

**RESULTS AND DISCUSSION**

The present chapter focuses to record the results of financial performance of scheduled commercial banks in India based on multi-criteria decision-making approach. The study applied survival analysis in order to bring out the financial distress condition of banks. The study selected 44 Scheduled Commercial Banks based on the level of advances and continuous availability of data for 15 years. 5 non-surviving banks were selected based on the availability of data to analyze the financial distress condition of banks. The study covers a period of 15 consecutive financial years from 2003-2004 to 2017-2018. The required data for the study were collected from secondary source, and the expert's opinion was gathered to assign weights to the criterion (ratios). The study adopted statistical tools to validate the data. They are Financial Ratios, Descriptive Statistics (Arithmetic Mean, Standard Deviation, Coefficient of Variance), Cluster Analysis, Analytical Hierarchical Process (AHP), VIKOR Method, Path Analysis and Cox Proportional Hazard Model. The following were objectives of the study:

- To evaluate the performance of select scheduled commercial banks,
- To analyze the trends in non-performing assets of the banks,
- To rank the banks based on multi-criterion approach (VIKOR), and
- To predict the financial distress condition of select banks using survival analysis.

The findings of the study entitled “Prediction of Financial Distress Condition of Scheduled Commercial Banks in India – An Application of Survival Analysis” were presented sector wise based on the objectives of the study.

- Financial performance of select scheduled commercial banks,
- Trends in non-performing assets of select scheduled commercial banks,
- Ranking the banks based on multi-criterion approach – VIKOR method, and
- Prediction of financial distress condition of select banks using survival analysis

#### **4.1 FINANCIAL PERFORMANCE OF SELECT SCHEDULED COMMERCIAL BANKS**

The financial performance of Select Scheduled Commercial Banks were assessed through ratios under CAMELS model to ensure the safety and soundness of banks in terms of Capital Adequacy, Asset Quality, Management Ability, Earnings Efficiency, Liquidity and Sensitivity to risk. It helps to identify the area where the focus is needed to strengthen the financial performance of banks further. The results are presented under three groups, namely, Public sector, Private sector and Foreign banks.

##### **CAPITAL ADEQUACY**

Capital adequacy is a measure of the degree to which the bank capital is available to absorb losses. It helps to judge the financial stability and efficiency of the banks and indicate the ability of the banks to undertake additional business to earn more profit. The capital base provides a caution to the banks to withstand the credit and other risks in business. Thus, the ratios measured under capital adequacy component are:

CA1 – Capital Adequacy Ratio,

CA2 – Debt-Equity Ratio,

CA3 – Advances to Assets Ratio, and

CA4 – Government Securities to Total Investment Ratio.

Table 6 CA1 Capital Adequacy Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	12.52	12.53	13.37	12.52	11.99	13.11	13.62	12.96	12.83	11.03	9.96	10.45	11.02	11.45	8.69	<b>11.87</b>	<b>1.36</b>	<b>11.84</b>
Andhra Bank	13.71	12.11	14.00	11.33	11.61	13.22	13.93	14.38	13.18	11.76	10.78	10.63	11.58	12.38	11.00	<b>12.37</b>	<b>1.22</b>	<b>10.24</b>
Bank of Baroda	13.91	12.61	13.65	11.80	12.94	14.05	14.36	14.52	14.67	13.30	12.28	12.61	13.18	12.24	12.13	<b>13.22</b>	<b>0.91</b>	<b>7.10</b>
Bank of India	13.01	11.52	10.75	11.75	12.04	13.01	12.94	12.17	11.95	11.02	9.97	10.73	12.01	12.14	12.94	<b>11.86</b>	<b>0.90</b>	<b>7.85</b>
Bank of Maharashtra	11.88	12.68	11.27	12.06	10.85	12.05	12.78	13.35	12.43	12.59	10.79	11.94	11.20	11.18	11.01	<b>11.87</b>	<b>0.77</b>	<b>6.68</b>
Canara Bank	12.66	12.78	11.22	13.50	13.25	14.10	13.43	15.38	13.76	12.40	10.63	10.56	11.08	12.86	13.22	<b>12.72</b>	<b>1.31</b>	<b>10.67</b>
Central Bank of India	12.43	12.15	11.03	10.40	9.39	13.12	12.23	11.64	12.40	11.49	9.87	10.90	10.40	10.94	9.04	<b>11.16</b>	<b>1.16</b>	<b>10.72</b>
Corporation Bank	20.12	16.23	13.92	12.76	12.09	13.61	15.37	14.11	13.00	12.33	11.65	11.09	10.56	11.32	9.23	<b>13.16</b>	<b>2.56</b>	<b>20.17</b>
Dena Bank	9.48	11.91	10.62	11.52	11.09	12.07	12.77	13.41	11.51	11.03	11.14	10.93	11.00	11.39	11.09	<b>11.40</b>	<b>0.88</b>	<b>8.03</b>
Indian Bank	12.82	14.14	13.19	14.14	12.74	13.98	12.71	13.56	13.47	13.08	12.64	12.86	13.20	13.64	12.55	<b>13.25</b>	<b>0.53</b>	<b>4.13</b>
Indian Overseas Bank	12.49	14.20	13.04	13.27	11.93	13.20	14.78	14.55	13.32	11.85	10.78	10.11	9.67	10.49	9.26	<b>12.20</b>	<b>1.73</b>	<b>14.69</b>
Oriental Bank of Commerce	14.47	9.21	11.04	12.51	12.12	12.98	12.54	14.23	12.69	12.04	11.01	11.41	11.76	11.64	10.50	<b>12.01</b>	<b>1.31</b>	<b>11.25</b>
Punjab and Sind Bank	11.06	9.46	12.83	12.88	11.57	14.35	13.10	12.94	13.26	12.91	11.04	11.24	10.91	11.05	11.25	<b>11.99</b>	<b>1.24</b>	<b>10.73</b>
Punjab National Bank	13.10	14.78	11.95	12.29	13.46	14.03	14.16	12.42	12.63	12.72	11.52	12.21	11.28	11.66	9.20	<b>12.49</b>	<b>1.32</b>	<b>10.93</b>
Syndicate Bank	11.49	10.70	11.73	11.74	11.82	12.68	12.70	13.04	12.24	12.59	11.41	10.54	11.16	12.03	12.24	<b>11.87</b>	<b>0.71</b>	<b>6.19</b>
UCO Bank	11.88	11.26	11.12	11.56	11.02	11.93	13.21	13.71	12.35	14.15	12.68	12.17	9.63	10.93	10.94	<b>11.90</b>	<b>1.15</b>	<b>10.01</b>
Union Bank of India	12.32	12.09	11.41	12.80	12.51	13.27	12.51	12.95	11.85	11.45	10.80	10.22	10.56	11.79	11.50	<b>11.87</b>	<b>0.86</b>	<b>7.53</b>
United Bank of India	17.04	18.16	13.12	12.02	11.24	13.28	12.80	13.05	12.69	11.66	9.81	10.57	10.08	11.14	12.62	<b>12.62</b>	<b>2.24</b>	<b>18.35</b>
Vijaya Bank	14.11	12.92	11.94	11.21	11.22	13.15	12.50	13.88	13.06	11.32	10.56	11.43	12.58	12.73	13.90	<b>12.43</b>	<b>1.07</b>	<b>8.94</b>

Source: Compiled and Calculated using Capital line and RBI reports

(Continued)

Table 6 CA1 Capital Adequacy Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	11.21	12.66	11.08	11.57	13.73	13.69	15.80	12.65	13.66	17.00	16.07	15.09	15.29	14.95	16.57	<b>14.07</b>	<b>1.88</b>	<b>13.82</b>
Catholic Syrian Bank	11.23	11.35	11.26	9.58	11.21	12.29	10.82	11.22	11.08	12.29	11.00	11.00	10.55	12.15	9.91	<b>11.13</b>	<b>0.74</b>	<b>6.87</b>
City Union Bank	13.36	12.18	12.33	12.58	12.48	12.69	13.46	12.75	12.57	13.98	15.01	16.52	15.58	15.83	16.22	<b>13.84</b>	<b>1.51</b>	<b>11.30</b>
Dhanalaxmi Bank	13.56	10.16	9.75	9.77	9.21	15.38	12.99	11.80	9.49	11.06	8.67	9.59	7.51	10.26	16.47	<b>11.04</b>	<b>2.44</b>	<b>22.91</b>
DCB Bank	14.26	9.88	9.66	11.34	13.38	13.30	14.85	13.25	15.41	13.61	13.71	14.95	14.11	13.76	13.87	<b>13.29</b>	<b>1.65</b>	<b>12.84</b>
Federal Bank	11.48	11.27	13.75	13.43	22.46	20.22	18.36	16.79	16.64	14.73	15.14	15.46	13.93	12.39	14.70	<b>15.38</b>	<b>3.02</b>	<b>20.30</b>
HDFC Bank	11.66	12.16	11.41	13.08	13.60	15.69	17.44	16.22	16.52	16.80	16.07	16.79	15.50	14.55	14.82	<b>14.82</b>	<b>1.92</b>	<b>13.44</b>
ICICI Bank	10.36	11.78	13.35	11.69	13.96	15.53	19.41	19.54	18.52	18.74	17.70	17.02	16.64	17.39	18.42	<b>16.00</b>	<b>2.94</b>	<b>19.02</b>
IndusInd Bank	11.75	11.62	10.54	12.54	11.91	12.55	15.33	15.89	13.85	15.36	13.83	12.09	15.50	15.31	15.03	<b>13.54</b>	<b>1.71</b>	<b>13.10</b>
Jammu & Kashmir Bank	16.88	15.15	13.52	13.24	12.80	14.48	15.89	13.72	13.36	12.83	12.69	12.57	11.81	10.80	11.42	<b>13.41</b>	<b>1.59</b>	<b>12.25</b>
Karnataka Bank	13.03	14.16	11.78	11.03	12.17	13.48	12.37	13.33	12.84	13.22	13.20	12.41	12.03	13.30	12.04	<b>12.69</b>	<b>0.78</b>	<b>6.37</b>
Karur Vysya Bank	17.11	16.07	14.79	14.51	12.58	14.92	14.49	14.41	14.33	14.41	12.59	14.62	12.17	12.54	14.43	<b>14.26</b>	<b>1.30</b>	<b>9.44</b>
Kotak Mahindra Bank	15.25	12.80	11.27	13.46	18.65	20.01	18.35	19.92	17.52	16.05	18.83	17.17	16.34	16.77	18.22	<b>16.71</b>	<b>2.50</b>	<b>15.46</b>
Lakshmi Vilas Bank	13.79	11.32	10.79	12.43	12.73	10.29	14.82	13.19	13.10	12.32	10.90	11.34	10.67	10.38	9.81	<b>11.86</b>	<b>1.41</b>	<b>12.34</b>
RBL Bank	16.65	12.03	10.77	34.34	49.15	42.30	34.07	56.41	23.20	17.11	14.64	13.13	12.94	13.72	15.33	<b>24.39</b>	<b>14.50</b>	<b>61.54</b>
South Indian Bank	11.32	9.89	13.02	11.08	13.80	14.76	15.39	14.01	14.00	13.91	12.42	12.01	11.82	12.37	12.70	<b>12.83</b>	<b>1.44</b>	<b>11.64</b>
Tamilnad Mercantile Bank	21.07	19.74	18.33	16.77	15.35	16.05	15.54	15.13	14.69	15.01	15.59	13.89	12.75	14.02	14.83	<b>15.92</b>	<b>2.16</b>	<b>14.07</b>
<b>Foreign Banks</b>																		
Bank of America	22.92	30.07	23.41	13.33	12.14	13.83	17.16	16.03	19.12	18.40	16.70	15.16	14.97	19.24	19.42	<b>18.13</b>	<b>4.48</b>	<b>25.58</b>
Barclays Bank	37.16	20.85	22.92	13.68	21.11	17.07	16.99	14.89	14.99	19.09	19.72	18.15	18.82	17.80	17.63	<b>19.39</b>	<b>5.32</b>	<b>28.39</b>
BNP Paribas	21.70	9.41	11.61	10.76	11.79	12.60	16.37	14.67	15.78	13.82	13.89	11.61	11.76	13.77	15.38	<b>13.66</b>	<b>2.87</b>	<b>21.75</b>
Citi Bank	11.11	10.78	11.33	11.06	12.00	14.81	20.76	18.32	16.58	15.90	16.49	15.30	15.76	17.63	17.00	<b>14.99</b>	<b>2.97</b>	<b>20.51</b>
DBS Bank	55.49	35.06	31.33	29.24	18.15	18.40	13.64	12.11	13.01	12.99	13.81	17.01	18.64	16.49	16.14	<b>21.43</b>	<b>11.41</b>	<b>55.09</b>
Duetsche Bank	14.42	16.22	12.74	10.62	13.58	15.25	16.45	15.12	15.10	14.08	14.84	15.62	13.73	15.38	15.22	<b>14.56</b>	<b>1.42</b>	<b>10.13</b>
HSBC	14.54	14.03	10.61	11.06	10.59	15.31	18.03	18.03	16.04	17.10	17.38	14.84	15.99	18.76	18.48	<b>15.39</b>	<b>2.71</b>	<b>18.22</b>
Standard Chartered Bank	10.87	10.46	9.93	10.44	10.59	11.56	14.81	14.48	12.81	13.00	12.48	12.49	12.98	14.05	15.82	<b>12.45</b>	<b>1.74</b>	<b>14.47</b>

Source: Compiled and Calculated using Capital line and RBI report

### **CA1 - Capital Adequacy Ratio**

Capital adequacy ratio measures the financial capability of banks to meet the uncertainty of risk, which is absorbed by its Capital. Higher the ratio indicates that the banks are providing higher level of protection to the depositors. Table 6 presents the capital adequacy ratio of select scheduled commercial banks from 2003-2004 to 2017-2018.

In public sector banks, Indian Bank occupied top position by reporting the highest mean value at 13.25 percent with a standard deviation at 0.53 percent. The capital adequacy ratio was higher in Allahabad Bank at 8.29 percent, Central Bank of India at 9.04 percent, Corporation Bank at 9.23 percent, Indian Overseas Bank at 9.26 percent and Punjab National Bank at 9.20 percent in 2017-2018. The reported ratio was higher than the standard ratio set by RBI at 10.875 percent in 2017 under Basel III norms. Central Bank of India reported the lowest mean value at 11.16 percent, implying thereby that it may lead to distress condition.

In private sector banks, RBL Bank reported the highest mean value at 24.39 percent followed by Kotak Mahindra Bank at 16.71 percent. A higher ratio implied that the banks have adequate capital to meet the risk of unforeseen losses. Dhanalaxmi Bank reported the lowest mean value at 11.04 percent with a standard deviation at 2.44 percent implying that the bank has to improve its capital base to ensure the safety of stakeholders.

In foreign banks, DBS Bank registered the highest mean value at 21.43 percent followed by Barclays Bank at 19.39 percent with a higher deviation at 11.41 percent and 5.32 percent respectively. It indicates the banks have strong capital base. Standard Chartered Bank recorded the lowest mean value at 12.45 percent with a standard deviation at 1.74 percent.

In 2015, the Government of India announced capital infusion of Rs.70, 000 crores to strengthen the public sector banks based on the scheme of “Indradhamush” for the period of four subsequent years to meet the requirement of Basel III norms. With the assistance of capital infusion, all the select scheduled commercial banks maintained the required CAR ratio except Allahabad Bank, Corporation Bank, Indian Overseas Bank, Punjab National Bank and Central Bank of India in 2017-2018. CAR ratio of select public sector banks started to decline from 2014-2015. The ratio of private sector banks slightly improved over the period of study.

Table 7 CA2 Debt-Equity Ratio of Select Scheduled Commercial Banks

(in times)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	20.39	17.57	13.34	13.36	14.06	15.18	16.51	16.32	16.06	16.63	17.20	16.43	15.60	15.15	22.89	<b>16.44</b>	<b>2.42</b>	<b>15.24</b>
Andhra Bank	16.37	15.53	11.98	13.37	15.40	17.20	18.94	15.37	15.25	15.98	17.74	16.92	16.74	17.97	20.92	<b>16.38</b>	<b>2.09</b>	<b>13.18</b>
Bank of Baroda	14.39	14.74	12.55	14.57	14.12	15.93	16.85	15.57	14.87	15.65	16.83	16.39	15.11	15.69	15.07	<b>15.22</b>	<b>1.08</b>	<b>7.34</b>
Bank of India	18.84	18.99	20.03	21.46	14.84	15.22	17.72	18.56	16.71	17.44	17.56	18.19	18.19	18.83	15.88	<b>17.90</b>	<b>1.70</b>	<b>9.80</b>
Bank of Maharashtra	18.75	19.17	17.43	19.59	23.55	21.66	23.13	17.61	17.68	16.76	16.98	16.52	16.87	19.95	14.39	<b>18.67</b>	<b>2.47</b>	<b>13.71</b>
Canara Bank	16.59	15.86	16.38	13.90	14.91	16.46	16.57	15.35	15.10	15.12	15.12	15.68	16.03	15.88	15.83	<b>15.65</b>	<b>0.72</b>	<b>4.75</b>
Central Bank of India	18.83	18.65	19.41	22.05	18.64	20.60	22.03	21.73	16.79	15.96	16.60	16.13	15.58	17.72	16.71	<b>18.49</b>	<b>2.19</b>	<b>12.24</b>
Corporation Bank	8.71	9.34	10.23	12.05	13.61	16.09	17.63	18.59	18.17	18.70	20.47	20.01	19.21	17.86	18.95	<b>15.97</b>	<b>3.93</b>	<b>25.47</b>
Dena Bank	22.27	19.24	17.64	18.81	19.07	20.50	20.34	18.03	18.10	18.32	16.13	16.04	17.32	15.48	11.92	<b>17.95</b>	<b>2.37</b>	<b>13.69</b>
Indian Bank	18.00	16.87	17.14	12.76	12.08	10.29	10.78	11.33	11.64	12.10	12.06	11.39	11.18	11.37	12.36	<b>12.76</b>	<b>2.38</b>	<b>19.29</b>
Indian Overseas Bank	20.28	17.41	16.13	17.95	18.64	15.47	15.92	17.65	16.94	16.75	15.61	16.90	16.07	16.55	17.03	<b>17.02</b>	<b>1.22</b>	<b>7.41</b>
Oriental Bank of Commerce	13.59	14.60	9.88	11.54	13.80	13.69	15.19	13.04	13.50	14.37	14.99	15.28	14.66	16.57	18.41	<b>14.21</b>	<b>1.91</b>	<b>13.94</b>
Punjab and Sind Bank	29.26	32.19	16.96	14.49	13.58	18.04	20.21	16.46	15.65	15.89	17.37	16.04	15.76	14.41	17.05	<b>18.22</b>	<b>5.17</b>	<b>29.35</b>
Punjab National Bank	17.80	12.97	13.48	13.59	13.96	15.16	15.16	16.02	14.99	13.20	13.91	14.00	16.00	15.74	17.12	<b>14.87</b>	<b>1.41</b>	<b>9.78</b>
Syndicate Bank	22.47	21.20	19.05	22.06	22.48	24.21	22.96	20.58	18.64	18.80	19.55	21.59	23.28	19.60	20.24	<b>21.11</b>	<b>1.71</b>	<b>8.40</b>
UCO Bank	22.00	24.06	22.70	25.29	27.89	26.63	24.70	20.32	19.38	18.89	19.62	17.90	19.36	18.17	19.78	<b>21.78</b>	<b>3.13</b>	<b>14.86</b>
Union Bank of India	16.68	17.67	17.13	17.23	14.78	16.87	17.20	16.90	16.45	16.63	17.70	17.82	16.32	17.80	18.10	<b>17.02</b>	<b>0.80</b>	<b>4.84</b>
United Bank of India	16.50	15.12	16.16	15.55	18.09	17.87	17.70	16.38	16.85	17.95	21.95	19.37	20.43	17.68	15.31	<b>17.53</b>	<b>1.85</b>	<b>10.93</b>
Vijaya Bank	15.99	16.52	16.91	19.93	20.28	18.04	18.38	15.63	16.85	18.60	21.92	21.69	18.33	17.67	15.49	<b>18.15</b>	<b>1.98</b>	<b>11.31</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 7 CA2 Debt-Equity Ratio of Select Scheduled Commercial Banks

(in times)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	18.90	13.91	14.90	18.86	10.63	13.01	9.88	11.34	11.14	8.96	8.67	9.00	8.78	9.31	9.48	<b>11.78</b>	<b>3.35</b>	<b>29.38</b>
Catholic Syrian Bank	20.43	19.16	19.90	20.72	17.45	16.55	23.40	18.99	22.59	21.62	22.96	16.34	16.22	14.96	16.57	<b>19.19</b>	<b>2.65</b>	<b>14.30</b>
City Union Bank	14.18	12.95	12.56	12.90	11.34	12.48	12.51	13.01	13.43	12.67	11.02	8.99	9.12	8.58	8.31	<b>11.60</b>	<b>1.87</b>	<b>16.68</b>
Dhanalaxmi Bank	16.11	20.55	18.85	20.99	20.97	11.71	16.85	15.58	18.57	17.51	18.29	18.41	22.85	17.48	15.09	<b>17.99</b>	<b>2.69</b>	<b>15.47</b>
DCB Bank	16.51	20.42	19.83	13.86	10.22	8.51	8.83	10.46	8.69	9.89	9.72	8.69	8.98	9.33	9.24	<b>11.55</b>	<b>3.97</b>	<b>35.58</b>
Federal Bank	20.97	21.26	14.79	14.88	6.80	7.72	8.02	8.79	9.32	9.87	9.41	9.45	10.42	11.58	10.12	<b>11.56</b>	<b>4.34</b>	<b>38.82</b>
HDFC Bank	12.15	9.10	11.07	11.05	9.16	10.38	8.38	8.79	9.04	9.09	9.36	8.00	8.69	8.02	8.58	<b>9.39</b>	<b>1.18</b>	<b>13.01</b>
ICICI Bank	11.82	10.34	9.03	11.42	6.62	6.29	5.74	6.08	6.55	6.57	6.65	6.64	6.64	6.38	7.07	<b>7.59</b>	<b>1.95</b>	<b>26.61</b>
IndusInd Bank	16.88	16.55	17.94	17.26	14.92	14.98	13.21	9.87	10.79	8.34	8.33	8.91	6.67	7.22	7.97	<b>11.99</b>	<b>3.97</b>	<b>34.25</b>
Jammu & Kashmir Bank	11.90	13.19	13.20	12.85	12.87	12.96	12.73	13.16	13.34	13.42	12.42	11.14	11.15	12.99	13.25	<b>12.70</b>	<b>0.72</b>	<b>5.83</b>
Karnataka Bank	13.74	11.33	12.08	11.67	12.44	12.98	13.33	11.70	12.61	13.17	13.92	13.88	13.97	11.19	11.77	<b>12.65</b>	<b>0.96</b>	<b>7.83</b>
Karur Vysya Bank	8.45	8.89	8.92	9.00	10.82	11.20	12.19	11.94	12.59	13.82	14.14	11.21	11.58	11.00	9.46	<b>11.01</b>	<b>1.73</b>	<b>16.24</b>
Kotak Mahindra Bank	8.21	6.93	9.59	9.86	5.99	5.87	6.69	6.03	6.94	7.56	5.86	6.15	6.66	6.46	5.81	<b>6.97</b>	<b>1.26</b>	<b>18.68</b>
Lakshmi Vilas Bank	14.68	15.50	14.92	12.87	13.58	16.54	12.73	13.31	15.33	15.87	18.06	14.41	14.83	15.13	16.03	<b>14.92</b>	<b>1.39</b>	<b>9.63</b>
RBL Bank	13.34	17.36	16.14	5.73	3.41	3.84	4.50	1.89	5.20	6.90	8.22	10.79	11.67	9.82	7.95	<b>8.45</b>	<b>4.52</b>	<b>55.34</b>
South Indian Bank	21.17	18.66	14.95	16.95	13.08	14.19	15.72	16.26	17.11	15.16	14.91	15.08	15.18	14.05	14.51	<b>15.80</b>	<b>1.96</b>	<b>12.86</b>
Tamilnad Mercantile Bank	9.30	8.66	7.96	8.00	8.94	9.71	10.19	10.13	10.75	10.13	10.09	9.90	10.44	9.98	9.67	<b>9.59</b>	<b>0.82</b>	<b>8.85</b>
<b>Foreign Banks</b>																		
Bank of America	5.88	2.62	2.25	2.04	2.15	2.35	3.18	2.25	2.79	2.90	2.92	3.23	3.75	2.82	3.34	<b>2.96</b>	<b>0.91</b>	<b>31.82</b>
Barclays Bank	0.49	0.30	0.34	1.20	1.53	2.96	3.03	3.45	3.30	3.13	2.83	3.05	3.15	1.91	2.15	<b>2.19</b>	<b>1.11</b>	<b>52.53</b>
BNP Paribas	6.61	7.09	5.52	3.85	4.22	4.15	3.42	3.68	3.80	4.00	4.43	4.99	6.30	5.34	4.96	<b>4.82</b>	<b>1.10</b>	<b>23.65</b>
Citi Bank	8.89	8.24	8.30	7.66	6.13	6.11	4.92	5.18	5.86	5.66	5.67	5.37	5.91	5.06	5.79	<b>6.32</b>	<b>1.25</b>	<b>20.46</b>
DBS Bank	1.80	1.28	3.63	4.06	6.40	7.69	8.22	10.05	10.50	11.03	7.98	7.32	7.91	7.10	8.26	<b>6.88</b>	<b>2.87</b>	<b>43.12</b>
Duetsche Bank	7.88	6.97	7.15	7.18	4.34	3.73	3.98	3.49	2.83	3.66	4.66	4.37	4.52	4.16	4.88	<b>4.92</b>	<b>1.52</b>	<b>32.02</b>
HSBC	7.67	5.66	6.74	6.45	6.01	5.21	5.08	4.32	4.81	4.91	5.84	5.93	5.70	4.63	5.23	<b>5.61</b>	<b>0.85</b>	<b>15.70</b>
Standard Chartered Bank	0.40	0.40	0.40	0.37	0.33	0.31	0.34	0.35	0.34	0.34	0.34	0.33	0.32	0.32	0.34	<b>0.35</b>	<b>0.03</b>	<b>8.96</b>

Source: Compiled and Calculated using Capital line database and RBI report

**CA2 – Debt-Equity Ratio**

Debt-Equity Ratio is a key financial metric to demonstrate the degree of debt being used by banks to finance their assets. Debt Equity ratio is calculated by dividing Total liabilities proportion to Shareholders equity. Lower debt equity ratio lowers the proportion of debt used by banks, which implies higher security for depositors and creditors. Table 7 illustrates the debt equity ratio of select scheduled commercial banks in India.

