8.07	34.45	1.52	17.26	16.22
2010	9.35	72.44	9.84	1.44	7.18	37.35	1.41	15.47	17.44
2009	10.74	66.64	12.5	1.98	7.02	44.43	1.36	15.32	15.69

The results presented in Tables 4 and 5 denote that the Total Priority Sector Advances to Total Advances is almost steady in the case of SBI while that of HDFC Bank is declining over the years. This is not a good sign for HDFC Bank. Both the banks are keeping the ratio much below the targeted 40% prescribed by the Government of India. For both the banks the major share of the liabilities are deposits. The ratio of SBI is steadily increasing while that of HDFC Bank is almost stable during the period of the study. The ratio of term loan to total advances is steadily growing over the years for SBI that of HDFC Bank is almost stable. In both the banks, term loans are more compared to short term loans. It could be inferred that it will help to maintain long term solvency of the banks. Both the banks keep secured advances higher than the unsecured advance which is a good sign of solvency. For SBI it is showing a trend of decline while that of HDFC Bank is increasing.

7.3 Internal Process Perspective

In Internal Process Perspective the various parameters considered are Business per Employee, Profit per Employee, Wage Bill to Total Expenses Ratio, Wage Bill to Total Income Ratio and Wage Bill to Intermediation Cost Ratio.

From the Tables 6 and 7 it could be observed that in both the banks, business per employee is steadily increasing over the years indicating the rise in employee productivity. Performance of SBI in this regard is better than that of HDFC Bank, whereas, the profit per employee of SBI has gone down over the years. But for HDFC Bank, it has gone up very sharply during the period of study. We can infer that the efficiency of making use of employees to generate profit is much higher in the case of HDFC Bank compared to SBI. Furthermore, the wage bill to total expenses ratio has gone up in the case of SBI, while it has been declined in the case of HDFC Bank. It shows that HDFC Bank is efficient in controlling the total cost against wage bills which is a non-controllable cost. The wage bill to total income ratio has gone up for SBI while it has shown a reverse trend in the case of HDFC Bank. The total income is growing steadily in the case of HDFC Bank compared to SBI. The major component of intermediation cost (Operating cost) is for SBI while it is less than one third of intermediation cost of HDFC Bank. So it can be inferred that HDFC Bank is better in the control of intermediation cost than SBI.

7.4 Learning and Growth Perspective

The fourth approach of BSC is Learning and Growth perspective where the parameters considered are number of employees and number of offices.

The results presented in the Tables 8 and 9 indicate that the number of employees has grown for both the Banks.

Table 4. Customer perspective of SBI

Year	Priority Sector Advances to Total Advances Ratio	Ratio of Deposits to Total Liabilities	Ratio of Term Loans to Total Advances	Ratio of Secured Advances to Total Advances
2019	27.60	82.00	60.79	58.80
2018	26.30	79.00	57.90	59.30
2017	23.17	78.30	56.70	56.00
2016	21.72	75.50	56.10	58.00
2015	25.30	73.40	53.26	62.10
2014	25.00	76.90	51.60	63.30
2013	25.20	77.70	47.00	67.40
2012	27.00	76.70	47.90	66.70
2011	28.20	75.30	44.20	64.90
2010	28.90	75.60	43.70	61.80
2009	27.30	74.30	43.10	62.30

Table 5. Customer perspective of HDFC Bank

Year	Priority Sector Advances to Total Advances Ratio	Ratio of Deposits to Total Liabilities	Ratio of Term Loans to Total Advances	Ratio of Secured Advances to Total Advances
2019	25.40	74.90	71.40	64.90
2018	25.20	74.10	71.10	65.80
2017	28.10	74.10	70.70	61.80
2016	29.20	74.30	69.10	64.10
2015	30.00	74.50	69.40	65.50
2014	27.80	77.00	58.20	61.80
2013	28.40	76.30	56.20	61.60
2012	32.30	74.70	59.30	59.80
2011	34.40	74.00	63.00	57.80
2010	35.00	73.00	73.20	57.60
2009	30.10	72.90	75.80	56.20