Among public sector banks, the higher degree of leverage was reported by UCO Bank at 21.78 times followed by Syndicate Bank at 21.11 times with a standard deviation at 3.13 and 1.71 respectively. Higher ratio implied that the banks used more debt, which are subject to risk potential may lead to financial distress condition. The ratio of Indian Bank was found to be the lowest at 12.76 times with a standard deviation at 2.38 followed by Oriental Bank of Commerce at 14.21 times with a standard deviation at 1.91. It implied that the banks used less external debt and they have more equity source of fund to safeguard themselves from risk.

In private sector banks, Catholic Syrian Bank was reported the highest average at 19.19 times followed by Dhanalaxmi Bank at 17.99 times with a standard deviation at 2.65 and 2.69 respectively. A higher ratio showed that the banks have higher leverage in borrowings due to more external debt. It is an early warning signal for the banks to monitor the source of debts. Kotak Mahindra Bank reported the lowest average at 6.97 times with a standard deviation at 1.26. It implied that the bank has higher margin of safety to the depositors and creditors.

In foreign banks, the ratio of debt equity was found to be the highest in DBS Bank at 6.88 times with a standard deviation at 2.87. Standard Chartered Bank registered the lowest average at 0.35 times followed by Barclays Bank at 2.19 times, indicating that the banks are operating with lower risk.

Debt Equity ratio of all the select scheduled commercial banks recorded a fluctuating trend throughout the study period. The ratio of public sector banks, showed an increasing trend. It inferred that they depend more on external source of debt to run the business compared to equity source of fund. The private sector banks and foreign banks ratio showed a decreasing trend during the study period 2003-2004 to 2017-2018.

Table 8 CA3 Advances to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	44.20	46.84	52.71	61.01	59.94	60.21	58.84	61.88	60.75	63.34	62.58	65.85	63.35	63.41	60.02	<b>59.00</b>	<b>6.01</b>	<b>10.55</b>
Andhra Bank	47.68	53.51	54.34	58.64	60.47	64.41	62.05	65.47	66.80	67.23	64.31	68.02	65.21	61.34	61.55	<b>61.40</b>	<b>5.57</b>	<b>9.39</b>
Bank of Baroda	41.83	45.85	52.84	58.42	59.41	63.20	62.89	63.81	64.24	59.98	60.20	59.87	57.16	55.16	59.37	<b>57.61</b>	<b>6.23</b>	<b>11.19</b>
Bank of India	54.02	58.45	58.04	60.01	63.44	63.25	61.28	60.68	64.71	63.93	64.68	64.98	58.71	58.31	55.83	<b>60.69</b>	<b>3.32</b>	<b>5.67</b>
Bank of Maharashtra	36.41	39.70	52.74	58.75	60.81	58.08	56.72	61.31	61.44	64.48	65.12	67.40	66.77	59.81	54.77	<b>57.62</b>	<b>8.68</b>	<b>15.60</b>
Canara Bank	48.72	54.72	59.75	59.31	59.35	62.93	63.89	62.83	62.09	58.68	61.16	60.14	58.30	58.20	61.57	<b>59.44</b>	<b>3.64</b>	<b>6.34</b>
Central Bank of India	35.81	39.60	49.93	55.49	58.65	57.75	57.55	61.74	64.12	64.07	61.10	60.32	58.82	41.74	47.89	<b>54.31</b>	<b>8.83</b>	<b>16.83</b>
Corporation Bank	47.64	54.67	59.16	56.75	58.82	55.81	56.59	60.51	61.39	61.32	61.65	64.05	59.62	56.51	53.90	<b>57.89</b>	<b>3.91</b>	<b>6.99</b>
Dena Bank	42.88	47.05	53.59	58.18	59.57	59.59	61.58	63.28	64.88	57.99	62.11	60.76	61.64	55.96	54.19	<b>57.55</b>	<b>5.86</b>	<b>10.53</b>
Indian Bank	39.99	45.92	47.20	51.75	56.50	61.15	61.29	61.82	63.87	64.88	65.27	65.27	63.35	58.52	61.95	<b>57.92</b>	<b>7.73</b>	<b>13.81</b>
Indian Overseas Bank	42.89	49.60	58.55	57.21	59.31	61.85	60.26	62.55	64.07	65.55	63.98	60.13	58.61	56.83	53.43	<b>58.32</b>	<b>5.76</b>	<b>10.22</b>
Oriental Bank of Commerce	47.99	46.79	56.76	59.56	60.02	60.84	60.57	59.29	62.91	64.13	63.13	63.02	61.96	62.22	58.28	<b>59.17</b>	<b>5.01</b>	<b>8.77</b>
Punjab and Sind Bank	40.16	40.22	47.46	53.47	59.31	59.63	57.57	62.20	63.30	63.90	60.49	65.27	62.31	60.33	58.49	<b>56.94</b>	<b>7.82</b>	<b>14.22</b>
Punjab National Bank	46.13	47.84	51.34	59.43	60.04	62.65	62.90	63.99	64.11	64.47	63.42	63.03	61.74	58.20	56.56	<b>59.06</b>	<b>5.83</b>	<b>10.21</b>
Syndicate Bank	43.72	51.28	59.69	57.88	59.79	62.59	65.02	68.21	67.75	68.60	69.05	66.87	65.39	66.76	65.03	<b>62.51</b>	<b>6.90</b>	<b>11.42</b>
UCO Bank	47.09	50.66	60.44	62.77	61.34	61.43	59.87	60.45	63.81	64.48	62.43	59.83	51.40	51.72	49.70	<b>57.83</b>	<b>5.68</b>	<b>10.17</b>
Union Bank of India	49.58	55.36	59.86	60.70	59.75	59.83	61.03	63.88	67.75	66.56	64.60	66.80	65.80	63.14	58.92	<b>61.57</b>	<b>4.65</b>	<b>7.82</b>
United Bank of India	31.52	39.52	46.69	52.37	51.29	57.05	54.97	59.42	61.80	60.12	52.57	54.23	52.55	46.86	43.15	<b>50.94</b>	<b>7.95</b>	<b>16.16</b>
Vijaya Bank	45.89	48.86	52.84	57.19	56.40	56.86	59.13	59.40	60.43	62.86	59.28	60.74	61.13	60.97	65.32	<b>57.82</b>	<b>5.00</b>	<b>8.95</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 8 CA3 Advances to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	38.77	41.28	44.82	50.30	54.42	55.20	57.75	58.67	59.43	57.83	60.02	60.84	62.74	62.02	63.58	<b>55.18</b>	<b>7.61</b>	<b>14.27</b>
Catholic Syrian Bank	44.07	51.49	56.10	56.81	55.56	52.33	58.68	63.73	63.99	65.82	57.42	59.93	50.13	50.01	58.79	<b>56.32</b>	<b>5.76</b>	<b>10.59</b>
City Union Bank	48.47	57.59	61.78	62.08	61.74	61.02	59.12	63.43	66.14	66.35	64.40	64.46	66.21	67.57	69.74	<b>62.67</b>	<b>4.92</b>	<b>8.13</b>
Dhanalaxmi Bank	46.53	53.29	55.92	53.26	52.11	56.64	61.91	63.52	59.66	56.23	54.02	53.43	55.77	52.26	49.72	<b>54.95</b>	<b>4.26</b>	<b>8.03</b>
DCB Bank	45.24	46.27	49.91	50.36	53.56	54.95	56.24	57.67	60.83	58.33	62.93	64.80	67.50	65.71	67.23	<b>57.44</b>	<b>7.14</b>	<b>12.87</b>
Federal Bank	50.91	52.45	56.72	59.19	57.97	57.45	61.50	61.81	62.28	61.84	57.94	61.69	61.25	63.66	66.38	<b>59.54</b>	<b>3.96</b>	<b>6.89</b>
HDFC Bank	41.87	49.64	47.65	51.41	47.60	53.93	56.54	57.67	57.82	59.87	61.63	61.89	62.71	64.19	61.87	<b>55.75</b>	<b>6.53</b>	<b>12.12</b>
ICICI Bank	49.66	54.27	57.99	56.72	56.35	57.47	49.80	53.20	51.83	54.02	56.75	59.73	60.13	59.89	58.05	<b>55.72</b>	<b>3.34</b>	<b>6.20</b>
IndusInd Bank	48.40	57.61	52.83	52.85	54.87	57.11	58.00	57.27	60.80	60.36	63.20	61.42	61.80	63.22	65.33	<b>58.34</b>	<b>4.49</b>	<b>7.97</b>
Jammu & Kashmir Bank	43.78	47.16	54.76	59.62	57.65	55.53	54.19	51.86	54.88	54.64	59.00	58.72	62.53	60.74	63.46	<b>55.90</b>	<b>5.20</b>	<b>9.63</b>
Karnataka Bank	44.13	50.13	52.08	58.86	56.02	51.61	53.33	54.67	56.96	60.59	60.09	60.89	59.79	57.55	67.04	<b>56.25</b>	<b>5.34</b>	<b>9.82</b>
Karur Vysya Bank	56.61	58.59	61.67	63.53	64.61	61.02	61.28	63.09	63.62	63.06	65.84	67.86	66.17	66.07	66.83	<b>63.32</b>	<b>3.02</b>	<b>4.93</b>
Kotak Mahindra Bank	35.99	61.61	62.37	54.85	54.93	57.90	55.49	57.68	59.51	57.91	60.54	62.37	61.68	63.37	64.03	<b>58.02</b>	<b>6.58</b>	<b>11.74</b>
Lakshmi Vilas Bank	53.31	57.13	59.98	61.96	58.99	63.03	59.79	60.85	63.04	66.24	62.41	66.19	68.37	67.19	63.68	<b>62.14</b>	<b>3.88</b>	<b>6.47</b>
RBL Bank	42.44	48.64	50.10	46.21	39.72	46.93	56.09	58.95	57.33	49.19	54.05	53.31	54.15	60.48	65.10	<b>52.18</b>	<b>6.69</b>	<b>13.27</b>
South Indian Bank	45.35	56.61	58.83	58.00	61.17	58.14	61.97	62.43	67.56	63.89	65.86	63.20	64.68	62.38	65.92	<b>61.07</b>	<b>5.22</b>	<b>8.85</b>
Tamilnad Mercantile Bank	41.54	46.76	51.23	57.10	60.14	58.45	61.00	66.75	67.85	68.64	64.94	65.00	64.02	59.41	62.68	<b>59.70</b>	<b>7.57</b>	<b>13.12</b>
<b>Foreign Banks</b>																		
Bank of America	59.86	58.61	56.22	46.16	42.51	34.09	26.94	48.06	38.36	33.92	31.62	33.06	34.92	39.18	40.28	<b>41.58</b>	<b>9.88</b>	<b>24.60</b>
Barclays Bank	0.19	0.26	0.23	5.53	59.06	50.98	36.43	35.52	39.12	26.74	24.27	41.44	51.26	38.75	40.22	<b>30.00</b>	<b>19.16</b>	<b>66.10</b>
BNP Paribas	43.90	58.30	49.46	55.66	49.71	37.74	39.72	50.96	52.72	40.96	43.23	49.16	54.38	41.89	43.47	<b>47.42</b>	<b>6.10</b>	<b>13.32</b>
Citi Bank	51.49	53.51	53.80	49.51	45.75	37.92	38.39	36.38	36.68	40.51	38.94	43.84	39.87	36.89	33.92	<b>42.49</b>	<b>6.48</b>	<b>15.77</b>
DBS Bank	17.85	39.73	28.07	20.26	26.02	21.67	21.42	31.69	35.28	34.04	33.33	44.09	40.26	49.03	38.13	<b>32.06</b>	<b>9.04</b>	<b>29.20</b>
Duetsche Bank	24.41	23.64	21.43	27.91	36.26	35.25	45.61	49.84	43.84	55.26	50.29	58.67	62.35	46.13	50.04	<b>42.06</b>	<b>12.76</b>	<b>31.41</b>
HSBC	37.97	45.24	44.87	42.13	39.44	29.15	25.96	30.05	32.50	33.62	30.48	33.85	38.97	35.46	35.62	<b>35.69</b>	<b>5.54</b>	<b>16.08</b>
Standard Chartered Bank	47.07	53.67	52.39	51.11	45.41	38.46	46.81	46.28	45.66	51.71	52.21	51.90	51.21	47.31	46.03	<b>48.48</b>	<b>3.89</b>	<b>8.31</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **CA3 – Advances to Total Assets Ratio**

The ratio of Advances to Total Assets exposes the aggressiveness in lending and the volume of loans and advances being disbursed by banks to yield good return. Higher ratio indicates higher investment, which results better profitability for the banks. Thus, the ratio is better off with higher one. Table 8 shows the Advances to Total Assets of select scheduled commercial banks from 2003-2004 to 2017-2018.

Among public sector banks, Syndicate Bank registered the highest mean value at 62.51 percent with a standard deviation at 6.90 percent followed by Union Bank of India at 61.57 percent with a standard deviation at 4.65 percent. It implied that the banks are more aggressive in lending practices. United Bank of India registered the lowest mean value at 50.94 percent followed by Central Bank of India at 54.31 percent with a higher standard deviation at 7.95 percent and 8.83 percent respectively. Majority of the select banks showed an increasing trend, where the advances granted by the banks to the lenders were higher in 2017 – 2018 as against 2012-2013.

In private sector banks, the highest lending exposure was observed in Karur Vysya Bank at 63.32 percent followed by City Union Bank at 62.67 percent with a standard deviation at 3.02 percent and 4.92 percent respectively. It showed that the banks have higher lending exposure, which may lead to higher profitability. RBL Bank reported the lowest lending exposure at 52.18 percent followed by Dhanalaxmi Bank at 54.95 percent with a standard deviation at 6.69 percent and 4.26 percent respectively. It indicates the banks granted lower advances, which may affect their profitability.

In foreign banks, Standard Chartered Bank reported the highest average at 48.48 percent. Barclays Bank reported the lowest average at 30.00 percent. It showed that the banks have lower lending exposure.

The ratio of Advances to Total Assets of all the select scheduled commercial banks registered an increasing trend during the study period. The ratio of public sector banks and private sector banks was increased in 2017-2018 compared to 2003-2004. It showed that the banks improved their interest earning capacity by granting more advances to the lenders. The average ratio of foreign banks was below 50 percent during the study period.

**Table 9 CA4 Government Securities to Total Investments of Select Scheduled Commercial Banks**

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	75.60	82.31	78.82	78.12	74.51	72.12	80.62	81.17	83.29	78.50	78.08	83.12	81.43	86.50	92.78	<b>80.46</b>	<b>4.86</b>	<b>6.25</b>
Andhra Bank	85.39	82.45	85.19	79.42	87.84	89.97	94.55	93.87	90.21	87.62	88.04	92.79	92.22	93.59	91.20	<b>88.96</b>	<b>4.27</b>	<b>4.97</b>
Bank of Baroda	73.88	78.24	74.06	75.14	78.10	77.89	82.45	84.52	84.42	84.98	83.35	84.64	86.05	88.06	88.86	<b>81.64</b>	<b>4.83</b>	<b>6.13</b>
Bank of India	69.24	70.81	72.77	72.73	81.99	83.83	88.63	80.71	84.99	86.53	87.85	87.72	90.43	88.72	88.12	<b>82.34</b>	<b>7.10</b>	<b>8.93</b>
Bank of Maharashtra	86.38	88.57	86.67	82.47	86.15	87.99	85.47	82.44	79.30	80.73	81.65	89.62	89.22	85.78	87.36	<b>85.32</b>	<b>3.13</b>	<b>3.79</b>
Canara Bank	78.60	76.19	82.82	82.52	85.98	87.98	90.10	85.07	86.97	84.20	84.83	88.38	89.22	90.45	88.83	<b>85.48</b>	<b>4.00</b>	<b>4.85</b>
Central Bank of India	78.18	78.96	81.36	77.96	82.68	87.97	88.69	87.62	85.62	82.82	78.82	84.03	74.87	80.43	79.23	<b>81.95</b>	<b>4.02</b>	<b>5.07</b>
Corporation Bank	81.15	81.06	83.52	80.26	81.58	70.38	71.81	64.65	78.01	80.13	78.10	91.27	89.02	85.14	87.44	<b>80.23</b>	<b>6.88</b>	<b>8.87</b>
Dena Bank	78.07	81.97	82.03	82.17	82.37	79.84	84.79	81.26	84.27	77.92	79.27	87.08	85.43	86.85	86.36	<b>82.65</b>	<b>2.96</b>	<b>3.71</b>
Indian Bank	83.48	85.55	83.68	78.73	82.27	85.33	84.48	77.95	81.78	78.18	85.28	89.26	79.27	86.57	87.67	<b>83.30</b>	<b>3.42</b>	<b>4.25</b>
Indian Overseas Bank	84.45	83.63	82.99	87.57	90.80	87.32	87.42	80.20	91.82	90.23	87.23	86.16	84.03	84.87	86.95	<b>86.38</b>	<b>3.02</b>	<b>3.62</b>
Oriental Bank of Commerce	74.14	79.33	80.92	83.25	85.95	87.49	91.53	73.87	75.52	75.27	75.23	83.52	79.35	84.06	80.67	<b>80.67</b>	<b>5.14</b>	<b>6.59</b>
Punjab and Sind Bank	73.28	0.00	82.81	84.29	87.45	86.75	85.37	86.97	85.08	82.98	76.64	86.80	76.30	76.11	72.84	<b>76.24</b>	<b>20.99</b>	<b>28.50</b>
Punjab National Bank	78.52	81.30	81.40	81.06	81.90	86.03	84.88	83.54	81.30	82.83	78.10	82.70	80.14	79.09	76.86	<b>81.31</b>	<b>2.44</b>	<b>3.10</b>
Syndicate Bank	89.21	91.29	89.07	89.32	89.57	89.47	85.69	86.41	89.43	87.99	86.87	89.73	87.48	89.58	90.88	<b>88.80</b>	<b>1.54</b>	<b>1.79</b>
UCO Bank	76.91	82.00	86.25	86.40	83.41	81.32	73.68	83.69	89.17	84.57	81.16	89.25	86.18	83.40	76.43	<b>82.92</b>	<b>4.37</b>	<b>5.46</b>
Union Bank of India	69.37	69.48	76.24	80.08	82.30	81.07	78.41	79.57	81.05	76.48	74.42	86.42	80.78	78.90	79.81	<b>78.29</b>	<b>4.40</b>	<b>5.82</b>
United Bank of India	81.23	84.58	85.17	78.73	68.81	78.46	75.06	72.83	78.04	76.62	78.18	80.98	81.03	72.33	72.71	<b>77.65</b>	<b>4.50</b>	<b>6.00</b>
Vijaya Bank	82.69	86.62	84.56	80.90	82.16	82.24	84.72	72.77	82.74	83.30	78.11	85.70	84.04	90.14	88.30	<b>83.27</b>	<b>3.99</b>	<b>4.96</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 9 CA4 Government Securities to Total Investments of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	64.88	50.10	54.77	61.11	59.87	61.34	61.09	61.39	62.81	63.76	61.30	69.95	73.40	72.21	67.62	<b>63.04</b>	<b>5.92</b>	<b>9.73</b>
Catholic Syrian Bank	87.70	88.02	83.69	80.97	75.32	74.83	78.67	80.83	88.77	89.51	68.37	91.34	81.63	87.76	82.41	<b>82.66</b>	<b>6.24</b>	<b>7.81</b>
City Union Bank	90.94	91.08	84.60	87.45	86.93	81.64	80.07	79.77	83.89	86.66	89.34	93.47	93.86	95.15	96.89	<b>88.12</b>	<b>5.27</b>	<b>6.19</b>
Dhanalaxmi Bank	85.58	90.12	85.45	85.68	85.85	88.53	82.82	90.89	95.49	92.70	84.32	82.00	81.01	74.57	69.60	<b>84.98</b>	<b>6.43</b>	<b>7.84</b>
DCB Bank	82.81	87.80	77.69	74.07	79.39	77.10	77.61	76.10	80.30	72.45	77.24	87.70	91.97	82.01	78.94	<b>80.21</b>	<b>5.23</b>	<b>6.75</b>
Federal Bank	80.69	87.43	90.54	85.85	77.78	68.44	71.07	68.54	66.26	68.90	65.61	82.05	79.27	76.48	79.48	<b>76.56</b>	<b>7.79</b>	<b>10.53</b>
HDFC Bank	59.55	58.02	69.14	73.76	64.11	88.68	87.10	75.64	78.19	76.07	78.25	79.39	80.51	75.73	77.95	<b>74.81</b>	<b>8.55</b>	<b>11.83</b>
ICICI Bank	69.96	68.31	71.57	74.15	67.76	61.59	56.71	48.27	54.77	54.28	54.17	67.91	70.33	69.67	69.72	<b>63.94</b>	<b>7.88</b>	<b>12.75</b>
IndusInd Bank	84.10	83.68	84.72	82.31	81.99	77.87	81.92	73.96	81.68	71.78	71.33	78.27	82.54	85.70	80.61	<b>80.16</b>	<b>4.43</b>	<b>5.72</b>
Jammu & Kashmir Bank	59.64	64.05	70.61	74.83	79.20	70.84	60.49	52.42	53.39	54.62	57.06	59.12	68.53	76.68	91.09	<b>66.17</b>	<b>10.71</b>	<b>16.75</b>
Karnataka Bank	60.88	73.93	73.10	78.58	71.78	66.13	64.06	58.19	63.32	65.99	68.52	81.62	71.14	68.65	84.78	<b>70.05</b>	<b>7.28</b>	<b>10.75</b>
Karur Vysya Bank	77.58	83.00	80.99	83.82	86.07	80.91	86.07	87.45	88.07	91.27	92.04	93.02	92.68	86.79	88.67	<b>86.56</b>	<b>4.50</b>	<b>5.38</b>
Kotak Mahindra Bank	78.97	72.77	83.05	85.45	88.68	89.46	77.44	77.09	76.91	74.68	68.53	79.84	79.52	80.29	80.17	<b>79.52</b>	<b>5.41</b>	<b>7.04</b>
Lakshmi Vilas Bank	81.01	90.65	91.24	90.69	91.76	89.86	86.48	84.39	80.85	87.90	83.92	85.21	89.37	91.43	89.39	<b>87.61</b>	<b>3.61</b>	<b>4.26</b>
RBL Bank	77.82	77.03	75.87	70.05	78.38	77.31	77.39	56.53	63.18	59.15	61.78	77.41	71.22	72.70	73.29	<b>71.27</b>	<b>7.24</b>	<b>10.52</b>
South Indian Bank	90.36	91.87	89.66	85.46	78.52	66.62	78.60	76.09	87.38	79.71	80.16	87.68	94.70	87.72	87.78	<b>84.15</b>	<b>7.12</b>	<b>8.76</b>
Tamilnad Mercantile Bank	56.62	60.19	60.55	64.12	74.98	76.61	86.45	88.53	89.99	92.03	88.12	86.58	87.83	81.80	84.27	<b>78.58</b>	<b>11.91</b>	<b>15.69</b>
<b>Foreign Banks</b>																		
Bank of America	95.81	74.81	78.51	71.30	68.99	90.83	80.64	55.63	69.49	69.40	84.88	91.53	93.94	99.69	78.66	<b>80.27</b>	<b>11.97</b>	<b>15.44</b>
Barclays Bank	73.97	67.23	66.83	40.30	77.44	61.64	58.84	55.61	35.43	57.56	49.55	56.01	59.52	47.61	50.86	<b>57.23</b>	<b>11.16</b>	<b>20.18</b>
BNP Paribas	87.09	78.62	91.62	94.68	93.82	95.88	75.38	64.05	101.31	77.33	89.96	98.51	89.59	71.45	74.15	<b>85.56</b>	<b>10.83</b>	<b>13.10</b>
Citi Bank	80.59	81.79	90.08	92.43	95.32	95.36	97.83	97.09	98.15	93.35	96.75	99.65	98.58	99.98	92.33	<b>93.95</b>	<b>5.72</b>	<b>6.31</b>
DBS Bank	100.00	100.61	78.75	62.87	61.44	50.18	51.47	40.08	51.17	59.93	64.08	89.71	88.18	79.17	81.24	<b>70.59</b>	<b>18.41</b>	<b>27.00</b>
Duetsche Bank	89.53	85.89	71.46	69.10	91.98	79.48	74.85	62.95	60.97	74.89	79.92	90.99	87.71	91.36	90.83	<b>80.13</b>	<b>10.30</b>	<b>13.31</b>
HSBC	84.97	83.02	70.88	72.42	75.52	57.38	67.99	55.41	52.69	61.42	81.85	84.30	79.36	77.42	72.61	<b>71.82</b>	<b>10.41</b>	<b>15.00</b>
Standard Chartered Bank	71.63	76.69	79.84	84.14	92.68	90.23	80.88	85.66	81.36	81.64	83.12	84.99	82.00	83.74	88.50	<b>83.14</b>	<b>5.02</b>	<b>6.25</b>

Source: Compiled and Calculated using Capital line database and RBI reports

#### **CA4 - Government Securities to Total Investment**

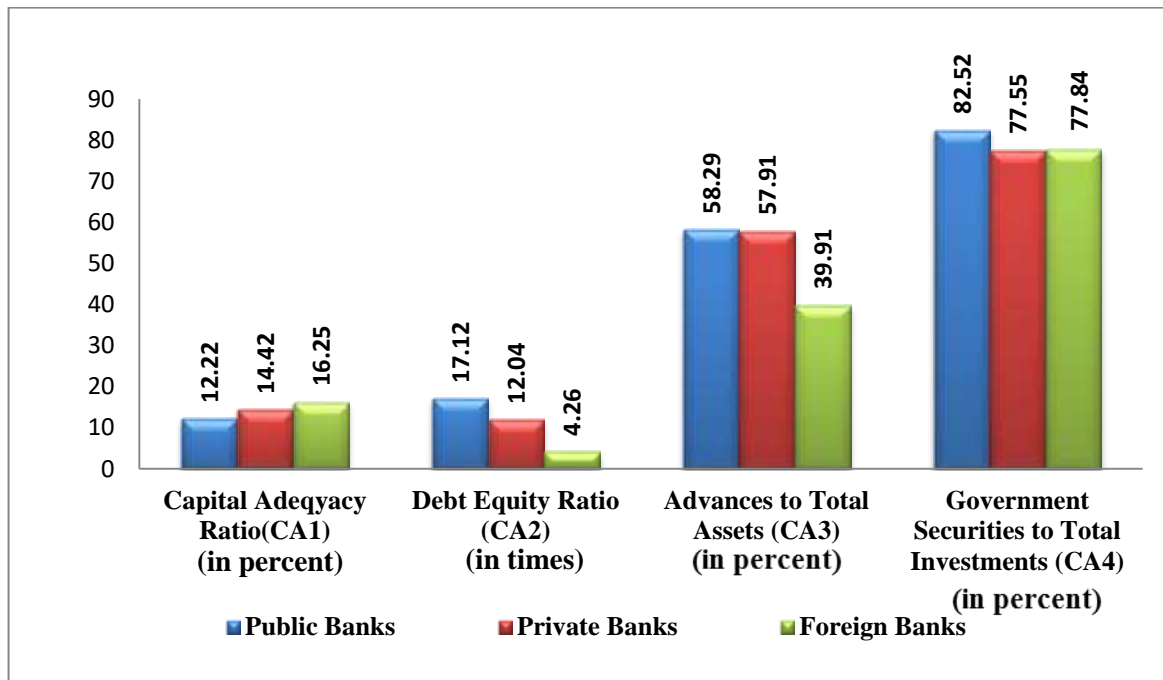
The investment in safest debt instrument - Government securities as proportion to Total Investment ratio measures the capacity of banks in bearing risk. Higher the ratio, higher the investment in government securities. Hence, lower the risk is involved in investment. Table 9 portrays the Government Securities to Total Investment of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the mean value of Andhra Bank was found to be the highest at 88.96 percent with a standard deviation at 4.27 percent followed by Syndicate Bank at 88.80 percent with a standard deviation at 1.54 percent. It showed that the banks have lower risk in investments as to total investments. Punjab and Sind Bank had the average ratio at 76.24 percent with a higher standard deviation at 20.99 percent. United Bank of India at 77.65 percent with a lower standard deviation at 4.50 percent, lower standard deviation implied the ratio was not much deviated from mean.

Among private sector banks, City Union Bank reported the highest mean value at 88.12 percent followed by Lakshmi Vilas Bank at 87.61 percent with a standard deviation at 5.27 percent and 3.61 percent respectively. It indicates that the banks have higher portion of risk free investments in their investment portfolio. Axis Bank recorded the lowest mean value at 63.04 percent with a standard deviation at 5.92 percent. ICICI Bank recorded an average at 63.94 percent and 7.88 percent data were deviated from mean. It implied that the banks invested the lowest portion of investment in government securities.

In foreign banks, City Bank recorded the highest mean value at 93.95 percent with a standard deviation at 5.72 percent followed by BNP Paribas Bank at 85.56 percent with a standard deviation at 10.83 percent. Barclays Bank recorded the lowest mean value at 57.23 percent with a standard deviation at 11.16 percent, which implied that the bank has very limited investment in government securities and preferred other investments. The higher risk taking ability of the banks may improve their return on investment.

The ratio of Government Securities to Total Assets of public sector banks increased in 2017-2018 as against 2003-2004 except Punjab National Bank and United Bank of India during the study period. Majority of the private sector banks showed a fluctuating trend. The ratio of foreign banks recorded a fluctuating trend during the study period.



Source: Computed data

**Figure 2**  
**Group-wise Capital Adequacy of Scheduled Commercial Banks**

Figure 2 shows group-wise capital adequacy ratios of select scheduled commercial banks from 2003-2004 to 2017-2018. Capital Adequacy Ratio (CA1) of all the select banks were above the prescribed rate of 10.875 percent in 2017-2018. The foreign banks reported the highest capital base at 16.25 percent followed by private sector banks at 14.42 percent and the public sector banks at 12.22 percent. The current rate of CAR is 9 percent.

The average Debt-Equity Ratio (CA2) of public sector banks was the highest at 17.12 times, implying the banks are operating with more debts. The private sector banks covered the debt at 12.04 times. However, the foreign banks maintained lower debt equity ratio at 4.26 signifying the banks used more equity source of funds than external source.

The ratio of Advances to Total assets (CA3) indicated that the public sector banks are more aggressive in lending by reporting highest average at 58.29 percent followed by private sector banks at 57.91 percent. The foreign banks average was found to be the lowest at 39.91 percent implying the banks have lower lending exposure.

Government Securities to Total Investments (CA4) of public sector group was observed to be the highest 82.52 percent implying low risk to its assets. The ratio of foreign banks was reported an average at 77.84 percent and private sector banks at 77.55 percent.

To find whether there was any significant mean difference in the capital adequacy variable of select scheduled commercial banks, t-test was applied and the results are presented in Table 10.

*H<sub>01</sub>: There is no significant mean difference in capital adequacy of select scheduled commercial banks in India.*

**Table 10**

**Results of t-test of Capital Adequacy of Select Scheduled Commercial Banks**

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>t-test value</b>	<b>P-value</b>	<b>Significance</b>
Capital Adequacy Ratio (in percent)	13.80	2.73	33.423	.000	Significant
Debt-Equity Ratio (in times)	12.82	5.39	15.754	.000	Significant
Advances to Total Assets (in percent)	54.81	7.99	45.451	.000	Significant
Government Securities to Total Investment (in percent)	79.74	7.48	70.710	.000	Significant

**Source: Computed data**

It is observed from the Table 10, that there is a significant mean difference in respect of capital adequacy of select banks. The p-values of capital adequacy ratios were found to be significant at one percent level. Hence, null hypothesis is rejected. **There is a significant mean difference in the capital adequacy ratios of the select scheduled commercial banks.**

## **ASSET QUALITY**

“Evaluating the quality of a bank’s assets is both the most important and normally the most difficult facet of bank analysis”.

- Moody’s Investor Services, Global Credit Analysis.

Asset Quality determines the level of credit risk which is associated with the banks financial assets. Deteriorated asset quality has been shown to be the root cause of most banks failure, although the apparent cause may be insufficient liquidity, cash flow and capital. The level of NPAs in public sector banks is still higher as compared to private sector banks and foreign banks. Thus, it is one of the major area to focus and the bank is making all the efforts to bring down the ratio of non-performing assets. As such, strategic measures are needed to make it viable in order to strengthen their profitability and efficiency in a better way. Thus, the following ratios were calculated to assess the effect of asset quality on financial operations of select banks.

AQ1 – Gross NPA to Gross Advances,

AQ2 – Net NPA to Net Advances,

AQ3 – Net NPA to Total Assets, and

AQ4 – Earnings Base Ratio.

Table 11 AQ1 Gross NPA to Gross Advances of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	8.97	6.06	4.05	2.64	2.02	1.82	1.69	1.75	1.83	3.92	5.76	5.50	9.72	13.32	16.36	<b>5.69</b>	<b>4.39</b>	<b>79.81</b>
Andhra Bank	4.78	2.52	1.98	1.42	1.09	0.83	0.87	1.39	2.16	3.78	5.44	5.45	8.75	12.92	18.84	<b>4.81</b>	<b>4.96</b>	<b>106.58</b>
Bank of Baroda	10.89	7.58	3.97	2.50	1.85	1.28	1.36	1.37	1.55	2.41	2.97	3.77	10.19	10.92	12.78	<b>5.03</b>	<b>4.05</b>	<b>83.34</b>
Bank of India	8.03	5.65	3.77	2.45	1.69	1.72	2.87	2.25	2.35	2.99	3.17	5.45	13.36	13.76	17.48	<b>5.80</b>	<b>4.89</b>	<b>87.31</b>
Bank of Maharashtra	7.98	7.31	5.70	3.56	2.61	2.32	2.98	2.49	2.29	1.50	3.19	6.40	9.47	17.28	20.20	<b>6.35</b>	<b>5.41</b>	<b>88.21</b>
Canara Bank	6.29	3.87	2.24	1.51	1.18	1.56	1.52	1.48	1.72	2.57	2.50	3.91	9.46	9.79	11.97	<b>4.10</b>	<b>3.44</b>	<b>86.70</b>
Central Bank of India	13.19	9.40	7.14	4.93	3.21	2.70	2.33	1.84	4.88	4.88	6.37	6.23	12.29	18.71	22.82	<b>8.06</b>	<b>5.99</b>	<b>76.92</b>
Corporation Bank	5.16	3.47	2.59	2.07	1.49	1.15	1.02	0.90	1.26	1.71	3.42	4.84	9.99	11.85	20.40	<b>4.75</b>	<b>5.24</b>	<b>114.07</b>
Dena Bank	15.27	9.91	6.56	4.00	2.46	2.13	1.81	1.87	1.68	2.20	3.34	5.49	10.06	16.82	23.42	<b>7.13</b>	<b>6.46</b>	<b>93.71</b>
Indian Bank	8.24	4.03	2.96	1.87	1.21	0.89	0.82	0.97	2.03	3.34	3.70	4.46	6.72	7.60	7.49	<b>3.76</b>	<b>2.54</b>	<b>69.91</b>
Indian Overseas Bank	7.57	5.44	3.52	2.37	1.65	2.56	4.52	2.74	2.76	4.06	5.07	8.51	17.86	23.81	26.44	<b>7.93</b>	<b>7.78</b>	<b>101.58</b>
Oriental Bank of Commerce	6.05	9.69	6.30	3.29	2.35	1.54	1.75	1.98	3.17	3.21	3.99	5.21	9.64	13.92	17.94	<b>6.00</b>	<b>4.67</b>	<b>80.59</b>
Punjab and Sind Bank	19.68	18.94	10.54	2.48	0.74	0.65	0.63	0.99	1.65	2.97	4.42	4.79	6.53	10.59	11.42	<b>6.47</b>	<b>6.20</b>	<b>99.26</b>
Punjab National Bank	9.65	6.13	4.20	3.49	2.77	1.61	1.71	1.79	2.94	4.31	5.34	6.61	12.96	12.81	18.90	<b>6.35</b>	<b>4.91</b>	<b>79.99</b>
Syndicate Bank	7.58	5.33	4.09	3.00	2.75	1.95	2.21	2.41	2.55	2.00	2.64	3.15	6.74	8.66	11.79	<b>4.46</b>	<b>2.86</b>	<b>66.42</b>
UCO Bank	7.06	5.03	3.29	3.19	2.98	2.23	2.01	3.14	3.51	5.48	4.38	6.88	15.81	19.56	30.58	<b>7.68</b>	<b>7.82</b>	<b>105.44</b>
Union Bank of India	7.94	5.10	3.92	2.99	2.21	1.98	2.23	2.38	3.04	3.01	4.14	5.05	8.89	11.53	16.33	<b>5.38</b>	<b>3.98</b>	<b>76.58</b>
United Bank of India	9.39	6.32	4.75	3.65	2.71	2.87	3.22	2.51	3.41	4.24	10.50	9.69	13.56	16.07	24.93	<b>7.86</b>	<b>6.15</b>	<b>81.10</b>
Vijaya Bank	3.46	2.97	3.22	2.32	1.61	1.96	2.37	2.56	2.95	2.18	2.43	2.79	6.66	6.65	6.38	<b>3.37</b>	<b>1.66</b>	<b>51.15</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 11 AQ1 Gross NPA to Gross Advances of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	2.86	1.99	1.68	1.13	0.82	1.09	1.25	1.12	1.06	1.21	1.36	1.45	1.78	5.54	7.51	2.12	1.83	89.03
Catholic Syrian Bank	9.06	7.38	5.89	4.26	3.95	4.65	3.34	3.09	2.37	2.37	3.80	4.96	5.54	7.23	8.02	5.06	2.01	41.15
City Union Bank	10.57	6.42	4.37	2.60	1.82	1.80	1.36	1.21	1.01	1.13	1.80	1.85	2.41	2.83	3.04	2.95	2.45	86.19
Dhanalaxmi Bank	11.61	8.84	6.96	5.22	3.00	2.01	1.55	0.74	1.19	4.84	6.02	7.01	6.51	4.83	7.52	5.19	2.98	59.39
DCB Bank	8.60	14.41	16.35	5.47	1.54	8.47	8.93	6.09	4.55	3.26	1.69	1.77	1.52	1.60	1.80	5.74	4.63	83.53
Federal Bank	7.60	7.57	4.76	3.01	2.45	2.59	3.00	3.54	3.43	3.51	2.49	2.05	2.84	2.34	3.02	3.61	1.68	48.07
HDFC Bank	1.87	1.71	1.44	1.38	1.41	1.98	1.42	1.05	1.02	0.97	0.98	0.94	0.94	1.06	1.30	1.30	0.33	26.68
ICICI Bank	4.86	3.03	1.51	2.09	3.32	4.34	5.11	4.60	3.72	3.29	3.08	3.86	5.93	8.80	10.11	4.51	2.24	51.41
IndusInd Bank	3.48	3.54	2.86	3.08	3.05	1.60	1.24	1.01	0.99	1.03	1.12	0.81	0.87	0.93	1.17	1.78	1.03	59.59
Jammu & Kashmir Bank	3.07	2.75	2.54	2.93	2.57	2.66	1.99	1.97	1.56	1.64	1.69	6.09	8.55	11.50	10.30	4.12	3.22	80.88
Karnataka Bank	12.48	7.91	5.30	4.04	3.48	3.74	3.79	4.03	3.29	2.52	2.93	2.96	3.45	4.22	4.92	4.60	2.45	55.05
Karur Vysya Bank	5.92	5.22	4.00	2.87	2.06	1.98	1.75	1.28	1.34	0.97	0.82	1.85	1.30	3.59	6.58	2.77	1.81	67.72
Kotak Mahindra Bank	0.85	0.69	0.59	2.53	2.89	4.08	3.61	2.05	1.57	1.56	1.99	1.86	2.38	2.62	2.25	2.10	0.96	47.33
Lakshmi Vilas Bank	10.52	8.02	4.20	3.58	3.56	2.75	5.08	1.94	3.01	3.91	4.18	2.76	1.97	2.67	9.95	4.54	2.65	60.47
RBL Bank	11.23	10.78	7.94	7.15	6.29	2.14	2.35	1.13	0.80	0.41	0.79	0.77	0.98	1.21	1.40	3.69	3.74	104.83
South Indian Bank	7.62	6.77	5.09	4.01	1.80	2.20	1.33	1.12	0.98	1.36	1.19	1.71	3.77	2.44	3.58	3.00	2.04	70.39
Tamilnad Mercantile Bank	14.82	12.11	7.35	4.68	2.28	1.83	1.38	1.31	1.28	1.32	2.48	1.65	1.84	2.91	3.55	4.05	4.04	103.16
<b>Foreign Banks</b>																		
Bank of America	0.85	0.57	0.12	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.16	0.00	0.80	0.00	0.17	0.29	174.22
Barclays Bank	0.00	0.00	0.00	0.00	0.69	9.45	17.70	9.84	6.50	6.53	5.75	2.34	1.12	0.76	0.67	4.09	5.00	126.44
BNP Paribas	6.76	3.63	2.21	1.66	0.90	2.02	1.81	0.21	0.44	0.21	0.13	0.09	0.06	0.04	0.04	1.35	1.78	137.22
Citi Bank	2.55	2.02	1.60	1.60	2.03	4.35	3.33	2.04	1.78	2.59	2.61	1.28	1.39	1.53	1.54	2.15	0.80	38.66
DBS Bank	0.00	0.00	0.00	0.00	0.22	1.14	1.88	1.10	1.66	4.15	13.50	7.66	9.04	3.76	5.09	3.28	3.89	122.86
Duetsche Bank	0.98	0.33	0.32	0.22	0.61	2.69	1.99	1.24	1.08	0.69	0.58	0.33	0.46	2.83	2.61	1.13	0.90	82.88
HSBC	4.28	3.21	1.87	1.69	2.28	4.48	6.70	3.60	2.02	1.79	1.64	1.69	1.52	1.93	1.79	2.70	1.44	55.02
Standard Chartered Bank	2.93	2.75	2.83	2.64	2.16	2.44	2.60	2.29	5.58	6.26	8.45	9.73	15.40	11.54	12.97	6.04	4.34	74.33

Source: Compiled and Calculated using Capital line database and RBI report

### **AQ1 – Gross NPA to Gross Advances**

The ratio of Gross NPA to Gross Advances evaluates the overall quality of bank assets. Lower the ratio, higher the quality of advances being disbursed by the banks. Table 11 shows the results of Gross NPA to Gross Advances of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, Central Bank of India reported the highest mean value at 8.06 percent followed by Indian Overseas Bank at 7.93 percent, United Bank of India at 7.86 percent with a standard deviation at 5.99, 7.78 and 6.15 percent respectively. The banks reported higher NPA due to worst recovery of loan amount, which require higher provisioning for NPAs. It was an indicator of poor asset quality. Indian Bank and Vijaya Bank reported the lowest mean value of gross NPA to gross advances at 3.37 percent and 3.76 percent respectively. It showed their efficiency in collecting advances.

Among private sector banks, the mean value of DCB Bank was found to be the highest at 5.74 percent followed by Dhanalaxmi Bank at 5.19 percent with a standard deviation at 4.63 and 2.98 percent respectively. A higher ratio indicates lower the quality of assets being associated with banks. The mean value of HDFC Bank was observed to be the lowest at 1.30 percent with a minimum standard deviation at 0.33 percent. It showed that the bank has systematic credit evaluation system and well managed risk return profile.

In foreign banks, Standard Chartered Bank recorded the highest mean value at 6.04 percent with a standard deviation at 4.34 percent. Bank of America reported the lowest mean value at 0.17 percent followed by Duetshe Bank at 1.35 percent, stating that the banks are more concerned with collection of debts.

The ratio of Gross NPA to Gross Advances of public sector banks massively increased from 2013-2014. The continuous fall in asset quality and higher default in loan portfolio largely caused by non-repayment of loan especially in corporate segment. It highly affected the earnings and cash flow of the banks. Except Indian Bank, all other public sector banks ratio showed an increasing trend in gross NPA to gross advances throughout the study period. The private sector banks and foreign banks reported a fluctuating trend during the study period 2003-2004 to 2017-2018.