Table 6. Internal process perspective of SBI

Year	Business per Employee (Rs.'lacs)	Profit per Employee (Rs.'lacs)	Wage Bill to Total Expenses Ratio	Wage Bill to Total Income Ratio	Wage Bill to Intermediation Cost Ratio
2019	18.77	3.30	18.31	14.68	58.91
2018	16.70	2.43	16.14	12.52	55.35
2017	16.24	5.11	16.54	12.56	57.00
2016	14.11	4.70	16.90	13.09	60.11
2015	12.34	6.02	17.40	13.45	61.90
2014	10.63	4.85	18.33	14.53	62.99
2013	9.48	6.45	17.57	13.55	62.77
2012	7.98	5.31	19.01	14.04	65.11
2011	7.04	3.85	21.16	15.65	66.09
2010	6.36	4.46	18.86	14.84	62.77
2009	5.56	4.74	16.64	12.75	62.29

Table 7. Internal process perspective of HDFC Bank

Year	Business per Employee (Rs.'lacs)	Profit per Employee (Rs.'lacs)	Wage Bill to Total Expenses Ratio	Wage Bill to Total Income Ratio	Wage Bill to Intermediation Cost Ratio
2019	18.77	3.30	18.31	14.68	58.91
2018	16.70	2.43	16.14	12.52	55.35
2017	16.24	5.11	16.54	12.56	57.00
2016	14.11	4.70	16.90	13.09	60.11
2015	12.34	6.02	17.40	13.45	61.90
2014	10.63	4.85	18.33	14.53	62.99
2013	9.48	6.45	17.57	13.55	62.77
2012	7.98	5.31	19.01	14.04	65.11
2011	7.04	3.85	21.16	15.65	66.09
2010	6.36	4.46	18.86	14.84	62.77
2009	5.56	4.74	16.64	12.75	62.29

Table 8. Learning and growth perspective of SBI

Year	Number of Employees	Number of offices
2019	257252	24000
2018	264041	23543
2017	209572	20145
2016	210985	19100
2015	213242	18400
2014	222033	18012
2013	228296	17650
2012	215481	17322
2011	222933	16840
2010	200299	16220
2009	205896	16084

Table 9. Learning and growth perspective of HDFC Bank

Year	Number of Employees	Number of offices
2019	98061	5314
2018	88253	5100
2017	84325	4682
2016	87555	4024
2015	76286	3956
2014	68165	3816
2013	69401	3210
2012	66076	2960
2011	55752	2815
2010	51888	2632
2009	52687	2321

Table 10. Balanced Score Card of State Bank of India

Perspectives	Measures	Score assignment (State Bank of India)										
		2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**
Financial	Cash-deposit ratio	30	30	30	40	30	30	30	40	40	40	40
	Credit-deposit ratio	50	50	50	50	50	50	50	50	50	50	40
	Interest income to total assets	30	30	40	40	40	40	50	30	40	30	30
	NPA to net advances	50	50	50	50	50	50	50	50	50	50	50
	Net interest income to total assets	50	30	40	50	50	50	30	30	50	30	30
	Investment - Deposit Ratio	40	50	40	40	40	40	40	40	40	50	50
	Return on assets	10	10	10	10	20	20	20	30	30	20	20
	Return on equity	20	10	10	20	20	30	30	40	50	30	30
	Capital adequacy Ratio	40	40	40	40	40	40	40	40	40	40	50
	Total	320	300	310	340	340	350	340	350	390	340	340
Customer	Priority sector advances to total advances ratio	30	30	30	30	30	30	30	30	30	30	30
	Ratio of deposits to total liabilities	50	40	40	40	40	40	40	40	40	40	40
	Ratio of term loans to total advances	40	40	40	40	40	40	30	30	30	30	30
	Ratio of secured advances to total Advances	30	30	30	30	40	40	40	40	40	40	40
	Total	150	140	140	140	150	150	140	140	140	140	140
Internal Business Process	Business per employee	20	20	20	10	10	10	10	10	10	10	10
	Profit per employee	30	20	40	40	50	40	50	40	30	40	40
	Wage bills to total expenses	40	40	40	40	40	40	40	40	40	40	40
	Wage bills to total income	50	50	50	50	50	50	50	50	50	50	50
	Wage bills to intermediation cost	50	50	50	50	50	50	50	50	50	50	50
	Total	190	180	200	190	200	190	200	190	180	190	190
Learning and Growth	No. of branches	50	50	50	50	50	50	50	50	50	50	50
	No. of employees	50	50	50	50	50	50	50	50	50	50	50
	Total	100	100	100	100	100	100	100	100	100	100	100
	Total score of four Perspectives	760	720	750	770	790	790	780	780	810	770	770
	Total achieved out of total	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	% of score	76	72	75	77	79	79	78	78	81	77	77