Table 12 AQ2 Net NPA to Net Advances of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	2.37	1.28	0.84	1.07	0.80	0.72	0.66	0.79	0.98	3.19	4.15	3.99	6.76	8.92	8.04	<b>2.97</b>	<b>2.75</b>	<b>95.69</b>
Andhra Bank	0.93	0.28	0.24	0.17	0.15	0.18	0.17	0.38	0.91	2.45	3.11	2.93	4.61	7.57	8.48	<b>2.17</b>	<b>2.66</b>	<b>126.85</b>
Bank of Baroda	2.99	1.89	0.87	0.60	0.47	0.31	0.34	0.35	0.54	1.28	1.52	1.89	5.06	4.72	5.49	<b>1.89</b>	<b>1.76</b>	<b>96.58</b>
Bank of India	4.50	2.80	1.49	0.95	0.52	0.44	1.31	0.91	1.47	2.06	2.00	3.36	7.79	6.90	8.28	<b>2.99</b>	<b>2.57</b>	<b>89.11</b>
Bank of Maharashtra	2.46	2.15	2.03	1.21	0.87	0.79	1.64	1.32	0.84	0.52	2.03	4.19	6.35	11.76	11.24	<b>3.29</b>	<b>3.53</b>	<b>110.97</b>
Canara Bank	2.89	1.88	1.12	0.94	0.84	1.09	1.06	1.10	1.46	2.18	1.98	2.65	6.42	6.33	7.48	<b>2.63</b>	<b>2.16</b>	<b>84.92</b>
Central Bank of India	5.57	2.98	2.59	1.70	1.45	1.24	0.69	0.65	3.09	2.90	3.75	3.61	7.36	10.20	11.10	<b>3.93</b>	<b>3.16</b>	<b>83.22</b>
Corporation Bank	1.80	1.12	0.64	0.47	0.32	0.29	0.31	0.46	0.87	1.19	2.32	3.08	6.53	8.33	11.74	<b>2.63</b>	<b>3.35</b>	<b>131.91</b>
Dena Bank	9.40	5.23	3.04	1.99	0.94	1.09	1.21	1.22	1.01	1.39	2.35	3.82	6.35	10.66	11.95	<b>4.11</b>	<b>3.65</b>	<b>92.05</b>
Indian Bank	2.71	1.35	0.79	0.35	0.24	0.18	0.23	0.53	1.33	2.26	2.26	2.50	4.20	4.39	3.81	<b>1.81</b>	<b>1.44</b>	<b>82.18</b>
Indian Overseas Bank	2.85	1.27	0.65	0.55	0.60	1.33	2.52	1.19	1.35	2.50	3.20	5.68	11.89	13.99	15.33	<b>4.33</b>	<b>4.91</b>	<b>117.56</b>
Oriental Bank of Commerce	0.00	1.29	0.49	0.49	0.99	0.65	0.87	0.98	2.21	2.27	2.82	3.34	6.70	8.96	10.48	<b>2.84</b>	<b>3.15</b>	<b>114.94</b>
Punjab and Sind Bank	9.62	8.11	2.43	0.66	0.37	0.32	0.36	0.56	1.19	2.16	3.35	3.55	4.62	7.51	6.93	<b>3.45</b>	<b>3.08</b>	<b>92.51</b>
Punjab National Bank	0.98	0.20	0.29	0.76	0.64	0.17	0.53	0.85	1.52	2.35	2.85	4.06	8.61	7.81	11.24	<b>2.86</b>	<b>3.41</b>	<b>123.57</b>
Syndicate Bank	2.58	1.59	0.86	0.76	0.97	0.77	1.07	0.97	0.96	0.76	1.56	1.90	4.48	5.21	6.28	<b>2.05</b>	<b>1.74</b>	<b>87.93</b>
UCO Bank	3.65	2.93	2.10	2.14	1.98	1.18	1.17	1.84	1.96	3.17	2.38	4.30	9.09	8.94	13.10	<b>4.00</b>	<b>3.40</b>	<b>88.17</b>
Union Bank of India	2.87	2.64	1.56	0.96	0.17	0.34	0.81	1.19	1.70	1.61	2.33	2.71	5.25	6.57	8.42	<b>2.61</b>	<b>2.29</b>	<b>90.82</b>
United Bank of India	3.75	2.43	1.95	1.50	1.10	1.48	1.84	1.42	1.72	2.87	7.18	6.22	9.04	10.02	16.49	<b>4.60</b>	<b>4.26</b>	<b>95.95</b>
Vijaya Bank	0.91	0.59	0.85	0.59	0.57	0.82	1.40	1.52	1.72	1.30	1.55	1.92	4.80	4.36	4.32	<b>1.81</b>	<b>1.40</b>	<b>80.09</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 12 AQ2 Net NPA to Net Advances of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	1.29	1.39	0.98	0.72	0.42	0.40	0.40	0.29	0.27	0.36	0.44	0.46	0.74	2.27	3.64	<b>0.94</b>	<b>0.90</b>	<b>98.77</b>
Catholic Syrian Bank	4.65	3.80	2.78	1.98	1.61	2.39	1.58	1.74	1.10	1.12	2.22	3.85	4.40	5.51	4.46	<b>2.88</b>	<b>1.39</b>	<b>49.99</b>
City Union Bank	6.37	3.37	1.95	1.09	0.98	1.08	0.58	0.52	0.44	0.63	1.23	1.30	1.53	1.71	1.70	<b>1.63</b>	<b>1.45</b>	<b>92.14</b>
Dhanalaxmi Bank	6.68	6.34	4.50	1.64	0.66	3.88	3.11	0.96	0.57	0.75	0.91	1.01	0.75	0.79	3.19	<b>2.38</b>	<b>2.05</b>	<b>88.88</b>
DCB Bank	4.87	3.92	2.82	1.75	0.88	0.88	0.84	0.30	0.66	3.36	3.80	3.29	2.78	2.58	0.72	<b>2.23</b>	<b>1.41</b>	<b>65.36</b>
Federal Bank	2.89	2.21	0.95	0.44	0.23	0.30	0.48	0.60	0.53	0.98	0.74	0.73	1.64	1.28	1.69	<b>1.05</b>	<b>0.74</b>	<b>72.99</b>
HDFC Bank	0.16	0.24	0.44	0.43	0.47	0.63	0.31	0.19	0.18	0.20	0.27	0.25	0.28	0.33	0.40	<b>0.32</b>	<b>0.13</b>	<b>41.39</b>
ICICI Bank	2.21	1.65	0.72	1.02	1.55	2.09	2.12	1.11	0.73	0.77	0.97	1.61	2.98	5.43	5.43	<b>2.03</b>	<b>1.47</b>	<b>75.32</b>
IndusInd Bank	2.72	2.71	2.09	2.47	2.27	1.14	0.50	0.28	0.27	0.31	0.33	0.31	0.36	0.39	0.51	<b>1.11</b>	<b>0.98</b>	<b>91.33</b>
Jammu & Kashmir Bank	1.48	1.41	0.92	1.13	1.07	1.38	0.28	0.20	0.15	0.14	0.22	2.77	4.31	4.87	4.89	<b>1.68</b>	<b>1.65</b>	<b>101.83</b>
Karnataka Bank	4.98	2.29	1.18	1.22	0.98	0.98	1.31	1.62	2.11	1.51	1.91	1.98	2.35	2.64	2.96	<b>2.00</b>	<b>0.99</b>	<b>51.13</b>
Karur Vysya Bank	2.32	1.66	0.81	0.23	0.18	0.25	0.23	0.07	0.33	0.37	0.41	0.78	0.55	2.53	4.16	<b>0.99</b>	<b>1.13</b>	<b>118.27</b>
Kotak Mahindra Bank	0.17	0.37	0.24	1.98	1.78	2.39	1.73	0.72	0.61	0.64	1.08	0.92	1.06	1.26	0.98	<b>1.06</b>	<b>0.64</b>	<b>62.07</b>
Lakshmi Vilas Bank	5.40	4.98	1.89	1.58	1.55	1.24	4.11	0.90	1.74	2.43	3.44	1.85	1.18	1.76	5.66	<b>2.65</b>	<b>1.58</b>	<b>61.62</b>
RBL Bank	5.58	5.54	2.61	1.92	0.99	0.68	0.97	0.36	0.20	0.11	0.31	0.27	0.59	0.64	0.78	<b>1.44</b>	<b>1.74</b>	<b>125.44</b>
South Indian Bank	4.55	3.81	1.86	0.98	0.33	1.13	0.39	0.29	0.28	0.78	0.78	0.96	2.89	1.45	2.60	<b>1.54</b>	<b>1.30</b>	<b>87.16</b>
Tamilnad Mercantile Bank	5.00	2.95	2.17	0.98	0.38	0.34	0.24	0.27	0.45	0.66	1.22	0.67	0.89	1.74	2.16	<b>1.34</b>	<b>1.26</b>	<b>97.28</b>
<b>Foreign Banks</b>																		
Bank of America	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	<b>0.01</b>	<b>0.03</b>	<b>387.30</b>
Barclays Bank	0.00	0.00	0.00	0.00	0.42	4.59	5.15	1.46	1.45	1.74	1.10	0.02	0.00	0.43	0.00	<b>1.09</b>	<b>1.60</b>	<b>152.11</b>
BNP Paribas	35.46	9.92	0.00	0.00	0.00	31.93	0.00	0.00	4.11	0.00	0.00	0.00	0.00	0.00	0.00	<b>5.43</b>	<b>11.40</b>	<b>217.44</b>
Citi Bank	1.40	1.00	0.95	1.02	1.23	2.63	2.14	1.21	0.90	1.47	1.24	0.40	0.49	0.46	0.55	<b>1.14</b>	<b>0.60</b>	<b>54.15</b>
DBS Bank	0.00	0.00	0.00	0.00	0.05	0.55	1.00	0.31	0.60	2.37	10.19	4.15	4.34	2.12	1.09	<b>1.78</b>	<b>2.65</b>	<b>153.58</b>
Duetsche Bank	0.00	0.00	0.00	0.01	0.17	0.88	0.79	0.23	0.09	0.13	0.09	0.13	0.26	0.93	0.78	<b>0.30</b>	<b>0.34</b>	<b>117.63</b>
HSBC	0.70	0.50	0.58	0.43	0.58	1.42	2.31	0.91	0.62	0.33	0.24	0.51	0.38	0.44	0.28	<b>0.68</b>	<b>0.52</b>	<b>78.66</b>
Standard Chartered Bank	0.52	1.12	1.57	1.43	1.04	1.37	1.40	0.27	0.70	1.63	0.45	0.34	1.07	0.18	0.58	<b>0.91</b>	<b>0.49</b>	<b>55.23</b>

Source: Compiled and Calculated using Capital line database and RBI reports

## **AQ2 – Net NPA to Net Advances**

The ratio of Net Non-Performing Assets to Net Advances measures the quality of advances granted by banks. Lower the ratio, better the performance of banks. Table 12 demonstrates the ratio of Net NPA to Net Advances of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

Among public sector banks, the ratio of United Bank of India was found to be the highest at 4.60 percent followed by Indian Overseas Bank at 4.33 percent and Dena Bank at 4.11 percent with a higher standard deviation at 4.26 percent, 4.91 percent and 3.65 percent respectively. The banks are facing difficulties primarily due to economic slowdown and raising portfolio of NPAs. It highly reflected in the declining revenue, rising credit cost and shrinking the creditors and depositors confidence in the solvency of the institution. Vijaya Bank and Indian Bank reported the lowest with a mean value at 1.81 percent and lower standard deviation at 1.40 percent and 1.44 percent respectively, implying the ratio was not much deviated from mean. It exposes the competence of the banks in collecting debts and controlling their non-performing assets.

In private sector banks, Catholic Syrian Bank reported the highest mean value at 2.88 percent with a standard deviation at 1.39 percent followed by Lakshmi Vilas Bank at 2.65 percent with a standard deviation 1.58 percent, indicating the deteriorating asset quality of banks and rise in credit risk. The ratio of HDFC Bank was found to be the lowest at 0.32 percent with a standard deviation at 1.13 percent and Axis Bank at 0.94 percent with a lower standard deviation at 0.90 percent signifying the ability of banks in providing quality advances.

In foreign banks, BNP Paribas Bank recorded the highest mean value at 5.43 percent with a higher standard deviation at 11.40 percent and Bank of America was observed to be the lowest at 0.01 percent with a lower standard deviation at 0.03 percent.

All the select banks recorded an increasing trend in Net NPA to Net Advances during the study period. Public sector bank showed an upward movement from 2013-2014 and continued to report a higher ratio. In private sector banks, the ratio increased significantly in 2017-2018 compared to 2003-2004. In recent times, managing non-performing assets and keeping them at the least possible level has become a focal point to the banking industry.

Table 13 AQ3 Net NPA to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	1.05	0.60	0.45	0.65	0.48	0.43	0.39	0.49	0.60	2.02	2.59	2.63	4.28	5.65	4.83	<b>1.81</b>	<b>1.74</b>	<b>99.65</b>
Andhra Bank	0.44	0.15	0.13	0.10	0.09	0.12	0.11	0.25	0.61	1.65	2.00	1.99	3.01	4.64	5.22	<b>1.37</b>	<b>1.66</b>	<b>125.50</b>
Bank of Baroda	1.22	0.65	0.46	0.35	0.27	0.20	0.22	0.22	0.35	0.77	0.92	1.13	2.89	2.60	3.26	<b>1.03</b>	<b>1.00</b>	<b>100.21</b>
Bank of India	2.43	1.64	0.86	0.57	0.33	0.28	0.80	0.55	0.95	1.31	1.29	2.18	4.58	4.03	4.61	<b>1.76</b>	<b>1.45</b>	<b>85.48</b>
Bank of Maharashtra	0.89	0.85	1.07	0.71	0.53	0.46	0.93	0.81	0.51	0.34	1.32	2.82	4.24	7.03	6.15	<b>1.91</b>	<b>2.09</b>	<b>113.35</b>
Canara Bank	1.39	1.02	0.66	0.56	0.50	0.69	0.68	0.69	0.90	1.28	1.21	1.59	3.74	3.68	4.60	<b>1.55</b>	<b>1.28</b>	<b>85.91</b>
Central Bank of India	2.00	1.18	1.29	0.94	0.85	0.72	0.40	0.40	2.00	1.86	2.29	2.18	4.33	4.26	5.32	<b>2.00</b>	<b>1.46</b>	<b>75.58</b>
Corporation Bank	0.86	0.61	0.38	0.27	0.19	0.16	0.18	0.28	0.53	0.73	1.43	1.97	3.89	4.71	6.33	<b>1.50</b>	<b>1.86</b>	<b>128.22</b>
Dena Bank	4.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.06	0.06	<b>0.29</b>	<b>1.00</b>	<b>358.99</b>
Indian Bank	1.08	0.62	0.37	0.18	0.14	0.11	0.14	0.33	0.85	1.46	1.48	1.63	2.66	2.57	2.36	<b>1.07</b>	<b>0.89</b>	<b>86.18</b>
Indian Overseas Bank	1.22	0.63	0.38	0.31	0.36	0.83	1.52	0.74	0.87	1.65	2.06	3.44	7.00	7.99	8.23	<b>2.48</b>	<b>2.75</b>	<b>114.78</b>
Oriental Bank of Commerce	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.04	0.06	0.06	<b>0.02</b>	<b>0.02</b>	<b>114.68</b>
Punjab and Sind Bank	3.85	3.24	1.17	0.35	0.22	0.19	0.21	0.35	0.75	1.38	2.03	2.32	2.88	4.52	4.05	<b>1.83</b>	<b>1.50</b>	<b>84.69</b>
Punjab National Bank	0.44	0.09	0.14	0.45	0.38	0.11	0.33	0.54	0.97	1.51	1.80	2.55	5.30	4.54	6.35	<b>1.70</b>	<b>1.99</b>	<b>121.37</b>
Syndicate Bank	0.00	0.82	0.51	0.44	0.58	0.49	0.69	0.66	0.65	0.52	1.08	1.27	2.93	3.48	4.09	<b>1.21</b>	<b>1.19</b>	<b>101.86</b>
UCO Bank	1.72	1.49	1.27	1.34	1.22	0.73	0.70	1.11	1.25	2.05	1.48	2.57	4.67	4.62	6.51	<b>2.18</b>	<b>1.65</b>	<b>78.48</b>
Union Bank of India	1.45	1.46	0.94	0.58	0.10	0.20	0.49	0.76	1.15	1.07	1.51	1.81	3.45	4.15	4.96	<b>1.61</b>	<b>1.40</b>	<b>90.22</b>
United Bank of India	1.18	0.96	0.91	0.79	0.56	0.85	1.01	0.84	1.05	1.72	3.73	3.32	4.72	4.67	7.12	<b>2.23</b>	<b>1.93</b>	<b>89.57</b>
Vijaya Bank	0.42	0.29	0.45	0.34	0.32	0.47	0.83	0.90	1.04	0.82	0.92	1.16	2.94	2.66	2.82	<b>1.09</b>	<b>0.90</b>	<b>85.24</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 13 AQ3 Net NPA to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	0.46	0.57	0.44	0.36	0.23	0.22	0.23	0.17	0.17	0.21	0.27	0.29	0.47	1.43	2.40	<b>0.53</b>	<b>0.58</b>	<b>114.70</b>
Catholic Syrian Bank	2.05	1.95	1.56	1.13	0.89	1.25	0.93	1.11	0.70	0.74	1.27	2.31	2.20	2.76	2.62	<b>1.56</b>	<b>0.67</b>	<b>44.38</b>
City Union Bank	3.09	1.94	1.21	0.68	0.60	0.66	0.34	0.33	0.29	0.42	0.79	0.84	1.02	1.16	1.19	<b>0.97</b>	<b>0.71</b>	<b>75.38</b>
Dhanalaxmi Bank	3.27	2.27	1.57	0.93	0.46	0.50	0.52	0.19	0.40	1.89	2.05	1.76	1.55	1.35	1.58	<b>1.35</b>	<b>0.83</b>	<b>63.28</b>
DCB Bank	1.56	3.58	2.24	0.83	0.36	2.13	1.75	0.56	0.35	0.44	0.57	0.65	0.51	0.52	0.49	<b>1.10</b>	<b>0.92</b>	<b>86.26</b>
Federal Bank	1.47	1.16	0.54	0.26	0.13	0.17	0.29	0.37	0.33	0.61	0.43	0.45	1.00	0.82	1.12	<b>0.61</b>	<b>0.40</b>	<b>67.06</b>
HDFC Bank	0.07	0.12	0.21	0.22	0.22	0.34	0.18	0.11	0.10	0.12	0.17	0.15	0.18	0.21	0.24	<b>0.18</b>	<b>0.07</b>	<b>39.85</b>
ICICI Bank	0.00	0.89	0.42	0.58	0.87	1.20	1.06	0.59	0.38	0.42	0.55	0.96	1.79	3.25	3.15	<b>1.07</b>	<b>0.93</b>	<b>89.47</b>
IndusInd Bank	1.41	1.56	1.11	1.31	1.25	0.65	0.29	0.16	0.16	0.19	0.21	0.19	0.22	0.25	0.34	<b>0.62</b>	<b>0.52</b>	<b>87.04</b>
Jammu & Kashmir Bank	0.65	0.67	0.51	0.68	0.62	0.76	0.15	0.11	0.08	0.08	0.13	1.63	2.70	2.96	3.11	<b>0.99</b>	<b>1.04</b>	<b>109.24</b>
Karnataka Bank	2.19	1.14	0.61	0.71	0.55	0.51	0.70	0.88	1.20	0.91	1.14	1.20	1.40	1.52	1.99	<b>1.11</b>	<b>0.49</b>	<b>45.35</b>
Karur Vysya Bank	1.29	0.96	0.50	0.14	0.12	0.15	0.14	0.05	0.21	0.23	0.27	0.53	0.37	1.67	2.78	<b>0.63</b>	<b>0.74</b>	<b>121.34</b>
Kotak Mahindra Bank	0.06	0.23	0.15	1.09	0.98	1.38	0.96	0.42	0.36	0.37	0.65	0.57	0.66	0.80	0.63	<b>0.62</b>	<b>0.36</b>	<b>60.03</b>
Lakshmi Vilas Bank	2.86	2.84	1.13	0.98	0.91	0.78	2.46	0.55	1.10	1.61	2.15	1.22	0.81	1.18	3.60	<b>1.61</b>	<b>0.90</b>	<b>58.01</b>
RBL Bank	2.37	2.70	1.31	0.89	0.39	0.32	0.54	0.21	0.12	0.05	0.17	0.14	0.32	0.39	0.51	<b>0.69</b>	<b>0.79</b>	<b>117.35</b>
South Indian Bank	2.06	2.15	1.09	0.57	0.20	0.66	0.24	0.18	0.19	0.50	0.51	0.60	1.87	0.91	1.71	<b>0.90</b>	<b>0.69</b>	<b>79.16</b>
Tamilnad Mercantile Bank	2.06	1.37	1.11	0.56	0.23	0.20	0.15	0.18	0.31	0.45	0.79	0.46	0.57	1.03	0.94	<b>0.69</b>	<b>0.52</b>	<b>77.22</b>
<b>Foreign Banks</b>																		
Bank of America	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	<b>0.00</b>	<b>0.01</b>	<b>387.30</b>
Barclays Bank	0.00	0.00	0.00	0.00	0.25	2.34	1.87	0.52	0.57	0.47	0.27	0.01	0.00	0.17	0.00	<b>0.43</b>	<b>0.69</b>	<b>166.28</b>
BNP Paribas	1.18	0.34	0.00	0.00	0.00	0.32	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.13</b>	<b>0.30</b>	<b>250.99</b>
Citi Bank	0.72	0.53	0.51	0.51	0.56	1.00	0.82	0.44	0.33	0.60	0.48	0.18	0.20	0.17	0.19	<b>0.48</b>	<b>0.24</b>	<b>51.03</b>
DBS Bank	0.00	0.00	0.00	0.00	0.01	0.12	0.21	0.10	0.21	0.81	3.40	1.83	1.75	1.04	0.42	<b>0.66</b>	<b>0.95</b>	<b>148.54</b>
Duetsche Bank	0.00	0.00	0.00	0.00	0.06	0.31	0.36	0.12	0.04	0.07	0.04	0.08	0.16	0.43	0.39	<b>0.14</b>	<b>0.15</b>	<b>112.96</b>
HSBC	0.27	0.23	0.26	0.18	0.23	0.41	0.60	0.27	0.20	0.11	0.07	0.17	0.15	0.16	0.10	<b>0.23</b>	<b>0.13</b>	<b>58.50</b>
Standard Chartered Bank	0.24	0.60	0.82	0.73	0.47	0.53	0.65	0.12	0.32	0.84	0.23	0.17	0.55	0.08	0.02	<b>0.43</b>	<b>0.26</b>	<b>64.18</b>

Source: Compiled and Calculated using Capital line database and RBI reports

**AQ3 – Net NPA to Total Assets**

The ratio of Net NPA to Total Asset measures how effectively banks are managing their credit risk. The ratio helps the banks to identify the ratio of total assets, which are blocked in NPA. Higher the ratio indicates higher the volume of credit defaulters, which ultimately impacts the earning capacity and net worth of the banks. Hence, it is better off with lower one. Table 13 presents the Net NPA to Total Assets ratio of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the average ratio of net NPA to total assets was found to be the highest in Indian Overseas Bank at 2.48 percent with a higher standard deviation at 2.75 percent followed by United Bank of India at 2.23 percent with a standard deviation at 1.93 percent respectively. It indicates the bank disbursed poor quality of advances. It lowers their profitability and earning capacity, which results in an increased loan provisioning charges. Oriental Bank of Commerce was found to be the lowest at 0.02 percent followed by Dena Bank at 0.29 percent with a lower standard deviation at 0.02 percent and 1 percent respectively.

Among private sector banks, Lakshmi Vilas Bank reported the highest mean value at 1.61 percent followed by Catholic Syrian Bank at 1.56 percent with a standard deviation at 0.90 percent and 0.67 percent respectively. The decline in asset quality was found due to inadequate control over disbursement and collection of advances. HDFC Bank was found to be the lowest at 0.18 percent and Axis Bank at 0.53 percent with a standard deviation at 0.07 percent and 0.58 percent, indicating the banks used their assets more productively through disbursement of quality advances.