Source: Calculated from Secondary Data

Table 11. Balanced Score Card of HDFC Bank Ltd

Perspectives	Measures	Score assignment (HDFC Bank)										
		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Financial	Cash-deposit ratio	40	40	30	30	30	30	30	40	50	40	50
	Credit-deposit ratio	50	50	50	50	50	50	50	50	50	40	40
	Interest income to total assets	40	40	40	50	40	50	50	40	40	50	40
	NPA to net advances	50	50	50	40	40	40	40	40	40	50	40
	Net interest income to total assets	50	40	40	50	40	50	40	30	30	30	30
	Investment - Deposit Ratio	40	40	40	40	40	40	40	50	40	50	50
	Return on assets	50	50	50	50	50	50	40	40	40	40	40
	Return on equity	40	40	40	40	40	40	50	50	50	40	40
	Capital adequacy Ratio	50	50	50	50	50	50	50	50	50	50	50
	Total	410	400	390	380	380	400	390	380	390	390	380
Customer	Priority sector advances to total advances ratio	30	30	30	30	30	30	30	40	40	40	30
	Ratio of deposits to total liabilities	40	40	40	40	40	40	40	40	40	40	40
	Ratio of term loans to total advances	50	50	50	50	50	40	40	40	40	50	50
	Ratio of secured advances to total Advances	40	40	40	40	40	40	40	40	40	40	40
	Total	160	160	160	160	160	150	150	160	160	170	160
Internal Business Process	Business per employee	20	20	10	10	10	10	10	10	10	10	10
	Profit per employee	50	50	50	50	50	50	50	40	40	40	40
	Wage bills to total expenses	30	30	40	40	40	40	40	50	50	50	50
	Wage bills to total income	30	30	40	40	40	40	40	40	50	40	50
	Wage bills to intermediation cost	50	50	50	50	50	50	50	50	50	50	50
	Total	180	180	190	190	190	190	190	190	200	190	200
Learning and Growth	No. of branches	50	50	50	50	50	50	50	50	40	40	40
	No. of employees	50	50	50	50	50	50	50	50	40	40	40
	Total	100	100	100	100	100	100	100	100	80	80	80
	Total score of four Perspectives	850	840	840	830	830	840	830	830	830	830	820
	Total achieved out of total	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	% of score	85	84	84	83	83	84	83	83	83	83	82

Source: Calculated from Secondary Data

Table 12. Financial perspective of the Banks

YEAR	SBI	HDFC Bank
2019	320	410
2018	300	400
2017	310	390
2016	340	380
2015	340	380
2014	350	400
2013	340	390
2012	350	380
2011	390	390
2010	340	390
2009	340	380

However, the number has slightly reduced in the case of SBI due to retirements. Growth in human capital is viewed positively from the growth perspective. The number of offices has gone up in the case of SBI during the period of study because of merger of five Associate Banks with them. HDFC Bank has shown a steady growth in the number of offices during this period.

7.5 Balanced Score Card Perspective Graphs of State Bank of India and HDFC Bank

The Tables 10 and 11 show the Balanced Score Card of State Bank of India and HDFC Bank Ltd respectively from the year 2009 to 2019. They cover the respective scores for the four perspectives of performance. Now the scores with regard to the different perspectives are discussed below.

7.5.1 Financial Perspective

The Table 12 and Figure 2 show a growth year on year basis in the financial performance of HDFC bank during the period of study. SBI shows a downward growth during these years. The score was highest in the year 2019 (410) for HDFC bank whereas for State Bank of India it was in the year 2011 (390). It could be inferred that HDFC Bank is better efficient compared to SBI as far as financial performance is concerned.

7.5.2 Customer Perspective

Referring to the Table 13 and Figure 3, it could be observed that the customer perspective ratio of both SBI and HDFC bank shows only a slight difference throughout the years. While comparing with HDFC bank the customer perspective scores are lower for SBI.

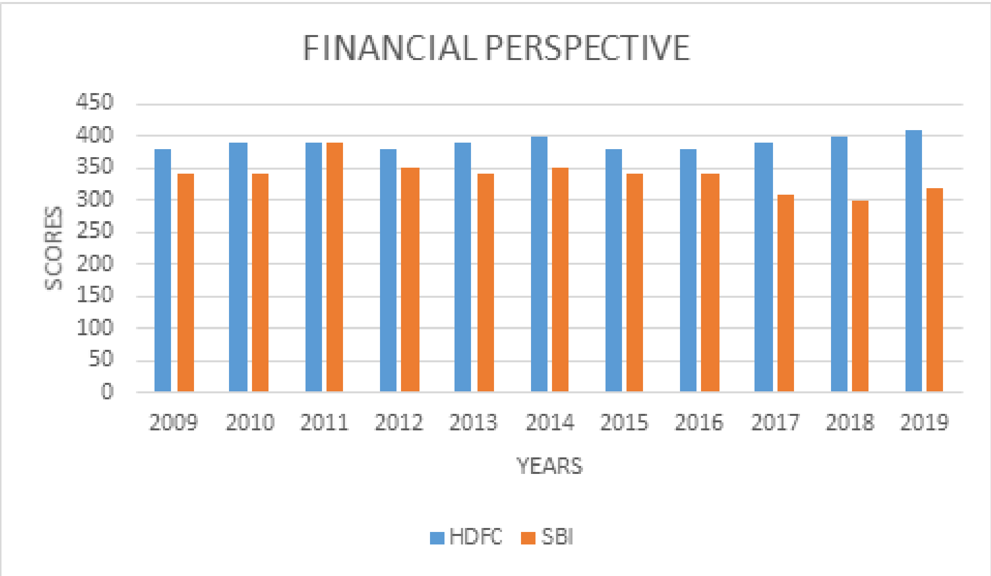

Figure 2. Financial perspective.

Table 13. Customer perspective

YEAR	SBI	HDFC Bank
2019	150	160
2018	140	160
2017	140	160
2016	140	160
2015	150	160
2014	150	150
2013	140	150
2012	140	160
2011	140	160
2010	140	170
2009	140	160

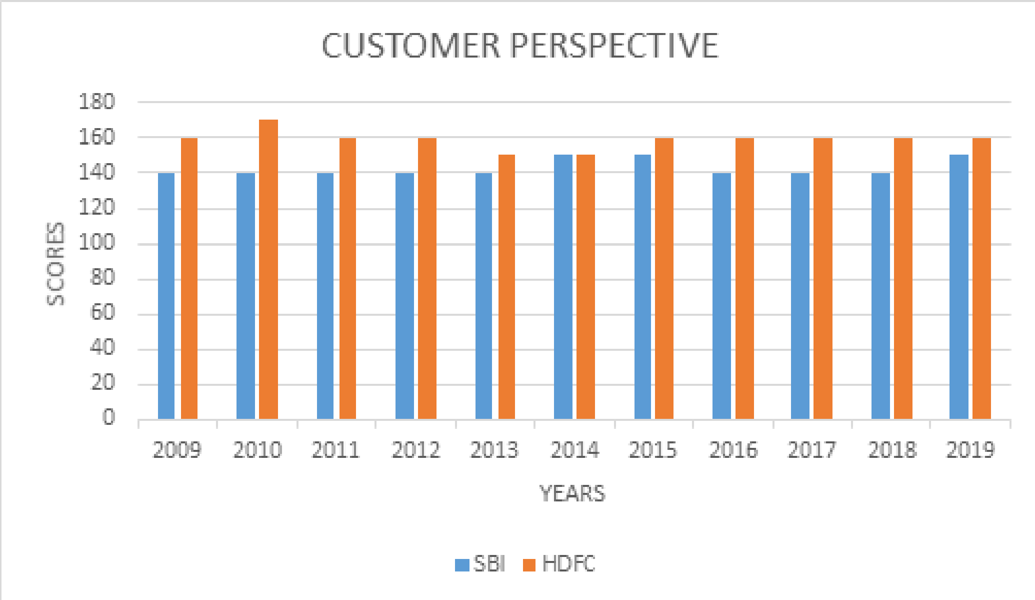

Figure 3. Customer perspective.