In foreign banks, DBS Bank reported the highest mean value at 0.66 percent with a highest standard deviation at 0.95 percent. The ratio of Bank of America was found to be the lowest at 0.01 percent with a lower standard deviation at 0.01 percent.

The ratio of Net NPA to Total Assets of all the select banks increased in 2017-2018 as compared to 2003-2004. The majority of the public sector banks and private sector banks reported increase in the ratio of non-performing assets. The ratio of foreign banks was found to be fluctuating throughout the study period.

Table 14 AQ4 Earnings Base Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	89.01	88.90	85.23	88.71	88.16	90.57	90.41	90.47	90.42	91.86	91.59	90.01	87.12	86.60	86.75	89.05	1.90	2.20
Andhra Bank	85.86	86.02	82.47	88.71	86.78	89.09	85.14	87.65	90.59	92.95	91.40	92.76	92.07	88.10	88.30	88.53	2.93	3.42
Bank of Baroda	86.50	85.01	83.80	82.83	83.84	86.33	84.87	83.73	82.85	82.17	77.80	76.21	75.10	73.81	82.03	81.79	3.94	4.98
Bank of India	86.01	88.64	86.35	85.03	86.82	86.54	85.67	85.13	87.27	84.84	84.59	84.34	78.14	78.65	78.26	84.42	3.22	3.95
Bank of Maharashtra	80.14	83.72	89.10	87.72	86.31	89.21	86.72	90.72	89.97	91.33	92.40	89.79	89.26	83.98	82.61	87.53	3.42	4.05
Canara Bank	84.72	89.19	87.56	86.53	86.91	89.23	90.18	87.71	89.34	88.04	86.92	86.03	83.85	83.78	84.80	86.99	1.98	2.35
Central Bank of India	85.13	84.37	88.08	85.21	83.92	86.84	85.17	87.67	89.87	91.13	90.77	89.04	87.86	69.31	79.29	85.58	5.26	6.36
Corporation Bank	84.29	84.92	85.45	84.07	84.83	84.50	87.50	90.78	90.41	91.37	91.42	87.59	86.50	82.30	85.53	86.76	2.86	3.41
Dena Bank	87.23	87.40	85.86	87.53	86.17	85.32	88.83	89.78	91.23	88.26	91.43	85.97	88.01	86.60	85.27	87.66	1.90	2.24
Indian Bank	87.26	90.68	87.12	88.94	87.58	88.27	89.18	90.40	90.72	90.56	90.28	88.98	89.41	89.47	90.21	89.27	1.20	1.39
Indian Overseas Bank	85.51	87.02	90.48	86.36	87.27	87.63	88.98	89.74	89.37	90.65	89.53	87.89	87.47	85.82	81.11	87.66	2.35	2.77
Oriental Bank of Commerce	88.95	80.71	85.19	86.30	86.36	86.15	86.53	89.92	92.18	93.24	91.03	89.93	89.52	85.59	88.16	87.98	3.09	3.63
Punjab and Sind Bank	85.30	85.28	84.41	84.00	86.71	90.21	89.11	89.40	90.82	91.91	90.39	89.81	89.26	89.23	87.46	88.22	2.43	2.85
Punjab National Bank	87.28	87.98	79.59	87.24	87.16	88.32	89.10	89.14	90.89	91.59	89.52	87.85	85.38	84.10	82.68	87.19	3.05	3.62
Syndicate Bank	81.66	90.35	87.96	86.14	85.99	86.04	88.76	90.62	90.12	89.82	91.10	89.75	87.67	88.65	89.83	88.30	2.42	2.83
UCO Bank	87.31	85.58	92.20	88.85	88.35	87.67	91.45	86.64	89.09	90.74	90.58	85.91	85.69	83.69	82.51	87.75	2.73	3.22
Union Bank of India	88.92	86.82	88.92	87.92	86.97	86.48	88.85	88.59	91.50	92.41	91.03	88.87	87.76	87.86	84.17	88.47	2.01	2.35
United Bank of India	87.86	89.50	89.18	86.88	85.38	85.94	88.82	88.58	90.29	89.32	88.44	89.37	87.08	84.44	77.95	87.27	2.97	3.53
Vijaya Bank	90.91	89.99	88.29	85.56	85.98	84.73	89.19	90.06	90.33	91.05	90.26	89.30	89.87	89.62	87.53	88.84	1.93	2.25

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 14 AQ4 Earnings Base Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	71.04	81.09	88.06	86.99	85.17	86.55	88.73	88.32	92.05	91.23	89.65	86.29	87.09	83.43	85.84	86.10	4.85	5.82
Catholic Syrian Bank	86.30	81.25	85.90	86.10	86.07	83.35	88.75	91.30	90.26	90.36	91.25	87.95	88.35	85.49	84.69	87.16	2.84	3.38
City Union Bank	88.55	89.12	87.40	86.45	85.11	86.94	86.89	88.21	91.13	89.28	88.22	85.52	87.67	87.51	89.47	87.83	1.52	1.79
Dhanalaxmi Bank	83.10	80.05	83.24	78.34	78.76	84.41	86.98	89.03	89.36	88.83	84.53	84.76	86.19	86.26	85.24	84.61	3.36	4.11
DCB Bank	83.89	85.63	84.83	85.35	81.65	82.18	89.05	88.58	89.81	88.08	91.02	89.33	90.14	89.88	87.79	87.15	2.91	3.45
Federal Bank	87.41	86.93	87.03	87.13	88.72	88.54	91.29	89.93	90.98	91.51	90.11	86.43	87.78	88.13	88.60	88.70	1.63	1.90
HDFC Bank	87.56	87.21	86.23	84.88	84.67	86.01	82.87	83.23	86.66	87.75	86.23	87.56	89.14	89.01	84.64	86.24	1.83	2.20
ICICI Bank	83.54	84.24	86.37	83.15	84.18	84.60	83.02	86.32	84.43	85.92	86.40	84.10	82.29	80.72	81.05	84.02	1.74	2.14
IndusInd Bank	78.11	83.66	83.53	80.95	83.30	86.38	87.36	86.92	86.07	87.13	87.93	81.85	85.61	83.74	87.89	84.70	2.77	3.38
Jammu & Kashmir Bank	83.64	84.14	88.76	85.43	84.38	84.01	86.99	90.86	90.76	90.52	92.32	88.69	87.89	86.70	84.51	87.31	2.82	3.34
Karnataka Bank	90.26	86.45	89.17	89.96	88.70	90.77	90.25	90.93	92.26	92.88	92.38	87.86	88.46	89.07	88.95	89.89	1.72	1.98
Karur Vysya Bank	87.18	86.73	87.19	89.47	88.79	88.66	91.37	90.48	91.52	92.66	91.49	91.12	90.63	90.06	90.41	89.85	1.74	2.00
Kotak Mahindra Bank	85.47	89.63	90.43	89.30	87.21	89.63	88.92	91.35	92.35	92.41	89.64	89.39	88.33	84.36	88.39	89.12	2.16	2.50
Lakshmi Vilas Bank	88.30	86.24	85.98	84.42	84.89	85.45	88.21	87.31	90.23	90.72	89.95	90.68	91.15	91.68	90.29	88.37	2.41	2.82
RBL Bank	74.13	79.02	78.34	73.73	64.23	70.63	80.39	86.56	88.76	91.75	89.64	89.44	90.97	88.17	90.07	82.39	8.40	10.55
South Indian Bank	88.17	89.67	84.13	83.13	87.92	87.95	89.99	89.62	90.84	89.04	91.96	87.01	87.89	88.51	88.11	88.26	2.21	2.59
Tamilnad Mercantile Bank	87.78	87.45	89.93	89.79	88.95	86.97	86.76	90.13	91.92	91.22	90.60	90.78	89.16	90.52	90.01	89.46	1.53	1.77
<b>Foreign Banks</b>																		
Bank of America	86.89	87.72	83.98	76.02	77.95	71.37	89.12	87.92	89.20	73.23	72.12	82.61	80.04	61.04	79.59	79.92	7.59	10.16
Barclays Bank	32.54	44.96	31.36	48.49	81.16	89.06	87.69	89.17	91.54	70.37	66.55	72.49	80.07	66.71	76.19	68.56	18.97	29.58
BNP Paribas	77.33	87.50	79.02	82.27	85.17	73.98	82.52	86.55	81.60	65.12	63.21	72.37	77.05	64.65	73.62	76.80	7.40	10.30
Citi Bank	74.06	77.50	77.02	73.64	67.74	61.22	67.82	63.62	70.29	74.82	74.26	84.95	85.80	75.77	81.68	74.01	6.64	9.59
DBS Bank	59.31	57.48	45.43	38.02	75.68	83.83	75.24	75.12	75.88	78.67	73.11	81.70	75.79	72.04	76.12	69.56	12.51	19.22
Duetsche Bank	50.89	44.61	48.49	62.93	77.41	70.14	77.55	79.82	73.26	81.44	84.45	78.80	81.61	64.63	74.29	70.02	12.10	18.47
HSBC	78.97	78.10	77.27	67.86	64.85	62.07	71.61	70.94	69.41	76.16	73.36	69.96	76.85	70.65	74.70	72.18	4.63	6.86
Standard Chartered Bank	76.42	80.98	75.53	71.32	62.82	54.42	67.62	68.00	68.11	77.37	73.87	77.10	77.31	72.42	74.19	71.83	6.36	9.47

Source: Compiled and Calculated using Capital line database and RBI report

#### **AQ4 – Earnings Base Ratio**

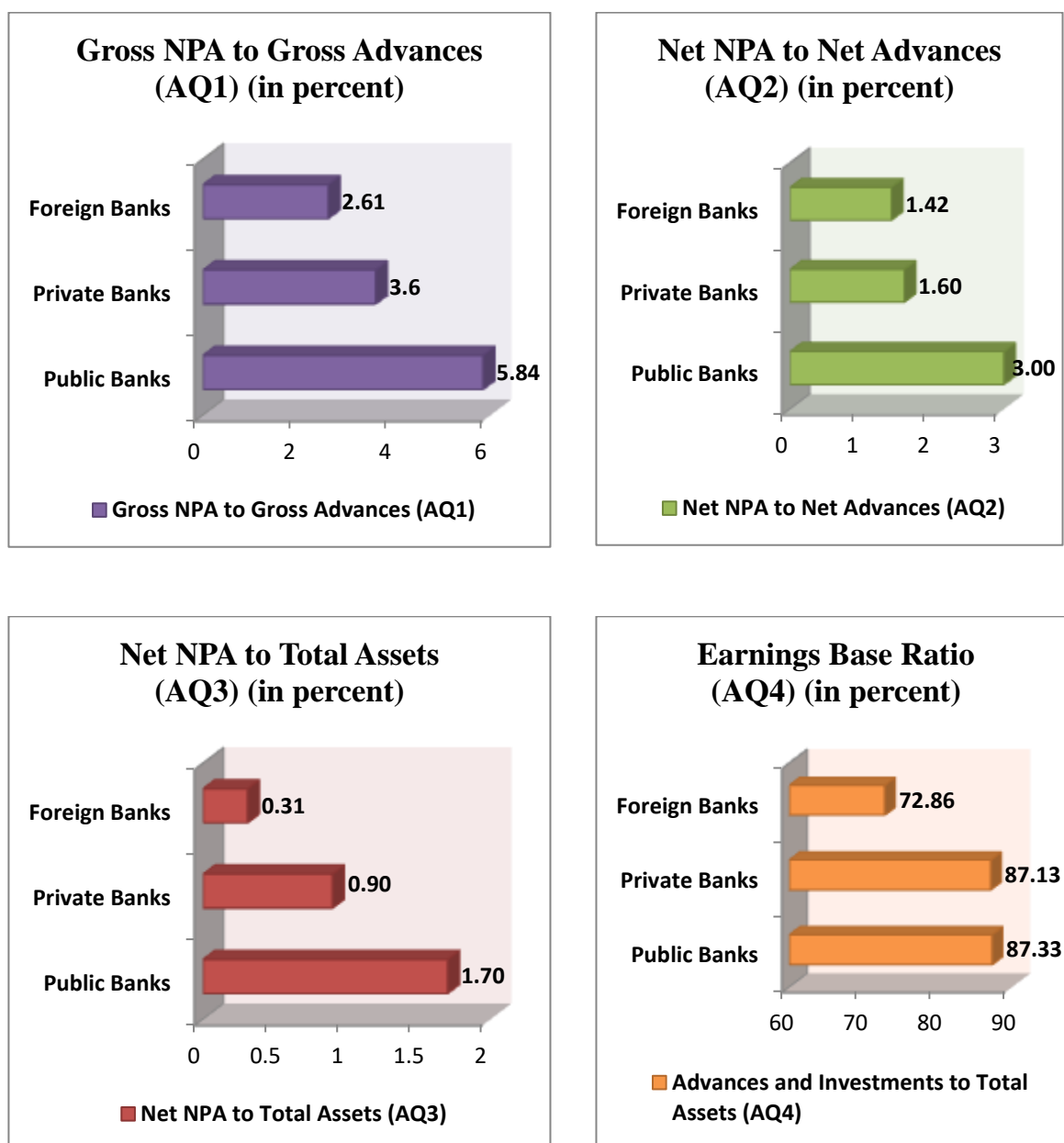
Advances and Investment ratio is a key parameter to indicate how effectively the management is using their assets to generate income. It measures the fraction of assets that produce income to the banks. Greater the earnings base, greater the assets utilized by the banks. Table 14 presents the Advances and Investment to Total Assets ratio of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, Indian Bank was at the top position by reporting the highest mean value of advances and investments to total assets at 89.27 percent with a standard deviation at 1.20 percent followed by Allahabad Bank at 89.05 percent with a standard deviation at 1.90 percent. It implied that the banks have enough earnings base to make profit. The ratio of earnings base was found to be the lowest in Bank of Baroda at 81.79 percent with a standard deviation at 3.94 percent.

Among private sector banks, Karnataka Bank has highest mean value at 89.89 percent followed by Karur Vysya Bank at 89.85 percent with a standard deviation at 1.72 percent and 1.74 percent respectively. As the banks have strong earnings base, they are able to produce stable return from their advances and investments. RBL Bank reported the lowest mean value at 82.39 percent with a higher standard deviation at 8.40 percent followed by ICICI Bank at 84.02 percent with a standard deviation at 1.74 percent.

In foreign banks, the mean value of Bank of America was found to be the highest at 79.92 percent with a standard deviation at 7.59 percent. The average ratio of Barclays Bank was found to be the lowest at 68.56 percent with a higher standard deviation at 18.97 percent. It indicates that the bank may not make use of their assets fruitfully either they have to decrease their total assets. Thus, the bank has to improve its earnings assets to generate more return.

The average ratio of all select public sector banks and private sector banks registered above 80 percent stating that banks have adequate earnings base to yield return from advances and investments. The ratio of public sector banks was increased till 2013-2014 and slightly declined from 2014-2015 onwards. Most of the private sector banks and foreign banks increased their ratio in 2017-2018 as compared to 2003-2004. The ratio of all the select banks reported a volatile trend throughout the study period.



**Figure 3**  
**Group-wise Asset Quality of Scheduled Commercial Banks**

Figure 3 presented group-wise asset quality of scheduled commercial banks. While considering Gross NPA to Gross Advances (AQ1) the ratio of public sector banks was observed to be the highest at 5.84 percent compared to other bank groups. It indicates that the select banks are at higher risk in credit disbursement. The ratio of private sector banks reported at 3.6 percent followed by foreign banks at 2.61 percent.

Net NPA to Net Advances (AQ2) of public sector banks was found to be the highest at 3 percent implying the banks are facing a huge problem of growing NPAs, which may affect their profitability and liquidity. Private sector banks reported the average at 1.60 percent followed by foreign banks group at 1.42 percent, indicating the banks are more concerned in collection of debts.

Net NPA to Total Assets (AQ3) was observed to be the highest in public sector banks at 1.70 percent, indicating higher volume of credit defaulters. The ratio of net NPA to total assets of private sector banks was at 0.90 percent and the lowest risk was held in foreign banks at 0.31 percent.

Earnings Base Ratio (AQ4) of public sector banks took lead position with an average at 87.33 percent followed by private sector banks at 87.13 percent, indicating the banks have sufficient earnings base to produce revenue. The ratio of foreign banks was found to be the lowest at 72.86 percent, implied the banks to improve their earnings assets to generate profit.

To find whether there was any significant mean difference in the asset quality variables of select scheduled commercial banks, t-test was applied and the results are presented in Table 15.

*H<sub>01</sub>: There is no significant mean difference in asset quality of select scheduled commercial banks in India.*

**Table15**

**Results of t-test of Asset Quality of Select Scheduled Commercial Banks**

Variables	Mean	Standard Deviation	t-test value	P-value	Significance
Gross Non-performing Assets to Gross Advances (in percent)	4.38	1.95	14.849	.000	Significant
Net Non-performing Assets to Net Advances (in percent)	2.17	1.22	11.740	.000	Significant
Non-performing Assets to Total Assets (in percent)	1.13	0.65	11.552	.000	Significant
Earnings Base Ratio (in percent)	84.62	6.08	92.254	.000	Significant

**Source: Computed data**

It is observed from the Table 15, among the select banks there is a significant mean difference in respect of the asset quality. The p-values were found to be significant at one percent level. Hence, null hypothesis is rejected. **There is a significant mean difference in the asset quality ratios of select scheduled commercial banks.**

### **MANAGEMENT ABILITY**

Effective management ability is crucial for the proper functioning of banking sector on a sustainable basis. Management quality indicates how the management is efficiently performing to improve the business operations of banks. Management efficiency includes adherence to set norms, ability to plan and respond to changing environments, leadership and administrative capability of the bank (Misra and Aspal, 2013). It reflects the efficiency of the board of management and directors to identify, measure, monitor and control the risk of banks operation in order to ensure the safety and soundness of banking system. Thus, the ability of the management is measured using the following ratios.

MA1 – Total Advances to Total Deposits,

MA2 – Profit per Employee,

MA3 – Business per Employee,

MA4 – Return on Equity, and

MA5 – Current Account and Savings Account Ratio.

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Table 16 MA1 Total Advances to Total Deposits of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	48.74	51.89	60.10	69.34	69.43	69.20	67.52	70.99	69.64	72.45	72.31	76.89	75.94	74.68	71.19	<b>68.02</b>	<b>7.94</b>	<b>11.67</b>
Andhra Bank	56.17	63.58	65.15	67.28	69.26	74.32	69.53	75.06	76.44	77.57	74.31	79.30	75.04	70.02	71.64	<b>70.98</b>	<b>5.92</b>	<b>8.34</b>
Bank of Baroda	48.79	53.36	63.97	66.94	70.18	74.46	70.41	72.76	72.96	67.95	68.43	67.99	66.85	63.70	72.28	<b>66.74</b>	<b>6.90</b>	<b>10.34</b>
Bank of India	64.15	70.45	69.38	71.00	75.64	75.33	73.33	70.87	76.35	74.28	76.25	74.07	70.02	67.86	65.54	<b>71.64</b>	<b>3.71</b>	<b>5.18</b>
Bank of Maharashtra	44.36	45.28	61.21	67.57	70.13	65.62	61.38	67.89	71.20	77.69	74.34	78.30	75.33	68.69	61.73	<b>66.05</b>	<b>9.87</b>	<b>14.95</b>
Canara Bank	56.10	62.42	68.00	69.18	69.60	73.96	69.96	69.84	69.19	66.43	69.69	67.92	67.68	69.05	72.74	<b>68.12</b>	<b>4.08</b>	<b>5.99</b>
Central Bank of India	40.79	44.90	56.38	62.57	66.17	65.12	63.45	70.36	73.14	74.25	71.91	71.97	67.63	46.99	53.09	<b>61.91</b>	<b>10.59</b>	<b>17.10</b>
Corporation Bank	59.89	68.10	72.89	70.71	70.70	65.57	64.81	71.14	71.01	69.29	68.98	70.70	68.39	63.64	65.39	<b>68.08</b>	<b>3.42</b>	<b>5.02</b>
Dena Bank	51.29	54.12	60.24	66.10	67.83	67.08	67.09	68.20	72.05	66.06	68.62	66.26	70.11	63.69	61.79	<b>64.70</b>	<b>5.53</b>	<b>8.55</b>
Indian Bank	46.40	52.80	55.10	61.71	65.26	70.81	70.44	70.26	74.10	73.84	74.81	73.94	72.38	69.97	75.17	<b>67.13</b>	<b>8.74</b>	<b>13.02</b>
Indian Overseas Bank	48.92	56.97	68.78	68.46	71.63	74.80	68.30	73.54	75.97	76.75	74.98	67.77	71.65	66.46	61.10	<b>68.41</b>	<b>7.42</b>	<b>10.85</b>
Oriental Bank of Commerce	55.17	52.87	66.89	68.97	70.08	69.64	68.29	67.90	70.80	71.99	70.70	69.76	71.26	71.90	65.77	<b>67.47</b>	<b>5.56</b>	<b>8.24</b>
Punjab and Sind Bank	44.20	44.61	52.79	60.67	73.87	70.99	66.40	69.91	71.39	71.27	66.36	72.55	70.05	68.20	65.44	<b>64.58</b>	<b>9.41</b>	<b>14.57</b>
Punjab National Bank	53.72	58.56	62.35	69.07	71.79	73.75	74.84	74.70	75.18	76.73	75.43	73.28	74.55	67.47	67.54	<b>69.93</b>	<b>6.65</b>	<b>9.51</b>
Syndicate Bank	48.48	57.74	68.00	65.71	67.30	70.36	74.94	76.76	76.56	77.72	80.24	77.78	76.94	76.63	77.24	<b>71.49</b>	<b>8.53</b>	<b>11.94</b>
UCO Bank	52.56	55.90	68.53	72.45	68.93	68.65	66.52	67.44	74.24	73.28	74.36	68.23	60.79	59.48	59.10	<b>66.03</b>	<b>6.64</b>	<b>10.06</b>
Union Bank of India	57.20	64.86	72.04	73.24	71.51	69.60	70.17	72.36	77.66	76.92	74.82	78.56	78.01	76.21	70.69	<b>72.26</b>	<b>5.43</b>	<b>7.52</b>
United Bank of India	34.99	44.93	53.07	59.61	59.31	64.90	62.09	68.73	70.74	68.46	58.98	61.35	58.47	52.10	48.32	<b>57.74</b>	<b>9.38</b>	<b>16.25</b>
Vijaya Bank	52.56	55.96	60.14	64.42	66.09	65.04	65.30	65.18	68.48	70.82	64.66	66.90	70.94	71.08	73.86	<b>65.43</b>	<b>5.53</b>	<b>8.46</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 16 MA1 Total Advances to Total Deposits of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	44.68	49.20	55.63	62.73	68.09	69.48	73.84	75.25	77.13	77.97	81.89	87.17	94.64	90.03	96.92	<b>73.64</b>	<b>15.20</b>	<b>20.63</b>
Catholic Syrian Bank	48.92	56.93	62.83	63.44	62.31	58.17	64.01	71.28	72.26	71.72	63.68	65.42	54.39	54.45	63.56	<b>62.23</b>	<b>6.51</b>	<b>10.46</b>
City Union Bank	54.34	65.03	72.48	70.84	70.62	68.79	66.44	71.45	74.10	74.94	72.98	74.50	77.53	79.14	84.78	<b>71.86</b>	<b>6.68</b>	<b>9.30</b>
Dhanalaxmi Bank	52.82	60.29	62.95	59.49	58.25	64.32	70.53	71.19	72.87	67.48	63.85	60.50	60.46	57.08	55.96	<b>62.54</b>	<b>5.68</b>	<b>9.08</b>
DCB Bank	54.52	55.36	59.77	60.21	66.98	70.46	72.27	74.97	82.43	78.14	78.35	82.57	86.57	82.00	84.71	<b>72.62</b>	<b>10.56</b>	<b>14.55</b>
Federal Bank	57.14	58.07	65.64	69.03	72.95	69.54	74.74	74.28	77.15	76.54	72.72	72.41	73.37	75.09	82.11	<b>71.39</b>	<b>6.53</b>	<b>9.15</b>
HDFC Bank	58.35	70.33	62.84	68.74	62.94	69.24	75.17	76.70	79.21	80.92	82.49	81.08	85.02	86.16	83.46	<b>74.84</b>	<b>8.60</b>	<b>11.49</b>
ICICI Bank	91.98	91.57	88.54	84.97	92.30	99.98	69.74	75.09	78.11	80.33	82.90	86.60	97.04	94.73	91.34	<b>87.02</b>	<b>8.20</b>	<b>9.42</b>
IndusInd Bank	65.19	68.63	62.04	62.82	67.21	71.33	76.94	73.63	80.55	80.24	89.49	91.14	95.07	88.64	94.35	<b>77.82</b>	<b>11.27</b>	<b>14.49</b>
Jammu & Kashmir Bank	49.75	53.21	61.67	67.79	66.04	63.42	60.94	57.85	61.31	60.48	66.32	67.19	72.33	68.75	71.14	<b>63.21</b>	<b>6.11</b>	<b>9.66</b>
Karnataka Bank	49.62	58.02	58.83	68.05	63.72	58.08	59.95	62.66	64.84	68.77	68.83	67.97	67.15	65.07	75.16	<b>63.78</b>	<b>5.98</b>	<b>9.37</b>
Karur Vysya Bank	68.06	69.24	73.32	75.38	75.07	68.93	69.78	71.62	74.23	75.97	77.42	80.53	78.05	76.18	78.75	<b>74.17</b>	<b>3.76</b>	<b>5.07</b>
Kotak Mahindra Bank	47.03	93.43	96.69	99.31	94.69	106.27	84.14	97.56	98.90	93.26	88.44	87.33	85.59	86.44	88.10	<b>89.81</b>	<b>12.92</b>	<b>14.38</b>
Lakshmi Vilas Bank	61.86	66.30	68.09	71.97	68.68	71.14	69.17	71.70	70.30	73.15	67.73	72.93	77.24	77.66	77.36	<b>71.02</b>	<b>4.22</b>	<b>5.95</b>
RBL Bank	48.38	54.07	56.15	60.53	53.20	61.11	73.67	93.29	87.19	76.45	84.80	84.51	87.19	85.14	91.72	<b>73.16</b>	<b>15.35</b>	<b>20.98</b>
South Indian Bank	50.69	63.18	66.50	64.70	68.97	65.49	68.76	68.33	74.20	71.45	75.97	71.75	73.74	70.16	75.75	<b>68.64</b>	<b>6.13</b>	<b>8.93</b>
Tamilnad Mercantile Bank	48.00	54.41	60.09	67.22	69.51	68.70	71.20	78.00	80.53	80.38	75.70	75.38	74.34	68.26	73.30	<b>69.67</b>	<b>8.99</b>	<b>12.90</b>
<b>Foreign Banks</b>																		
Bank of America	154.83	161.56	159.96	107.29	82.38	80.54	66.14	98.16	104.03	103.32	105.21	96.62	94.69	71.26	80.46	<b>104.43</b>	<b>29.77</b>	<b>28.50</b>
Barclays Bank	2.86	3.24	1.20	17.10	110.63	84.50	106.92	123.31	160.83	167.33	74.59	102.10	110.07	104.33	138.42	<b>87.16</b>	<b>54.40</b>	<b>62.41</b>
BNP Paribas	75.69	102.69	100.34	111.62	116.55	110.64	74.45	117.31	104.81	138.67	99.95	99.13	90.50	76.77	78.08	<b>99.81</b>	<b>17.70</b>	<b>17.74</b>
Citi Bank	74.56	84.30	87.62	86.76	83.20	77.25	67.32	71.64	72.80	78.18	72.17	68.49	61.42	52.74	49.00	<b>72.50</b>	<b>11.12</b>	<b>15.34</b>
DBS Bank	28.95	91.58	61.40	32.06	46.40	45.21	60.50	102.12	99.40	89.48	86.57	91.09	75.35	80.91	61.14	<b>70.14</b>	<b>23.30</b>	<b>33.22</b>
Duetsche Bank	82.85	71.41	58.95	70.86	65.14	62.19	87.95	97.59	74.51	107.60	111.11	93.54	98.96	90.28	82.87	<b>83.72</b>	<b>15.77</b>	<b>18.83</b>
HSBC	59.18	74.18	67.37	66.45	70.26	55.21	42.11	50.64	57.82	62.79	56.07	54.68	62.51	53.17	55.82	<b>59.22</b>	<b>7.96</b>	<b>13.45</b>
Standard Chartered Bank	80.97	88.67	84.60	88.09	90.13	89.68	86.22	84.22	86.88	99.69	94.88	93.90	88.49	85.66	76.75	<b>87.92</b>	<b>5.41</b>	<b>6.15</b>