Table 14. Internal business process perspective

YEAR	SBI	HDFC Bank
2019	190	180
2018	180	180
2017	200	190
2016	190	190
2015	200	190
2014	190	190
2013	200	190
2012	190	190
2011	180	200
2010	190	190
2009	190	200

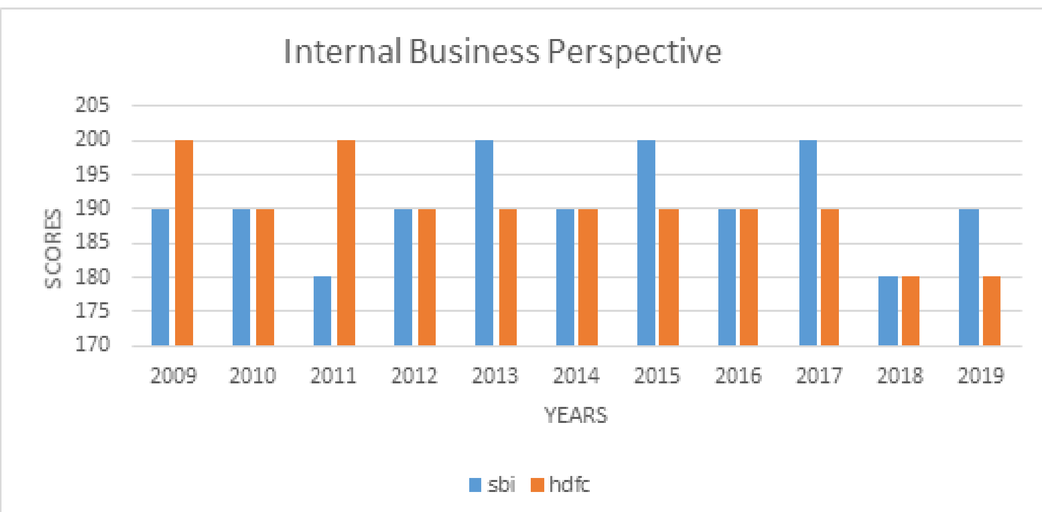

Figure 4. Internal business process perspective.

7.5.3 Internal Business Process Perspective

As shown in the Table 14 and Figure 4, the internal process perspective does not reveal significant difference. HDFC bank shows a decline the internal business perspective these years. HDFC bank had a stable position in 2012 to 2017 later it declines. However, the scores of SBI bank are slightly better than HDFC bank. The score was highest in the year 2013, 2015, 2017 (200) for State Bank of India whereas for HDFC bank the highest score was in the year 2009 and 2011 later it declines.

7.5.4 Learning and Growth Perspective

It is denoted from the Table 15 and Figure 5 that both the banks are almost equal in the Learning and Growth perspective. SBI is stable in this perspective throughout the period of study while HDFC Bank has shown improvement from the year 2011 to 2019.

While summarising the perspective scores, as shown in the Table 16 and Figure 6, it is observed that HDFC Bank has fairly better performance than State Bank of India.

8. Findings and Discussions

The various parameters under the four perspectives are summarized and discussed below.

8.1 Financial Perspective

From 2009 to 2019, Cash Deposit Ratio shows a declining trend indicating a liquidity risk in the case of both the banks. The Credit Deposit Ratio has grown for HDFC Bank over the period of study indicating that it is properly using the working fund (deposit) for credit creation. However, SBI has a declining trend of credit Deposit Ratio. Obviously, it has led to the higher profitability of HDFC Bank compared to SBI. The declining trend of total interest income to total assets ratio during the period of study for both the banks is not viewed favourable. This trend shows that they could not recognize interest income due to higher NPAs and also due to decline in interest rates for advances during this period. Gross NPA of SBI has increased while that of HDFC Bank has reduced during the period of study. It indicates the efficiency of HDFC Bank' recovery machinery compared to that of SBI. It is interesting to observe that the Net Interest Income Ratio to Total Assets Ratio is almost steady during the period of study for both the banks taking into account the interest income from advances as well as investments. Because SBI follows a consistent investment policy while HDFC Bank follows a policy of channelizing the deposit funds to advances, the Investment–Deposit Ratio is almost stable for SBI and shows a declining trend in the case of HDFC Bank. It may be another reason that the Credit-Deposit Ratio of HDFC Bank during the period of study is increasing. Another contrasting observation is that ROA of SBI has reduced during the period of study while that of HDFC Bank has shown an increasing trend. It may be due to the fact that HDFC Bank has garnered more net profit than SBI during the period of study. ROE of SBI has declined while that of HDFC Bank has shown a consistency during the period of study. This shows that HDFC Bank is more efficient in generating net profit than SBI from the assets as well as equity capital. It also shows its efficiency to create more wealth for its shareholders. HDFC Bank keeps higher Capital Adequacy Ratio than SBI. Both the banks are keeping Capital Adequacy Ratio at a much higher level than what has been recommended under Basel II norms. So both the banks are keeping strong capital base to meet the risks. Considering the various parameters of finance perspective, it could be observed that HDFC Bank is fairly efficient than SBI.