Source: Compiled and Calculated using Capital line database and RBI reports

**MA1- Total Advances to Total deposits ratio**

The ratio of Total Advances to Total Deposit was used to measure how effectively banks are using their available deposits to generate higher interest income. It helps to expose the usage of funds and interest earning capacity of the banks. Table 16 shows the ratio of Total Advances to Total Deposits of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the ratio of advances to deposits of Union Bank of India reported the highest mean value at 72.26 percent with a standard deviation at 5.43 percent followed by Bank of India at 71.64 percent with a standard deviation at 3.71 percent. It implied that the banks are more efficient in converting their available deposits into high earning advances. United Bank of India reported the lowest mean value at 57.74 percent with a standard deviation at 9.38 percent and Central Bank of India at 61.91 percent with a standard deviation at 10.59 percent.

Among private sector banks, the mean value of Kotak Mahindra Bank was found to be the highest at 89.81 percent with a higher standard deviation at 12.92 percent followed by ICICI Bank at 87.02 percent with a standard deviation at 8.20 percent. A higher credit-deposit ratio indicates a better earning capacity to the banks to earn interest income. Catholic Syrian Bank registered the lowest mean value at 62.23 percent followed by Dhanalaxmi Bank at 62.54 percent with a standard deviation at 6.51 percent and 5.68 percent respectively. It implied that the banks used lower portion of deposits for lending practice, which might affect the banks interest earning capacity.

In foreign banks, Bank of America reported the highest average at 104.43 percent, which was above 100 percent, implying the bank has to reduce their credit-deposit ratio by monitoring credit growth and by strengthening deposits from customers. The lowest average was recorded by HSBC Bank at 59.22 percent with a standard deviation at 7.96 percent.

The ratio of Total Advances to Total Deposits of select scheduled commercial banks significantly increased in 2017-2018 as compared to 2003-2004. The ratio of most of the public sector banks, private sector banks and foreign banks showed an upward movement throughout the study period. It is advisable to maintain a credit-deposit ratio in between 70 – 75 percent.

Table 17 MA2 Profit Per Employee of Select Scheduled Commercial Banks

(in crores)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	0.02	0.03	0.04	0.04	0.05	0.04	0.06	0.07	0.08	0.05	0.05	0.03	0.03	-0.01	-0.19	<b>0.03</b>	<b>0.06</b>	<b>235.76</b>
Andhra Bank	0.04	0.04	0.04	0.04	0.04	0.05	0.07	0.09	0.09	0.09	0.02	0.03	0.03	0.01	-0.17	<b>0.03</b>	<b>0.06</b>	<b>175.75</b>
Bank of Baroda	0.02	0.02	0.02	0.03	0.04	0.06	0.08	0.11	0.12	0.10	0.10	0.07	-0.10	0.03	-0.04	<b>0.04</b>	<b>0.06</b>	<b>129.31</b>
Bank of India	0.02	0.01	0.02	0.03	0.05	0.07	0.04	0.06	0.06	0.06	0.06	0.04	-0.12	-0.03	-0.12	<b>0.02</b>	<b>0.06</b>	<b>354.40</b>
Bank of Maharashtra	0.02	0.01	0.00	0.02	0.02	0.03	0.03	0.02	0.03	0.06	0.03	0.03	0.01	0.11	-0.12	<b>0.02</b>	<b>0.05</b>	<b>225.09</b>
Canara Bank	0.03	0.02	0.03	0.03	0.04	0.05	0.07	0.10	0.08	0.07	0.05	0.05	-0.05	0.02	-0.07	<b>0.03</b>	<b>0.04</b>	<b>125.01</b>
Central Bank of India	0.02	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.02	0.03	-0.03	0.02	-0.04	-0.06	-0.14	<b>0.01</b>	<b>0.05</b>	<b>-171.82</b>
Corporation Bank	0.05	0.04	0.04	0.05	0.07	0.08	0.10	0.11	0.11	0.10	0.03	0.03	-0.03	0.03	-0.22	<b>0.04</b>	<b>0.08</b>	<b>199.64</b>
Dena Bank	0.02	0.01	0.01	0.02	0.04	0.04	0.05	0.06	0.08	0.07	0.00	0.00	-0.02	-0.06	-0.14	<b>0.01</b>	<b>0.05</b>	<b>446.38</b>
Indian Bank	0.02	0.02	0.02	0.04	0.05	0.06	0.08	0.09	0.09	0.08	0.06	0.05	0.04	0.07	0.06	<b>0.06</b>	<b>0.02</b>	<b>42.19</b>
Indian Overseas Bank	0.02	0.03	0.03	0.04	0.05	0.05	0.03	0.04	0.04	0.02	0.02	-0.01	-0.09	-0.11	-0.22	<b>0.01</b>	<b>0.07</b>	<b>-180.23</b>
Oriental Bank of Commerce	0.05	0.07	0.05	0.06	0.06	0.06	0.07	0.09	0.06	0.07	0.06	0.02	0.01	-0.05	-0.27	<b>0.03</b>	<b>0.09</b>	<b>314.00</b>
Punjab and Sind Bank	0.00	0.00	0.01	0.02	0.04	0.05	0.06	0.06	0.06	0.04	0.03	0.01	0.04	0.02	-0.08	<b>0.02</b>	<b>0.03</b>	<b>143.37</b>
Punjab National Bank	0.02	0.02	0.02	0.03	0.04	0.06	0.07	0.08	0.08	0.08	0.05	0.05	-0.06	0.02	-0.17	<b>0.03</b>	<b>0.06</b>	<b>241.54</b>
Syndicate Bank	0.02	0.02	0.02	0.03	0.03	0.04	0.03	0.04	0.05	0.08	0.07	0.06	-0.06	0.01	-0.10	<b>0.02</b>	<b>0.05</b>	<b>198.92</b>
UCO Bank	0.02	0.01	0.01	0.01	0.02	0.02	0.04	0.04	0.05	0.03	0.07	0.05	-0.11	-0.08	-18.48	<b>-1.22</b>	<b>4.61</b>	<b>-378.13</b>
Union Bank of India	0.03	0.03	0.03	0.03	0.05	0.06	0.07	0.08	0.06	0.07	0.05	0.05	0.04	0.02	-0.14	<b>0.04</b>	<b>0.05</b>	<b>141.27</b>
United Bank of India	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.03	0.04	0.03	-0.07	0.16	0.12	0.10	0.07	<b>0.04</b>	<b>0.05</b>	<b>131.34</b>
Vijaya Bank	0.04	0.03	0.01	0.03	0.03	0.02	0.05	0.06	0.05	0.05	0.03	0.03	0.03	0.05	0.05	<b>0.04</b>	<b>0.01</b>	<b>35.89</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 17 MA2 Profit Per Employee of Select Scheduled Commercial Banks

(in crores)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	0.08	0.08	0.09	0.08	0.08	0.1	0.12	0.14	0.14	0.15	0.15	0.17	0.18	0.07	0.00	<b>0.11</b>	<b>0.05</b>	<b>42.09</b>
Catholic Syrian Bank	0.02	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	-0.02	-0.05	0.00	-0.03	<b>0.01</b>	<b>0.02</b>	<b>-2709.24</b>
City Union Bank	0.04	0.03	0.04	0.04	0.05	0.05	0.06	0.08	0.08	0.09	0.08	0.09	0.10	0.11	0.11	<b>0.07</b>	<b>0.03</b>	<b>37.62</b>
Dhanalaxmi Bank	0.01	-0.02	0.01	0.01	0.02	0.04	0.01	0.01	-0.03	0.00	-0.10	-0.11	-0.10	0.01	-1.32	<b>-0.10</b>	<b>0.33</b>	<b>-315.62</b>
DCB Bank	0.01	-0.11	-0.07	0.00	0.02	-0.04	-0.05	0.01	0.02	0.05	0.06	0.06	0.05	0.04	0.05	<b>0.01</b>	<b>0.05</b>	<b>752.33</b>
Federal Bank	0.02	0.01	0.04	0.04	0.05	0.07	0.06	0.07	0.09	0.09	0.08	0.09	0.04	0.07	0.07	<b>0.06</b>	<b>0.02</b>	<b>41.04</b>
HDFC Bank	0.09	0.09	0.07	0.06	0.05	0.04	0.06	0.07	0.08	0.10	0.12	0.10	0.15	0.16	0.20	<b>0.10</b>	<b>0.04</b>	<b>44.97</b>
ICICI Bank	0.12	0.11	0.10	0.09	0.10	0.11	0.09	0.10	0.11	0.14	0.14	0.16	0.14	0.12	0.08	<b>0.11</b>	<b>0.02</b>	<b>19.16</b>
IndusInd Bank	0.15	0.10	0.02	0.03	0.03	0.03	0.07	0.08	0.09	0.09	0.09	0.09	0.10	0.11	0.14	<b>0.08</b>	<b>0.04</b>	<b>46.84</b>
Jammu & Kashmir Bank	0.06	0.02	0.03	0.04	0.05	0.05	0.07	0.08	0.09	0.11	0.13	0.05	0.04	-0.16	0.02	<b>0.05</b>	<b>0.06</b>	<b>138.55</b>
Karnataka Bank	0.03	0.03	0.04	0.04	0.05	0.05	0.03	0.04	0.04	0.05	0.04	0.06	0.05	0.06	0.04	<b>0.04</b>	<b>0.01</b>	<b>21.76</b>
Karur Vysya Bank	0.06	0.04	0.05	0.05	0.06	0.06	0.08	0.09	0.09	0.08	0.06	0.06	0.08	0.08	0.04	<b>0.07</b>	<b>0.02</b>	<b>24.91</b>
Kotak Mahindra Bank	0.10	0.05	0.04	0.03	0.04	0.03	0.07	0.08	0.09	0.10	0.10	0.11	0.07	0.11	0.12	<b>0.08</b>	<b>0.03</b>	<b>39.85</b>
Lakshmi Vilas Bank	0.02	0.00	0.01	0.01	0.01	0.02	0.01	0.04	0.04	0.03	0.02	0.03	0.04	0.06	-0.11	<b>0.02</b>	<b>0.04</b>	<b>240.35</b>
RBL Bank	0.02	-0.02	0.00	0.01	0.03	0.05	0.03	0.01	0.05	0.05	0.03	0.06	0.08	0.09	0.12	<b>0.04</b>	<b>0.04</b>	<b>87.27</b>
South Indian Bank	0.02	0.24	0.01	0.03	0.04	0.04	0.05	0.05	0.07	0.08	0.07	0.04	0.04	0.05	0.04	<b>0.06</b>	<b>0.05</b>	<b>89.30</b>
Tamilnad Mercantile Bank	0.04	0.04	0.04	0.05	0.05	0.06	0.08	0.1	0.11	0.14	0.08	0.09	0.09	0.07	0.05	<b>0.07</b>	<b>0.03</b>	<b>39.40</b>
<b>Foreign Banks</b>																		
Bank of America	0.24	0.29	0.52	0.69	1.02	1.11	1.21	1.39	1.49	1.21	1.76	1.44	1.63	1.59	1.61	<b>1.15</b>	<b>0.48</b>	<b>41.93</b>
Barclays Bank	2.11	1.60	2.71	0.36	0.01	0.02	-0.42	0.09	-0.23	-0.11	1.07	1.36	1.65	1.86	1.21	<b>0.89</b>	<b>0.95</b>	<b>107.48</b>
BNP Paribas	-0.04	0.05	0.06	0.19	0.36	0.49	0.55	0.56	0.24	0.56	0.55	0.80	0.83	0.90	0.96	<b>0.47</b>	<b>0.31</b>	<b>65.85</b>
Citi Bank	0.28	0.22	0.22	0.17	0.38	0.45	0.18	0.29	0.36	0.50	0.51	0.59	0.60	0.69	0.67	<b>0.41</b>	<b>0.17</b>	<b>42.59</b>
DBS Bank	-0.28	0.15	0.12	0.40	0.28	0.72	0.65	0.21	0.43	0.35	0.00	-0.29	0.01	0.01	-0.45	<b>0.15</b>	<b>0.32</b>	<b>210.56</b>
Duetsche Bank	0.65	0.20	0.19	0.21	0.28	0.27	0.30	0.43	0.61	0.62	0.42	0.79	0.66	0.55	0.51	<b>0.45</b>	<b>0.19</b>	<b>42.56</b>
HSBC	0.06	0.10	0.12	0.14	0.17	0.16	0.12	0.23	0.35	0.40	0.31	0.34	0.41	0.58	0.58	<b>0.27</b>	<b>0.16</b>	<b>60.20</b>
Standard Chartered Bank	0.13	0.12	0.15	0.20	0.20	0.24	0.26	0.26	0.23	0.41	0.24	0.42	0.14	0.30	0.25	<b>0.24</b>	<b>0.09</b>	<b>36.76</b>

Source: Compiled and Calculated using Capital line database and RBI reports

## **MA2 – Profit per Employee**

Profit per Employee is calculated to measure how effectively banks are utilizing their employees to generate better revenue to the business. It is an indicator of employees earning capacity in generating profit. Table 17 shows the results of profit per employee of select scheduled commercial banks from 2003-2004 to 2017-2018.

In public sector banks, the mean value of profit per employee of Indian Bank was found to be the highest at Rs. 0.06 Crores. Subsequently, Corporation Bank, Bank of Baroda, United Bank of India, Union Bank of India and Vijaya Bank recorded an average of Rs. 0.04 Crores each, implying the efficiency of employees in generating revenue. Central Bank of India and Indian Overseas Bank reported the mean value at Rs. 0.01 Crores with a standard deviation at 0.05 percent and 0.07 percent respectively. UCO Bank recorded the lowest and negative mean value at Rs. -1.22 Crores with a higher standard deviation at 4.61 percent.

In private sector banks, the average profit per employee of Axis Bank and ICICI Bank was found to be the highest at Rs. 0.11 Crores with a standard deviation at 0.05 percent and 0.02 percent respectively. The ratio of HDFC Bank was at Rs.0.10 Crores. Higher ratio indicates, higher the contribution of employees to yield productive return. Catholic Syrian Bank recorded the lowest mean value at Rs. 0.01 Crores with a standard deviation at 0.02 percent. Dhanalaxmi Bank with a negative average value of Rs. -0.10 Crores with a standard deviation at 0.33 percent.

In foreign banks, the highest profit per employee was reported by Bank of America at Rs. 1.15 Crores with a standard deviation at 0.48 percent followed by Barclays bank at Rs. 0.89 Crores. It showed that the banks have high potential employees to produce better revenue. The lowest average in the group was reported by DBS Bank at Rs. 0.15 Crores with a standard deviation at 0.32 percent.

The ratio of profit per employee of all the select public sector banks was declined from 2012-2013 and registered a negative ratio in 2017-2018 except Indian bank, Vijaya bank and United bank of India. The ratio of major private sector banks reported a downward trend and all the select foreign banks recorded an increasing trend except DBS Bank and Duetsche Bank in 2017-2018 as compared to 2003-2004.

Table 18 MA3 Business Per Employee of Select Scheduled Commercial Banks

(in Crores)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	2.15	2.82	3.36	4.95	6.04	7.06	8.45	10.63	12.17	13.73	13.50	14.30	14.85	15.03	15.86	9.66	4.77	49.33
Andhra Bank	2.77	3.46	4.27	5.36	6.27	7.28	9.39	11.65	12.62	13.55	13.47	15.36	16.65	17.52	18.70	10.55	5.20	49.29
Bank of Baroda	2.53	3.16	3.96	5.55	7.10	9.14	9.81	12.29	14.66	16.89	18.65	18.89	16.80	17.49	17.66	11.64	5.87	50.45
Bank of India	2.63	3.20	3.81	4.98	6.52	8.33	10.11	12.84	13.60	15.82	19.63	20.69	17.96	19.40	18.29	11.85	6.38	53.79
Bank of Maharashtra	2.69	2.95	3.06	4.05	5.16	6.36	7.62	8.25	9.67	12.56	14.35	15.60	18.02	18.40	18.07	9.79	5.71	58.30
Canara Bank	2.98	3.51	4.42	5.49	6.09	7.80	9.83	11.99	13.74	14.20	14.38	14.35	14.45	14.43	14.81	10.16	4.46	43.92
Central Bank of India	1.82	2.07	2.40	3.04	4.01	5.60	7.12	8.35	8.62	10.67	10.25	11.38	11.95	11.81	12.71	7.45	3.86	51.81
Corporation Bank	3.63	4.38	5.27	6.37	8.39	10.49	12.69	15.73	17.13	19.21	19.33	19.14	18.79	19.58	16.63	13.12	5.91	45.06
Dena Bank	2.74	3.13	3.64	4.58	5.59	7.14	8.27	10.77	12.84	14.31	14.50	14.53	14.62	13.69	13.25	9.57	4.55	47.57
Indian Bank	1.89	2.46	2.95	3.64	4.88	6.17	7.61	9.30	11.14	13.01	14.53	14.43	15.31	14.88	18.56	9.38	5.35	57.05
Indian Overseas Bank	2.33	2.69	3.55	4.67	5.83	6.89	7.12	10.05	11.76	12.88	13.67	13.24	12.41	12.28	13.10	8.83	4.11	46.52
Oriental Bank of Commerce	4.16	5.12	5.70	7.43	9.24	11.42	13.31	14.18	14.62	16.20	17.10	17.43	16.89	17.90	16.18	12.46	4.74	38.04
Punjab and Sind Bank	2.05	0.00	2.77	3.29	4.67	6.56	9.63	11.90	13.02	13.70	15.31	15.95	16.20	15.34	18.18	9.90	5.91	59.71
Punjab National Bank	2.28	2.77	3.31	4.07	5.05	6.55	8.08	10.18	11.32	11.65	12.83	13.19	13.59	14.17	14.74	8.92	4.40	49.28
Syndicate Bank	2.40	2.80	3.49	4.89	5.86	7.51	7.47	8.75	10.74	12.57	14.30	15.39	14.61	13.51	14.39	9.25	4.53	49.04
UCO Bank	2.49	3.21	3.87	4.64	5.80	7.32	8.64	10.69	11.64	11.89	13.61	13.77	13.81	13.48	12.74	9.17	4.11	44.80
Union Bank of India	2.86	3.43	4.36	5.09	6.20	6.94	8.53	10.43	10.70	12.15	13.76	14.46	15.51	16.43	17.83	9.91	4.82	48.61
United Bank of India	1.69	2.08	2.54	3.50	4.63	5.85	7.14	8.60	9.71	10.83	10.67	11.53	12.37	13.04	13.22	7.83	4.03	51.51
Vijaya Bank	2.49	3.11	3.69	4.55	6.13	7.56	8.36	9.28	11.28	12.40	13.82	14.96	14.57	14.17	18.10	9.63	4.80	49.86

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 18 MA 3 Business Per Employee of Select Scheduled Commercial Banks