8.2 Customer Perspective

The Total Priority Sector Advances to Total Advances is almost steady in the case of SBI while that of HDFC Bank is declining over the years. This is not a good sign for HDFC Bank. Both the banks are keeping the ratio much below the targeted 40% prescribed by the Government of India. The ratio of term loan to total advances is steadily growing over the years for SBI while that of HDFC Bank is almost stable. In both the banks, term loans are more compared to short term loans. In long run, this will help to maintain long term solvency of the banks. Both the banks keep secured advances higher than the unsecured advances which

Table 15. Learning and Growth Perspective

YEAR	SBI	HDFC
2019	100	100
2018	100	100
2017	100	100
2016	100	100
2015	100	100
2014	100	100
2013	100	100
2012	100	100
2011	100	80
2010	100	80
2009	100	80

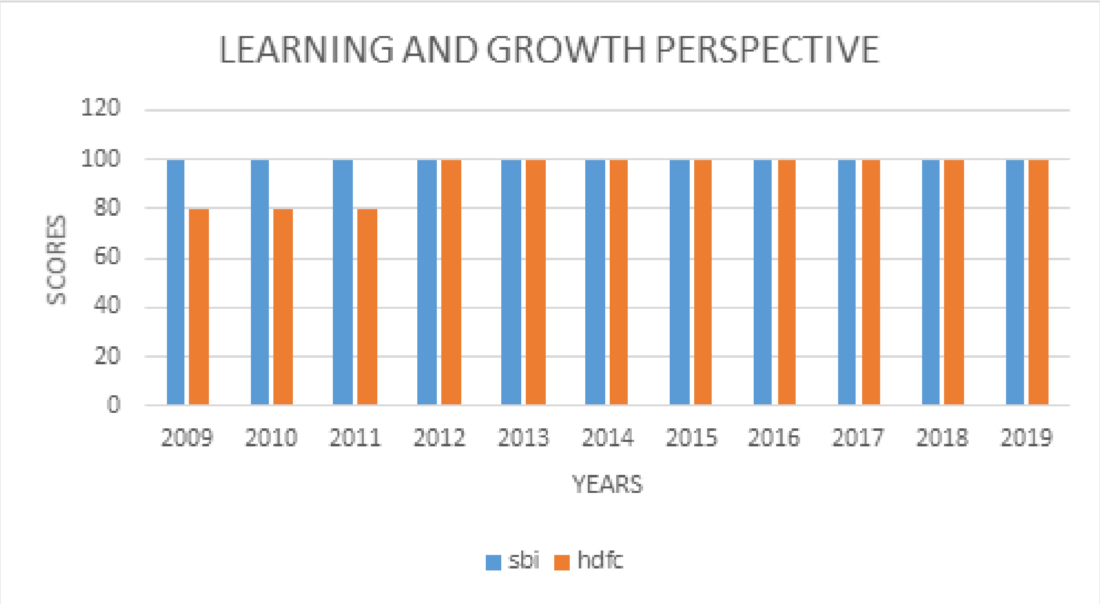

Figure 5. Learning and Growth Perspective.

Table 16. Summary of perspective scores of State Bank of India and HDFC Bank

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
State Bank of India	760	720	750	770	790	790	780	780	810	770	770
HDFC Bank	850	840	830	850	840	830	850	840	830	850	820
Total score achieved out of total	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
% of score SBI	76	72	75	77	79	79	78	78	81	77	77
% of score HDFC	85	84	83	85	84	83	85	84	83	85	82