(Rs. in Crores)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	8.08	10.21	10.2	10.24	11.17	10.6	11.11	13.66	12.76	12.15	12.3	13.71	14.84	14	14.84	<b>11.99</b>	<b>1.91</b>	<b>15.95</b>
Catholic Syrian Bank	1.82	2.2	2.47	2.78	3.17	3.74	4.24	5.4	6.77	7.4	7.76	7.89	7.75	8.59	8.51	<b>5.37</b>	<b>2.46</b>	<b>45.80</b>
City Union Bank	2.87	3.26	3.40	3.50	4.99	5.65	6.51	7.81	8.47	9.38	9.06	9.65	10.69	11.53	11.48	<b>7.22</b>	<b>3.01</b>	<b>41.66</b>
Dhanalaxmi Bank	2.49	2.93	3.12	3.67	4.09	5.86	3.70	5.89	5.93	6.75	7.74	8.99	8.36	8.85	9.19	<b>5.84</b>	<b>2.32</b>	<b>39.67</b>
DCB Bank	4.80	4.02	3.90	3.91	4.54	3.79	5.15	4.91	5.14	6.74	6.89	6.96	6.78	6.85	7.23	<b>5.44</b>	<b>1.27</b>	<b>23.35</b>
Federal Bank	3.27	3.66	4.31	5.44	6.55	7.50	8.13	9.23	10.11	10.75	9.97	11.15	12.03	14.49	17.09	<b>8.91</b>	<b>3.83</b>	<b>42.93</b>
HDFC Bank	8.66	8.06	7.58	6.07	5.06	4.46	5.90	6.53	6.54	7.50	8.90	10.10	11.39	12.36	15.08	<b>8.28</b>	<b>2.82</b>	<b>34.04</b>
ICICI Bank	10.10	8.80	9.05	10.27	10.08	11.54	7.65	7.35	7.08	7.35	7.47	8.32	9.43	9.89	10.78	<b>9.01</b>	<b>1.38</b>	<b>15.27</b>
IndusInd Bank	10.80	9.26	8.80	10.40	10.63	8.36	8.37	8.44	7.88	8.41	7.17	7.19	7.65	9.16	11.54	<b>8.94</b>	<b>1.31</b>	<b>14.60</b>
Jammu & Kashmir Bank	3.45	4.35	5.16	5.85	5.96	5.00	7.31	8.56	8.86	10.49	11.74	11.43	11.37	12.20	11.99	<b>8.25</b>	<b>3.03</b>	<b>36.69</b>
Karnataka Bank	3.20	3.81	4.78	5.24	5.89	6.49	7.27	7.71	8.59	9.66	9.59	10.52	10.83	11.37	13.45	<b>7.89</b>	<b>2.91</b>	<b>36.84</b>
Karur Vysya Bank	3.30	3.87	4.39	4.89	6.04	6.38	7.89	9.26	9.84	10.14	10.55	11.30	12.41	12.85	12.92	<b>8.40</b>	<b>3.27</b>	<b>38.87</b>
Kotak Mahindra Bank	3.54	3.87	3.52	3.84	3.84	3.47	4.87	5.35	6.13	6.86	6.78	7.05	7.51	8.35	9.04	<b>5.60</b>	<b>1.85</b>	<b>33.02</b>
Lakshmi Vilas Bank	2.76	2.96	3.71	4.30	4.53	5.10	5.60	7.19	7.87	8.63	9.23	9.55	10.99	11.46	11.30	<b>7.01</b>	<b>2.98</b>	<b>42.52</b>
RBL Bank	1.98	2.21	2.51	2.54	3.10	3.73	3.91	4.35	6.07	7.39	6.97	8.23	10.95	12.16	15.06	<b>6.08</b>	<b>3.90</b>	<b>64.10</b>
South Indian Bank	3.06	3.52	4.22	5.08	6	6.45	7.71	9.18	10.79	12.01	11.99	11.54	12.55	14.84	16.32	<b>9.02</b>	<b>4.07</b>	<b>45.15</b>
Tamilnad Mercantile Bank	2.92	3.17	3.58	4.51	5.42	6.79	8.7	9.59	10.69	11.33	10.75	10.84	12.2	12.35	13.09	<b>8.40</b>	<b>3.52</b>	<b>41.95</b>
<b>Foreign Banks</b>																		
Bank of America	16.99	17.08	19.25	19.21	24.84	24.31	31.02	38.52	33.99	38.07	40.83	44.74	57.64	71.73	74.14	<b>36.82</b>	<b>18.02</b>	<b>48.94</b>
Barclays Bank	2.71	1.88	1.49	2.81	9.42	11.10	12.08	14.37	18.31	27.45	45.21	73.93	100.50	94.98	78.02	<b>32.95</b>	<b>34.74</b>	<b>105.44</b>
BNP Paribas	9.22	9.81	12.06	13.53	19.50	20.35	27.76	30.08	35.19	39.05	69.55	73.48	99.64	100.33	104.54	<b>44.27</b>	<b>34.16</b>	<b>77.15</b>
Citi Bank	16.67	13.60	16.08	13.60	17.64	18.80	19.80	17.45	19.75	21.24	22.26	24.63	28.62	30.29	32.36	<b>20.85</b>	<b>5.61</b>	<b>26.90</b>
DBS Bank	6.13	11.11	6.00	10.03	14.17	16.62	25.55	24.06	32.78	35.66	37.20	34.76	37.61	42.02	36.42	<b>24.67</b>	<b>12.43</b>	<b>50.39</b>
Duetsche Bank	10.99	16.09	10.17	11.44	16.17	14.34	18.42	19.89	21.56	25.75	31.84	41.97	48.09	41.03	48.05	<b>25.05</b>	<b>13.19</b>	<b>52.64</b>
HSBC	8.21	8.53	9.76	9.80	10.12	9.62	11.36	12.22	16.59	18.90	22.74	26.78	29.57	31.17	35.38	<b>17.38</b>	<b>9.08</b>	<b>52.23</b>
Standard Chartered Bank	7.80	7.86	8.37	9.24	8.17	9.72	10.83	13.46	15.47	16.80	20.71	19.00	18.84	18.21	19.02	<b>13.57</b>	<b>4.74</b>	<b>34.92</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **MA3 – Business per Employee**

Business per Employee is a key parameter, which measures the efficacy of employees to produce higher return to the banks. Higher the ratio indicates, better the utilization of employees to earn revenue to the banks. Table 18 portrays the ratio of Business per Employee of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

Among public sector banks, the ratio of business per employee of Corporation Bank was found to be the highest at Rs. 13.12 Crores followed by Oriental Bank of Commerce at Rs. 12.46 Crores with a standard deviation of 5.91 percent and 4.74 percent respectively. It showed that the banks motivated their employees to generate revenue to the banks. The ratio of Central Bank of India was found to be the lowest at Rs. 7.45 Crores followed by United Bank of India at Rs. 7.83 Crores with a standard deviation of 3.86 percent and 4.03 percent respectively.

In private sector banks, Axis Bank reported the highest average of business per employee at Rs. 11.99 Crores with a standard deviation of 1.91 percent followed by South Indian Bank at Rs. 9.02 Crores with a standard deviation of 4.07 percent. It implied that the banks have efficient employees to improve their operations of business. Catholic Syrian Bank recorded the lowest average at Rs. 5.37 Crores with a standard deviation of 2.46 percent and DCB Bank at Rs. 5.44 Crores with a standard deviation of 1.27 percent. The banks have to motivate their employees to improve their earning capacity.

In foreign banks, BNP Paribas Bank reported the highest mean value at Rs. 44.27 Crores with a higher standard deviation at 34.16 percent. Standard Chartered Bank reported the lowest mean value at Rs. 13.57 Crores with a standard deviation at 4.74 percent.

The ratio of Business per Employee of all the select banks was increased in 2017-2018 compared to 2003-2004. Majority of the select banks increased their business per employee ratio whereas, few banks recorded fluctuations. The ratio of public sector banks recorded a fluctuating trend. Majority of the private sector banks and foreign banks increased the ratio of business per employee throughout the study period.

Table 19 MA4 Return On Equity of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	29.86	23.28	19.41	16.76	18.67	13.13	17.86	16.73	17.77	10.44	9.93	4.91	-5.29	-2.19	-45.52	<b>9.72</b>	<b>17.22</b>	<b>177.21</b>
Andhra Bank	31.91	28.31	16.78	17.04	17.71	17.91	23.72	19.52	17.98	15.27	4.99	6.34	4.91	1.53	-31.54	<b>12.82</b>	<b>14.48</b>	<b>112.91</b>
Bank of Baroda	18.85	12.03	10.54	11.87	13.00	17.29	20.25	20.16	18.22	14.02	12.62	8.53	-13.42	3.43	-5.60	<b>10.78</b>	<b>9.22</b>	<b>85.49</b>
Bank of India	25.15	7.62	14.07	19.05	18.98	22.29	12.24	14.39	12.77	11.49	9.12	5.43	-19.63	-5.07	-17.01	<b>8.73</b>	<b>12.73</b>	<b>145.89</b>
Bank of Maharashtra	21.22	11.48	3.23	15.61	18.43	14.90	15.38	8.32	9.12	11.87	5.24	5.59	1.15	-18.60	-11.52	<b>7.43</b>	<b>10.45</b>	<b>140.72</b>
Canara Bank	25.48	18.16	18.83	13.72	14.90	16.98	20.59	20.09	14.47	11.54	8.23	8.48	-8.90	3.33	-11.86	<b>11.60</b>	<b>10.18</b>	<b>87.70</b>
Central Bank of India	20.78	10.95	7.48	13.14	9.26	8.91	13.76	14.16	4.28	6.63	-8.00	3.47	-8.02	-14.12	-28.38	<b>3.62</b>	<b>12.51</b>	<b>345.63</b>
Corporation Bank	18.21	13.16	13.17	14.24	17.38	18.23	20.26	19.80	18.20	15.00	5.57	5.57	-4.46	4.41	-37.38	<b>9.43</b>	<b>14.24</b>	<b>151.05</b>
Dena Bank	27.51	5.53	5.45	13.47	19.98	19.47	19.65	16.73	17.94	14.06	7.72	3.57	-13.10	-11.24	-20.90	<b>8.39</b>	<b>13.45</b>	<b>160.31</b>
Indian Bank	23.76	19.39	20.25	19.78	19.55	17.45	18.80	18.00	16.17	13.21	8.36	6.66	4.38	8.19	6.82	<b>14.72</b>	<b>6.00</b>	<b>40.76</b>
Indian Overseas Bank	24.64	25.29	24.65	25.27	24.71	18.54	9.40	11.50	8.80	4.22	3.72	-2.90	-18.49	-24.86	-47.46	<b>5.80</b>	<b>20.81</b>	<b>358.60</b>
Oriental Bank of Commerce	25.63	21.82	10.78	10.37	6.12	12.03	13.77	13.54	9.56	10.39	8.48	3.61	1.04	-7.75	-49.82	<b>5.97</b>	<b>16.74</b>	<b>280.32</b>
Punjab and Sind Bank	1.91	-16.14	28.10	28.40	18.77	20.47	19.45	13.83	10.62	7.37	6.00	2.17	5.63	3.27	-12.03	<b>9.19</b>	<b>12.46</b>	<b>135.64</b>
Punjab National Bank	22.12	17.28	15.35	14.76	16.63	21.09	22.04	20.61	17.56	14.53	9.31	7.83	-10.37	3.15	-29.90	<b>10.80</b>	<b>13.67</b>	<b>126.59</b>
Syndicate Bank	22.79	18.33	18.93	19.74	19.76	18.22	14.45	14.86	14.53	19.01	14.45	11.66	-13.32	2.53	-21.57	<b>11.63</b>	<b>12.37</b>	<b>106.39</b>
UCO Bank	24.18	16.71	7.99	11.87	14.08	14.09	19.43	12.22	12.87	6.38	13.46	9.07	-24.16	-15.95	-45.15	<b>5.14</b>	<b>18.15</b>	<b>353.23</b>
Union Bank of India	23.07	19.89	14.81	16.29	18.88	19.75	19.91	16.31	12.21	12.48	9.18	9.02	5.90	2.37	-20.91	<b>11.94</b>	<b>10.42</b>	<b>87.26</b>
United Bank of India	22.82	17.88	11.19	11.07	5.45	6.00	8.26	10.43	11.34	6.66	-22.97	4.39	-4.83	3.00	-16.79	<b>4.93</b>	<b>11.55</b>	<b>234.45</b>
Vijaya Bank	30.80	23.95	7.60	17.47	14.69	8.33	14.60	10.87	11.06	10.54	7.06	7.13	5.16	9.21	6.84	<b>12.35</b>	<b>6.85</b>	<b>55.47</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 19 MA4 Return On Equity of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	24.49	13.89	16.89	19.42	12.21	17.77	15.67	17.84	18.60	15.64	16.27	16.47	15.47	6.60	0.43	<b>15.18</b>	<b>5.40</b>	<b>35.60</b>
Catholic Syrian Bank	29.58	5.08	2.85	8.31	11.98	9.58	-2.05	4.19	5.26	4.59	4.99	-5.98	-16.77	0.16	-10.96	<b>3.39</b>	<b>10.24</b>	<b>302.44</b>
City Union Bank	28.12	19.24	19.70	19.64	17.95	18.48	18.50	21.36	22.54	19.63	17.14	14.65	14.57	14.08	14.22	<b>18.66</b>	<b>3.57</b>	<b>19.15</b>
Dhanalaxmi Bank	13.04	-18.93	7.08	10.95	16.52	13.53	5.29	3.09	-15.88	0.36	-34.21	-33.36	-41.23	1.89	-3.32	<b>-5.01</b>	<b>18.38</b>	<b>-366.72</b>
DCB Bank	6.08	-82.07	-51.93	2.23	6.03	-14.72	-13.10	3.46	6.42	10.21	13.15	12.06	10.86	9.06	8.74	<b>-4.90</b>	<b>26.19</b>	<b>-534.45</b>
Federal Bank	21.01	12.45	18.02	19.49	9.38	11.57	9.90	11.49	13.61	13.17	12.07	13.00	5.88	9.29	7.20	<b>12.50</b>	<b>4.12</b>	<b>32.94</b>
HDFC Bank	18.93	14.73	16.43	17.74	13.83	15.33	13.70	15.47	17.27	18.57	19.50	16.47	16.92	16.26	16.45	<b>16.51</b>	<b>1.68</b>	<b>10.15</b>
ICICI Bank	19.58	15.54	11.26	12.61	8.88	7.59	7.80	9.35	10.70	12.48	13.40	13.90	10.84	9.81	6.45	<b>11.35</b>	<b>3.30</b>	<b>29.05</b>
IndusInd Bank	32.74	25.34	4.25	6.46	5.56	8.91	14.63	14.28	16.97	13.93	15.59	16.87	12.93	13.90	15.13	<b>14.50</b>	<b>7.06</b>	<b>48.69</b>
Jammu & Kashmir Bank	25.50	6.91	9.83	13.66	15.78	15.63	17.02	17.68	19.62	21.69	20.66	8.32	6.48	-28.76	3.29	<b>11.55</b>	<b>12.40</b>	<b>107.29</b>
Karnataka Bank	19.07	15.05	15.84	14.29	17.52	17.02	9.12	8.42	9.47	12.18	10.19	13.32	11.25	8.79	6.02	<b>12.50</b>	<b>3.75</b>	<b>29.95</b>
Karur Vysya Bank	22.62	13.84	15.53	15.05	17.51	17.47	20.74	19.65	18.53	17.84	12.92	10.93	12.41	12.03	5.52	<b>15.51</b>	<b>4.24</b>	<b>27.34</b>
Kotak Mahindra Bank	13.00	11.31	13.86	8.65	8.18	7.24	12.51	12.04	13.66	14.40	12.24	13.20	8.72	12.35	10.90	<b>11.48</b>	<b>2.19</b>	<b>19.05</b>
Lakshmi Vilas Bank	18.11	1.45	7.72	4.44	6.05	11.09	4.15	11.33	11.17	9.03	5.66	8.50	10.22	11.99	-25.13	<b>6.39</b>	<b>9.28</b>	<b>145.41</b>
RBL Bank	15.74	-20.93	1.09	1.97	5.27	8.94	5.41	1.14	5.70	5.78	4.92	9.29	9.78	10.29	9.50	<b>4.93</b>	<b>7.89</b>	<b>160.14</b>
South Indian Bank	21.36	1.91	7.94	14.38	13.06	14.93	15.74	15.86	18.53	16.72	15.07	8.56	8.67	8.10	6.39	<b>12.48</b>	<b>5.10</b>	<b>40.88</b>
Tamilnad Mercantile Bank	16.92	14.74	15.41	13.93	14.77	15.20	16.07	18.37	19.17	21.77	13.25	14.62	13.67	9.82	6.52	<b>14.95</b>	<b>3.51</b>	<b>23.47</b>
<b>Foreign Banks</b>																		
Bank of America	9.17	5.60	9.14	11.00	12.66	12.26	11.31	12.00	12.99	10.39	13.48	10.22	10.88	9.89	9.21	<b>10.68</b>	<b>1.92</b>	<b>18.00</b>
Barclays Bank	17.71	8.96	8.85	6.54	0.13	0.60	-11.11	1.97	-3.73	-1.02	6.75	7.15	7.79	7.86	4.58	<b>4.20</b>	<b>6.50</b>	<b>154.61</b>
BNP Paribas	-3.66	4.44	3.84	8.54	10.77	10.26	9.83	9.31	3.88	8.21	5.87	8.24	8.60	6.87	6.29	<b>6.75</b>	<b>3.53</b>	<b>52.29</b>
Citi Bank	21.20	18.12	16.23	13.63	19.29	18.87	6.37	9.52	12.02	15.64	15.67	17.28	15.75	16.67	15.11	<b>15.43</b>	<b>3.70</b>	<b>23.97</b>
DBS Bank	-3.79	1.62	2.80	6.88	5.70	18.50	16.16	7.08	12.70	9.85	0.06	-7.34	0.19	0.28	-11.64	<b>3.94</b>	<b>8.06</b>	<b>204.71</b>
Duetsche Bank	29.69	6.27	9.60	11.25	9.00	9.03	9.03	11.30	12.87	13.09	8.08	13.48	10.20	8.47	7.64	<b>11.27</b>	<b>5.33</b>	<b>47.27</b>
HSBC	8.06	9.42	12.36	13.73	14.10	11.51	6.67	11.16	13.29	12.74	9.17	9.32	10.26	11.67	10.70	<b>10.94</b>	<b>2.07</b>	<b>18.95</b>
Standard Chartered Bank	21.82	18.60	19.84	23.52	20.38	18.55	18.33	15.77	12.27	15.46	8.10	11.76	4.08	9.25	7.22	<b>15.00</b>	<b>5.70</b>	<b>38.01</b>

Source: Compiled and Calculated using Capital line database and RBI reports

#### **MA4 – Return on Equity**

Return on Equity is a key performance metric to evaluate how well banks are managing their equity to produce higher return. Greater ratio better the banks revenue stream to generate profit. Table 19 shows the Return on equity of select Scheduled Commercial Banks for the period of 2003-2004 to 2017-2018.

In public sector banks, Indian Bank recorded the highest average at 14.72 percent with a standard deviation at 6 percent followed by Andhra Bank at 12.82 percent, Vijaya Bank at 12.35 percent with a standard deviation at 14.48 percent and 6.85 percent respectively. The Central Bank of India reported the lowest average at 3.62 percent with a higher standard deviation at 12.51 percent followed by United Bank of India at 4.93 percent with a standard deviation at 11.55 percent implying high variation in return on equity during the study period. Almost all the public sector banks reported a lower and negative return on equity for a period of three years from 2015-2016 to 2017-2018, due to higher provisioning on NPAs.

Among private sector banks, City Union Bank reported the highest average at 18.66 percent followed by HDFC Bank at 16.51 percent with a lower standard deviation at 3.57 percent and 1.68 percent respectively. It indicates that the banks used their investments appropriately to produce better return. Dhanalaxmi Bank recorded the lowest and negative average in the group at -5.01 percent followed by DCB Bank at -4.90 percent with a higher standard deviation at 18.38 percent and 26.19 percent respectively. It implied that the banks have higher debt and credit growth, which ultimately affect their return. Hence, they have to take quick measures to come over the stressful condition.

In foreign banks, City Bank recorded the highest mean value at 15.43 percent with a standard deviation at 3.70 percent and DBS Bank recorded the lowest mean value at 3.94 percent with a standard deviation at 8.06 percent.

There was decline in Returns on Equity of all the select banks from 2013-2014 and reported a negative return in 2017-2018 except Indian Bank and Vijaya Bank. Most of the private sector banks and foreign Banks recorded a decreasing trend. Among them, Catholic Syrian Bank, Dhanalaxmi Bank, Lakshmi Vilas Bank and DBS Bank reported a negative return in 2017-2018.