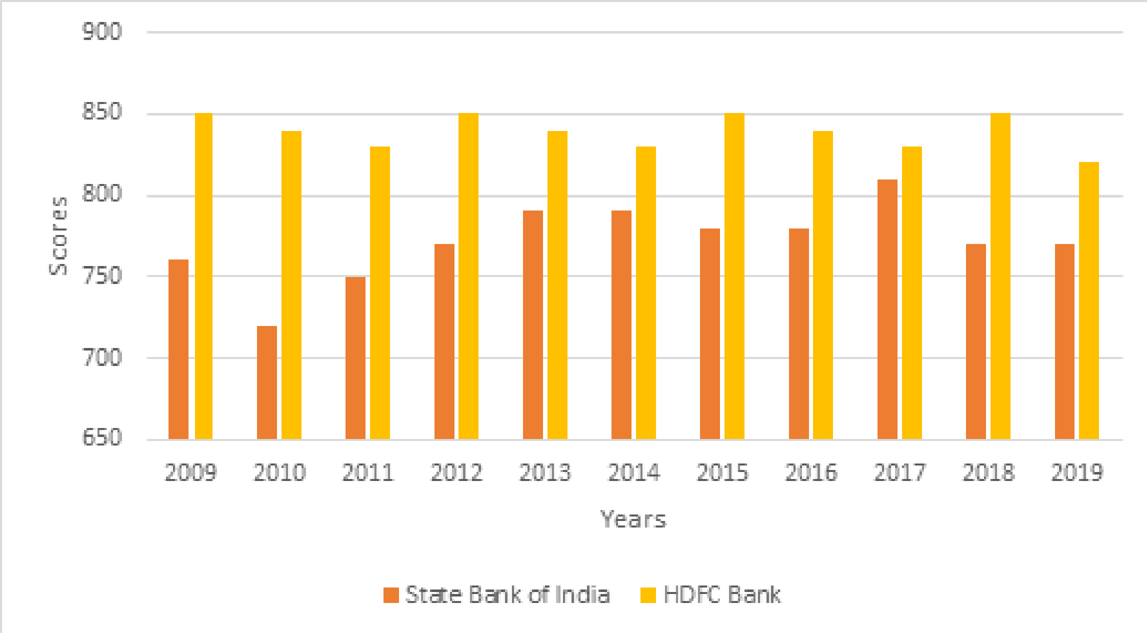

Figure 6. Summary of balance score card graph of State Bank of India and HDFC Bank.

are a good sign of safety and security of the assets. Under this perspective the performance of both the banks are comparable.

8.3 Internal Process Perspective

In both the banks, Business per Employee is steadily increasing over the years showing a good growth in the employee productivity. Performance of SBI in this regard is better than that of HDFC Bank. Profit per employee of SBI has gone down over the years. But for HDFC Bank, it has gone up very sharply during the period of study. We can observe that the efficiency of making use of employees to generate profit is much higher in the case of HDFC Bank compared to SBI. Wage bill to total expenses ratio has gone up in the case of SBI, while it has been declined in the case of HDFC Bank. It shows that HDFC Bank is efficient in controlling the total cost against wage bills which is a non-controllable cost. Wage bill to total income ratio has gone up for SBI while it has shown a reverse trend in the case of HDFC Bank. The total income is growing steadily in the case of HDFC Bank compared to SBI. The major component of intermediation cost (Operating cost) is wage bill for SBI while it is less than one third of intermediation cost of HDFC Bank.

8.4 Learning and Growth Perspective

The number of employees has grown for both the Banks. However, the number has slightly reduced in the case of SBI due to retirements. Growth in human capital is viewed positively from the growth perspective. Number of offices has gone up in the case of SBI during the period of study because of merger of five Associate Banks with them. HDFC Bank has shown a steady growth in the number of offices during this period.

A summary of the scores under all the four perspectives for both the banks are discussed below:

- **Financial Perspective**: The financial performance of HDFC bank shows a growth towards the year. SBI shows a downward growth during these years. The score was highest in the year 2019 (410) for HDFC bank whereas for State Bank of India it was in the year 2011 (390). However, HDFC Bank had higher scores than State Bank of India as it has better capital adequacy ratio, Return on asset, Return on equity, net interest income to total assets ratio.
- **Customer Perspective**: In the case of customer perspective the scores reveal that the performance

of HDFC Bank is better than State Bank of India. This is due to higher amount of higher term loans to total advance ratio and good secured advances to total advances ratio. This shows that that the bank provide more benefit to the customers.

- **Internal Business Perspective**: The internal process perspective does not reveal significant difference. HDFC bank shows a decline the internal business perspective these years. HDFC bank had a stable position in 2012 to 2017 later it declines. However, the scores of SBI bank are slightly better than HDFC bank. The score was highest in the year 2013, 2015, 2017 (200) for State Bank of India whereas for HDFC bank the highest score was in the year 2009 and 2011 later it declines.
- **Learning and Growth Perspective**: The learning and growth perspective scores reveal that State Bank of India performs better than HDFC bank as it has more number of offices and employees over the period.

In the ultimate analysis of performance of both the banks using BSC model, we could observe that the performance of HDFC Bank is fairly better than that of SBI.

9. Conclusion

The Balanced Score Card has become a weapon for organizations to identify the pressure points, conflicting interests, objectives setting, prioritization of objectives, planning and budgeting. The four main important steps that need to be taken care of are translating the vision, communicating and linking, business planning, learning and feedback. In this study, an effort is made to assess the performance efficiency of SBI and HDFC Bank in four perspectives: Financial Perspective, Customer Perspective, Internal Process Perspective and Learning and Growth Perspective. The study indicates fairly better performance of HDFC Bank than State Bank of India. It could be seen that the findings under each perspective gives greater insight into the various aspects of the Banks' performance. The implication of the study is that both the banks have to visit all the areas of their business to ensure growth in financial performance, better customer service, efficient internal processes and higher learning and growth in the future years. This could ensure better profit management and risk management. This would help them to face the challenges posed by the industry as well as economy as a whole. If they could improve their performance, they could claim higher ratings in the international level. Keeping this in mind, the following suggestions are made:

The State Bank of India's NPA to net advances has increased considerably during these years. Therefore, SBI should adopt a better lending policy, so that it can manage the non-performing assets in a better way. The recovery efforts should be revitalized. Since the State Bank of India has lesser return on asset, it should increase its profit in order to get a better ROA, by aiming higher interest income and non-interest income. The Return on Equity and Capital Adequacy Ratio of State Bank of India are lower. The bank needs to increase the amount of capital as compared to its risk weighted assets. This can be either through raising Tier 1 Capital or Tier 2 Capital. More profit to be generated and disclosed reserve could be improved. The priority sector lending of HDFC bank has decreased during the last seven years. Therefore, it must concentrate on lending more portions of total advances towards priority sector. SBI also should take effort to lend more to priority sector. More active participation in the government sponsored programmes is recommended for both the banks. The profit per employee ratio of State Bank of India is very low. Therefore, it needs to increase the employee's efficiency and productivity through regular trainings and employee development activities.

There is a scope that the model could also be extended to other industries by developing appropriate measures like the ones used for banking industry as discussed in the article.

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Annexure

The different ratios that are used in the analysis are calculated employing the following equations:

1. Cash - Deposit ratio $= \dfrac{\text{Total cash in hand + balance with RBI}}{\text{Total Deposits}}$

2. Credit - Deposit Ratio $= \dfrac{\text{Total loans}}{\text{Total deposits}}$

3. Interest Income to total assets $= \dfrac{\text{Interest income}}{\text{Total assets}}$

4. Gross NPA to Net Advances $= \dfrac{\text{Gross NPA}}{\text{Net Advances}}$

5. Net Interest Income to Total Asset $= \dfrac{\text{Net Interest Income}}{\text{Total assets}}$

6. Investment - Deposit Ratio $= \dfrac{\text{Total investment}}{\text{Total deposits}}$

7. Return on Assets $= \dfrac{\text{Net profit}}{\text{Total asset}} \times 100$

8. Return on Equity $= \dfrac{\text{Net profit after tax -Preference dividend}}{\text{Equity share capital}} \times 100$

9. Capital Adequacy Ratio $= \dfrac{\text{Tier 1 capital + Tier 2 capital}}{\text{Risk weighted Assets}} \times 100$

10. Priority Sector Advances to Total Advances Ratio $= \dfrac{\text{Priority sector advances}}{\text{Total advances}}$

11. Ratio of Deposits to Total Liabilities $= \dfrac{\text{Total deposits}}{\text{Total liabilities}}$

12. Ratio of Term Loans to Total Advances $= \dfrac{\text{Term loans}}{\text{Total advances}}$

13. Ratio of Secured Advances to Total Advances $= \dfrac{\text{Secured advances}}{\text{Total advances}}$

14. Business per Employee $= \dfrac{\text{Total business}}{\text{No.of employees}}$

15. Profit per Employee $= \dfrac{\text{Net Profit}}{\text{No.of employees}}$

16. Wage Bill to Total Expenses Ratio $= \dfrac{\text{Wage bills}}{\text{Total Expenses}}$

17. Wage Bill to Total Income Ratio $= \dfrac{\text{Wage Bills}}{\text{Total Income Ratio}}$

18. Wage Bill to Intermediation Cost Ratio $= \dfrac{\text{Wage Bill}}{\text{Operating Expenses}}$