Table 20 MA5 CASA Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	41.90	38.69	39.28	37.97	36.04	34.60	34.50	33.48	30.49	30.73	31.35	33.30	35.90	45.37	46.08	<b>36.65</b>	<b>4.74</b>	<b>12.94</b>
Andhra Bank	37.34	36.15	36.31	34.53	33.57	31.41	28.33	28.14	25.67	25.04	24.29	26.70	26.08	29.33	31.05	<b>30.26</b>	<b>4.29</b>	<b>14.17</b>
Bank of Baroda	36.39	36.45	37.94	33.18	31.22	29.59	28.75	27.87	26.28	24.84	25.25	25.88	26.36	32.16	35.81	<b>30.53</b>	<b>4.40</b>	<b>14.42</b>
Bank of India	33.44	34.55	35.02	32.22	30.61	26.76	27.84	25.26	26.02	25.13	22.51	21.85	25.87	31.89	34.11	<b>28.87</b>	<b>4.33</b>	<b>14.99</b>
Bank of Maharashtra	31.79	33.05	42.83	43.16	42.15	35.69	35.57	39.15	40.18	39.61	35.05	35.97	35.69	44.89	47.74	<b>38.83</b>	<b>4.47</b>	<b>11.52</b>
Canara Bank	33.78	33.79	33.29	31.52	31.49	30.05	28.20	27.48	23.69	23.61	23.91	23.36	25.75	30.24	31.83	<b>28.80</b>	<b>3.79</b>	<b>13.16</b>
Central Bank of India	43.27	43.56	46.80	42.09	36.14	33.36	33.62	34.21	32.36	31.78	32.45	33.22	35.48	39.20	42.46	<b>37.33</b>	<b>4.88</b>	<b>13.06</b>
Corporation Bank	33.99	34.59	34.33	34.07	35.01	31.44	27.15	24.82	21.28	21.01	19.78	19.16	22.14	26.47	29.52	<b>27.65</b>	<b>5.80</b>	<b>20.98</b>
Dena Bank	41.54	42.03	43.65	44.51	39.24	34.78	34.92	34.71	33.89	28.27	27.44	27.08	29.37	38.25	40.12	<b>35.99</b>	<b>5.75</b>	<b>15.98</b>
Indian Bank	33.53	34.86	34.82	35.41	32.35	31.63	32.21	30.54	30.28	27.39	26.97	28.60	31.28	37.08	36.95	<b>32.26</b>	<b>3.09</b>	<b>9.59</b>
Indian Overseas Bank	34.37	38.88	39.91	34.86	33.45	30.25	31.18	28.84	25.45	25.65	24.63	24.36	28.72	36.09	36.75	<b>31.56</b>	<b>5.05</b>	<b>16.00</b>
Oriental Bank of Commerce	28.56	28.26	32.65	30.30	27.90	23.74	24.56	24.17	23.79	24.11	23.91	23.71	25.22	30.50	31.68	<b>26.87</b>	<b>3.14</b>	<b>11.70</b>
Punjab and Sind Bank	41.51	0.00	52.13	45.72	36.34	27.76	25.04	23.45	23.36	21.81	20.51	21.21	22.72	27.54	23.65	<b>27.52</b>	<b>12.02</b>	<b>43.69</b>
Punjab National Bank	45.87	46.34	48.99	46.16	42.99	38.83	40.85	37.13	34.32	38.10	37.34	35.39	37.17	41.82	40.99	<b>40.82</b>	<b>4.31</b>	<b>10.57</b>
Syndicate Bank	33.90	37.05	38.18	30.63	30.95	27.60	30.30	30.15	28.81	27.36	25.84	24.45	25.97	29.12	29.48	<b>29.99</b>	<b>3.77</b>	<b>12.56</b>
UCO Bank	32.40	29.23	29.55	29.20	25.66	24.11	24.33	21.81	22.11	31.84	29.28	29.13	29.42	31.40	35.48	<b>28.33</b>	<b>3.81</b>	<b>13.44</b>
Union Bank of India	35.78	32.68	32.36	34.50	34.86	30.07	31.73	30.82	30.43	30.17	28.67	28.47	32.35	34.00	34.09	<b>32.07</b>	<b>2.19</b>	<b>6.84</b>
United Bank of India	44.83	46.58	46.38	42.03	38.57	37.79	38.11	40.78	40.77	39.65	36.98	42.05	41.92	47.33	48.44	<b>42.15</b>	<b>3.62</b>	<b>8.58</b>
Vijaya Bank	30.82	32.56	35.32	30.79	27.30	24.03	23.98	24.74	21.63	20.66	18.15	19.86	23.22	28.12	25.35	<b>25.77</b>	<b>4.80</b>	<b>18.64</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 20 MA5 CASA Ratio of Select Scheduled Commercial Banks

Banks	(in percent)															Mean	SD	CV
	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018			
<b>Private Sector Banks</b>																		
Axis Bank	38.08	37.98	39.98	39.86	45.68	43.15	46.73	41.10	41.54	44.38	45.01	44.78	47.34	51.41	53.76	<b>44.05</b>	<b>4.42</b>	<b>10.04</b>
Catholic Syrian Bank	26.32	27.62	28.88	28.83	27.83	26.03	25.12	22.36	19.32	17.53	17.27	18.00	20.03	24.78	27.03	<b>23.80</b>	<b>4.15</b>	<b>17.44</b>
City Union Bank	20.51	21.85	22.95	24.31	20.92	18.90	21.86	19.52	18.14	16.77	17.79	19.23	20.37	23.37	24.22	<b>20.71</b>	<b>2.28</b>	<b>10.99</b>
Dhanalaxmi Bank	24.87	26.87	28.92	28.37	29.23	24.30	21.86	22.53	19.00	21.83	21.46	23.77	24.71	29.44	30.80	<b>25.20</b>	<b>3.44</b>	<b>13.65</b>
DCB Bank	18.79	22.71	32.06	28.35	24.27	31.01	35.36	34.59	31.74	26.95	24.84	23.28	23.38	24.31	24.33	<b>27.06</b>	<b>4.71</b>	<b>17.40</b>
Federal Bank	23.09	24.52	25.02	25.23	25.09	24.50	26.19	26.86	27.54	27.17	31.25	30.76	32.91	32.82	33.65	<b>27.77</b>	<b>3.42</b>	<b>12.32</b>
HDFC Bank	54.72	60.65	55.45	57.68	54.49	44.37	52.03	52.69	48.40	47.43	44.81	44.03	43.25	48.03	43.50	<b>50.10</b>	<b>5.48</b>	<b>10.94</b>
ICICI Bank	22.95	24.27	22.72	21.78	26.09	28.70	32.41	35.28	34.18	33.93	34.85	36.73	43.05	50.37	51.68	<b>33.27</b>	<b>9.13</b>	<b>27.45</b>
IndusInd Bank	11.17	10.69	12.87	14.92	15.70	19.24	23.67	26.26	26.56	28.73	31.98	33.52	35.19	36.56	43.43	<b>24.70</b>	<b>9.94</b>	<b>40.23</b>
Jammu & Kashmir Bank	30.26	32.00	34.17	37.02	39.16	38.11	40.05	39.95	40.25	38.86	38.73	41.41	44.13	51.70	50.89	<b>39.78</b>	<b>5.67</b>	<b>14.26</b>
Karnataka Bank	20.28	21.60	20.88	23.37	22.14	19.95	22.92	24.57	24.29	24.50	25.03	24.62	26.26	29.04	27.98	<b>23.83</b>	<b>2.57</b>	<b>10.77</b>
Karur Vysya Bank	22.87	24.44	26.91	27.71	25.59	21.89	23.53	23.14	19.07	19.17	20.47	21.95	23.31	27.73	29.14	<b>23.79</b>	<b>3.01</b>	<b>12.66</b>
Kotak Mahindra Bank	59.42	12.45	19.01	27.24	28.43	32.72	30.23	29.24	31.39	28.71	31.40	35.93	38.07	44.00	50.75	<b>33.27</b>	<b>11.21</b>	<b>33.70</b>
Lakshmi Vilas Bank	25.72	25.62	23.08	22.04	21.67	16.78	18.22	18.58	14.52	14.14	13.88	16.33	17.36	19.13	21.06	<b>19.21</b>	<b>3.75</b>	<b>19.52</b>
RBL Bank	26.20	28.47	38.30	37.84	38.34	33.38	36.03	34.54	21.51	19.72	20.43	18.47	18.64	21.98	24.32	<b>27.88</b>	<b>7.51</b>	<b>26.93</b>
South Indian Bank	20.97	24.79	26.41	23.94	24.08	23.80	23.13	21.36	19.53	18.49	20.60	20.51	22.36	23.82	23.80	<b>22.50</b>	<b>2.11</b>	<b>9.37</b>
Tamilnad Mercantile Bank	25.24	26.38	28.42	27.91	24.91	22.01	24.97	24.22	20.63	18.86	19.19	19.64	19.40	23.23	25.32	<b>23.36</b>	<b>3.11</b>	<b>13.31</b>
<b>Foreign Banks</b>																		
Bank of America	50.21	57.63	78.58	63.88	64.70	77.70	55.44	56.26	52.54	58.38	49.25	55.66	47.89	41.30	45.39	<b>56.99</b>	<b>10.32</b>	<b>18.11</b>
Barclays Bank	9.12	14.06	2.01	0.82	5.21	2.94	6.62	7.01	8.47	7.86	5.86	10.03	10.00	9.25	12.64	<b>7.46</b>	<b>3.59</b>	<b>48.12</b>
BNP Paribas	28.54	36.00	30.66	29.36	47.18	36.85	25.06	25.63	39.67	24.69	14.78	16.79	12.30	12.03	14.47	<b>26.27</b>	<b>10.40</b>	<b>39.58</b>
Citi Bank	46.15	56.02	58.70	55.84	49.37	47.48	51.50	55.57	54.52	52.88	48.03	49.39	49.73	58.24	58.17	<b>52.77</b>	<b>4.11</b>	<b>7.78</b>
DBS Bank	5.65	2.60	1.82	2.11	3.13	5.48	8.43	7.57	4.50	6.19	11.05	7.81	8.06	9.39	12.68	<b>6.43</b>	<b>3.16</b>	<b>49.14</b>
Duetsche Bank	59.05	57.97	74.86	74.37	69.45	70.28	54.16	66.41	64.98	47.83	46.56	39.58	42.44	54.05	52.56	<b>58.30</b>	<b>11.04</b>	<b>18.94</b>
HSBC	46.24	50.70	53.80	43.53	46.12	41.30	47.86	50.00	46.75	47.55	37.72	35.81	40.27	41.36	42.39	<b>44.76</b>	<b>4.83</b>	<b>10.80</b>
Standard Chartered Bank	44.83	46.18	49.90	42.68	47.40	43.06	47.49	42.72	40.14	38.36	35.17	34.71	37.02	36.89	40.83	<b>41.83</b>	<b>4.60</b>	<b>11.00</b>

Source: Compiled and Calculated using Capital line database and RBI reports.

### **MA5 – Current Account and Savings Account Ratio**

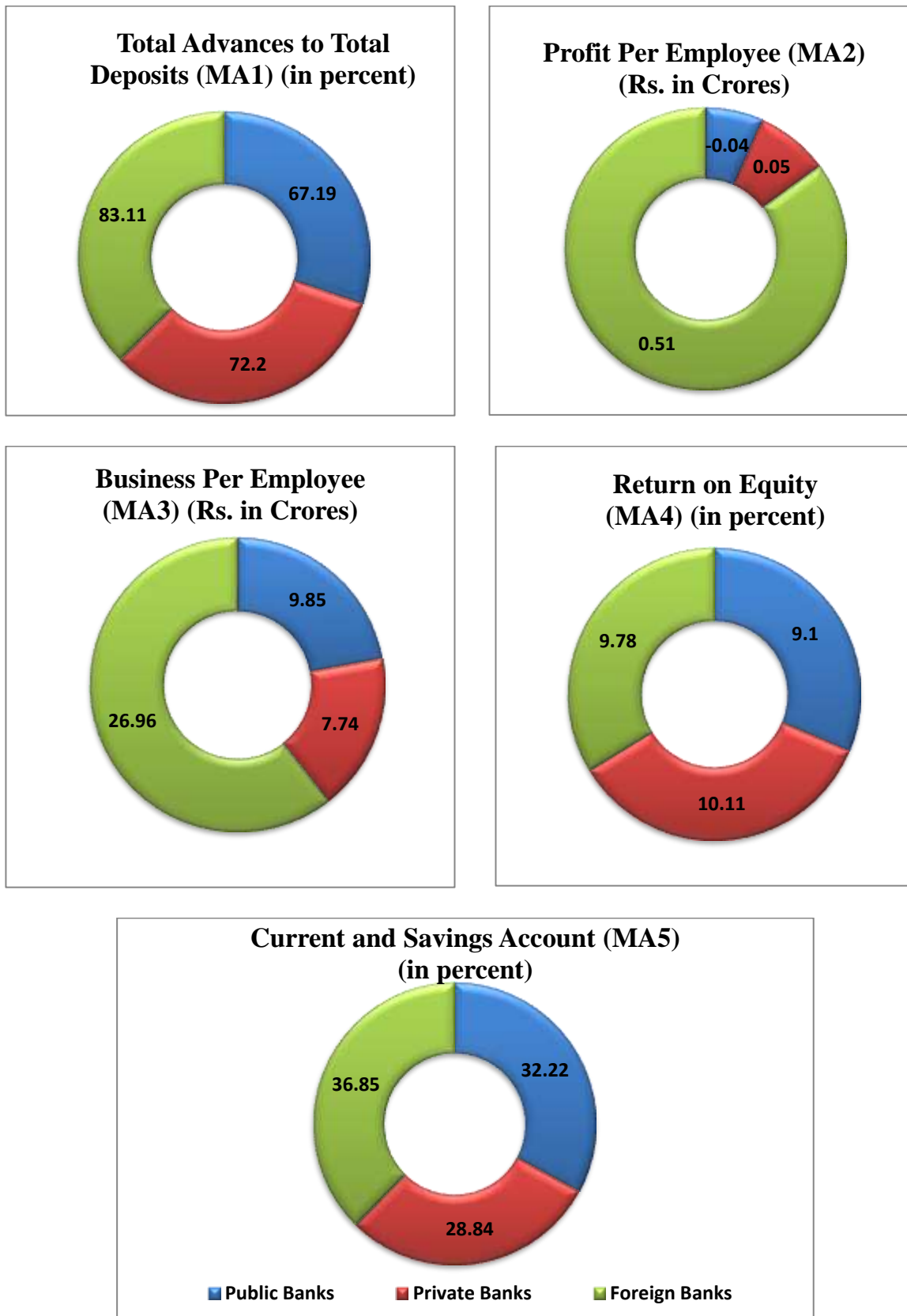
CASA ratio is the proportion of current account and savings account deposits in relation to total deposits. The ratio reflects the probability and capacity of banks in raising funds, which helps to improve their earning efficiency. Higher ratio indicates the banks have more affordable source of funds, which will ultimately enhance the net interest margin of the banks. Table 20 demonstrates the results of CASA ratio of select Scheduled Commercial Banks from 2013-2014 to 2017-2018.

Among the public sector banks, United Bank of India reported the highest average at 42.15 percent followed by Punjab National Bank at 40.82 percent with a standard deviation at 3.62 percent and 4.31 percent respectively. Vijaya Bank reported the lowest portion of CASA to total deposits at 25.77 percent with a standard deviation at 4.80 percent and Oriental Bank of Commerce at 26.87 percent with a standard deviation at 3.14 percent. It implied that the banks depend more on expensive funding source than lower cost of funds, which may affect their profitability and efficiency.

In private sector banks, HDFC Bank registered the highest average at 50.10 percent followed by Axis Bank at 44.05 percent with a standard deviation of 5.48 percent and 4.42 percent respectively. It implied that the banks are efficient in generating lower cost of funds, thereby enhancing their earnings potential. Lakshmi Vilas Bank recorded the lowest average at 19.21 percent with a standard deviation at 3.75 percent followed by City Union Bank at 20.71 percent with a standard deviation at 2.28 percent. The banks depend more on expensive source of funds which they affect their earning capacity.

In foreign banks, Duetshe Bank average was found to be the highest at 58.30 percent with a standard deviation at 11.04 percent. DBS Bank recorded the lowest average at 6.43 percent with a standard deviation at 3.16 percent.

The CASA ratio of all the select banks was found to be fluctuating throughout the study period. The ratio of select public sector banks was steadily declining in 2013-2014 when compared to 2003-2004. The ratio of majority of the private sector banks and foreign banks have increased CASA during the study period.



**Figure 4**  
**Group-wise Management Ability of Scheduled**  
**Commercial Banks**

Figure 4 illustrates group-wise management ability of select scheduled commercial banks. The ratio of Total Advances to Total Deposits (MA1) of foreign banks was observed to be the highest at 83.11 percent, implying the banks ability to convert available deposits into high yielding advances. The private sector banks reported the average at 72.2 percent and public sector banks at 67.19 percent recorded the lowest credit-deposit.

Profit per Employee (MA2) of foreign banks was found to be the highest at Rs. 0.51 Crores, indicating that the contribution of the employees is higher to produce more return. The private sector banks reported an average at Rs. 0.05 Crores. The lowest and negative average was observed in public sector banks at Rs. -0.04 Crores, indicating a very lower proportion of profits earned by the group.

The efficacy of the employee was found to be very effective in foreign banks at Rs. 26.96 Crores followed by public sector banks at Rs. 9.85 Crores. Among the select group, private sector banks held lowest at Rs. 7.74 Crores, thereby suggesting the banks to improve the productivity of the employees to earn more revenue.

The average Return on Equity (MA4) of private sector banks was highest at 10.11 percent, indicating effective use of investments in generating higher revenue for its growth. The ratio of foreign banks reported an average at 9.78 percent followed by public sector banks at 9.10 percent. The ratio of return on equity was declined in public sector and private sector banks, which deteriorated their profitability.

Current Account and Savings Account (MA5) of foreign banks reported the highest average at 36.85 percent, implying the banks have lower cost of funds, which leads to higher profitability. The public sector banks accounted 32.22 percent followed by private sector banks at 28.84 percent, indicating dependency of these banks on expensive source of funds.

To find whether there was any significant mean difference in the management ability variables of select scheduled commercial banks, t-test was applied and the results are presented in Table 21.

$H_{01}$  : There is no significant mean difference in management ability of select scheduled commercial banks in India.

**Table 21**  
**Results of t-test of Management Ability of Select**  
**Scheduled Commercial Banks**

Variables	Mean	Standard Deviation	t-test value	P-value	Significance
Total Advances to Total Deposits (in percent)	72.02	9.90	48.231	.000	Significant
Profit Per Employee (Rs. in Crores)	0.09	0.30	2.052	.046	Significant
Business Per Employee (Rs. in Crores)	12.14	8.38	9.608	.000	Significant
Return on Equity (in percent)	9.61	5.02	12.695	.000	Significant
Current Account and Savings Account Ratio (in percent)	31.75	10.87	19.369	.000	Significant

**Source:** Computed data

It is observed from the Table 21, among the select banks there is a significant mean difference in respect of management ability. The ratio of Total Advances to Total Assets, Business per Employee, Return on Equity, Current Account and Savings Account Ratio were found to be highly significant at one percent level. Profit per Employee alone was significant at 5 percent level. Hence, null hypothesis is rejected. **There is a significant mean difference in the management ability ratios of the select scheduled commercial banks.**

## **EARNINGS EFFICIENCY**

Earnings efficiency is one of the major criteria for evaluating the performance of banks. It takes effort to measure and monitor a bank's ability to earn consistently. It also observes the earning capacity of banks and is highly helpful to overcome the uncertain losses against erosion of capital base. Earning efficiency is measured in terms of

EE1: Operating Profit to Total Assets,

EE2: Net Interest Margin,

EE3: Interest Income to Total Assets,

EE4: Non-Interest Income to Total Assets,

EE5: Burden Ratio,

EE6: Efficiency Ratio, and

EE7: Return on Assets.

Table 22 EE1 Operating Profit to Earning Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	2.73	2.64	2.05	1.84	2.00	2.24	2.44	2.37	2.36	1.82	1.94	2.09	1.86	1.66	1.44	<b>2.10</b>	<b>0.35</b>	<b>16.67</b>
Andhra Bank	3.69	3.52	2.18	2.27	2.12	2.15	2.41	2.60	2.49	2.12	1.82	1.94	2.08	2.04	2.30	<b>2.38</b>	<b>0.52</b>	<b>21.78</b>
Bank of Baroda	3.00	2.45	1.92	1.94	1.96	2.22	2.03	2.22	2.19	1.88	1.61	1.53	1.26	1.63	1.75	<b>1.97</b>	<b>0.41</b>	<b>20.58</b>
Bank of India	2.78	1.62	1.64	1.88	2.31	2.70	1.88	1.78	1.81	1.76	1.60	1.17	0.94	1.48	1.08	<b>1.76</b>	<b>0.51</b>	<b>28.86</b>
Bank of Maharashtra	2.48	1.71	1.13	1.72	1.54	1.53	1.29	1.22	1.94	2.08	1.55	1.71	1.56	1.14	1.39	<b>1.60</b>	<b>0.35</b>	<b>22.19</b>
Canara Bank	3.23	2.48	2.19	2.01	1.73	2.02	2.19	2.15	1.72	1.56	1.51	1.41	1.32	1.58	1.70	<b>1.92</b>	<b>0.48</b>	<b>24.81</b>
Central Bank of India	2.70	2.56	1.73	1.58	1.26	1.13	1.29	1.45	1.36	1.37	1.22	1.25	0.90	1.01	0.86	<b>1.44</b>	<b>0.52</b>	<b>35.77</b>
Corporation Bank	3.53	2.95	2.66	2.50	2.20	2.50	2.33	2.19	2.01	1.87	1.56	1.44	1.41	1.85	1.62	<b>2.17</b>	<b>0.57</b>	<b>26.40</b>
Dena Bank	3.41	1.94	2.40	2.24	2.02	1.75	1.67	2.00	2.06	1.83	0.00	0.00	0.73	1.07	0.97	<b>1.61</b>	<b>0.88</b>	<b>54.81</b>
Indian Bank	2.39	2.45	2.06	2.61	2.70	2.68	2.95	2.94	2.59	1.98	1.67	1.63	1.52	1.91	2.12	<b>2.28</b>	<b>0.46</b>	<b>20.07</b>
Indian Overseas Bank	2.93	2.96	2.70	2.10	2.46	2.53	1.59	2.11	1.94	1.77	1.58	1.27	1.05	1.44	1.47	<b>1.99</b>	<b>0.59</b>	<b>29.60</b>
Oriental Bank of Commerce	4.10	2.54	2.06	1.90	1.48	1.63	1.94	2.23	1.84	1.99	2.04	1.95	1.61	1.73	1.46	<b>2.03</b>	<b>0.62</b>	<b>30.34</b>
Punjab and Sind Bank	0.97	0.00	1.57	2.19	2.12	2.08	1.81	1.73	1.09	1.23	0.93	0.83	1.29	1.24	1.07	<b>1.34</b>	<b>0.57</b>	<b>42.22</b>
Punjab National Bank	3.26	2.25	2.18	2.41	2.25	2.52	2.69	2.72	2.59	2.30	2.19	2.06	1.88	2.08	1.34	<b>2.31</b>	<b>0.42</b>	<b>18.08</b>
Syndicate Bank	2.51	1.88	1.76	1.75	1.52	1.52	1.44	1.99	2.06	1.85	1.63	1.52	1.11	1.40	1.25	<b>1.68</b>	<b>0.34</b>	<b>20.25</b>
UCO Bank	2.08	1.73	1.48	1.40	1.20	1.28	1.47	1.96	1.74	1.78	2.30	2.08	1.61	1.19	0.56	<b>1.59</b>	<b>0.43</b>	<b>26.83</b>
Union Bank of India	2.77	2.52	1.87	2.19	2.34	2.28	2.21	2.18	2.34	2.04	1.59	1.61	1.49	1.73	1.54	<b>2.05</b>	<b>0.38</b>	<b>18.44</b>
United Bank of India	2.49	2.56	2.09	1.97	0.99	1.25	1.22	1.89	2.02	1.97	1.69	1.99	1.44	1.16	0.73	<b>1.70</b>	<b>0.52</b>	<b>30.88</b>
Vijaya Bank	3.96	3.01	2.10	1.95	1.39	1.52	1.60	1.44	1.42	1.15	0.94	0.94	1.12	1.59	1.89	<b>1.73</b>	<b>0.78</b>	<b>45.04</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 22 EE1 Operating Profit to Earning Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	3.49	2.04	2.43	2.10	2.57	2.95	3.48	3.17	2.94	3.05	3.28	3.33	3.38	3.11	2.43	<b>2.92</b>	<b>0.47</b>	<b>16.12</b>
Catholic Syrian Bank	2.98	1.74	0.78	1.20	1.28	1.21	-0.15	0.52	0.87	0.72	0.69	0.32	-0.02	0.92	0.45	<b>0.90</b>	<b>0.73</b>	<b>81.52</b>
City Union Bank	3.83	2.35	2.82	2.87	2.85	2.79	2.54	2.80	2.60	2.56	2.41	2.61	2.81	2.97	3.27	<b>2.81</b>	<b>0.35</b>	<b>12.60</b>
Dhanalaxmi Bank	2.92	0.73	1.02	1.42	1.19	1.85	0.58	0.60	-0.62	0.39	0.04	0.19	0.03	0.73	1.16	<b>0.82</b>	<b>0.82</b>	<b>100.81</b>
DCB Bank	1.16	-0.09	-0.46	0.91	1.37	1.07	0.80	1.22	1.04	1.31	1.62	1.99	2.05	1.95	2.01	<b>1.20</b>	<b>0.71</b>	<b>59.05</b>
Federal Bank	3.30	2.74	2.57	2.89	2.89	3.72	3.13	3.25	2.73	2.35	2.11	2.14	1.69	1.95	1.95	<b>2.63</b>	<b>0.57</b>	<b>21.60</b>
HDFC Bank	2.56	2.56	2.75	2.98	3.13	2.94	3.33	3.12	3.22	3.23	3.39	3.44	3.28	3.32	3.60	<b>3.12</b>	<b>0.30</b>	<b>9.62</b>
ICICI Bank	2.09	2.18	1.98	2.05	2.14	2.33	2.72	2.37	2.41	2.69	3.00	3.29	3.65	3.64	3.18	<b>2.65</b>	<b>0.56</b>	<b>21.01</b>
IndusInd Bank	3.74	2.87	1.14	0.87	0.88	1.45	2.29	2.73	2.69	2.82	3.33	3.28	3.46	3.54	3.50	<b>2.57</b>	<b>0.98</b>	<b>38.04</b>
Jammu & Kashmir Bank	3.60	1.82	2.01	2.30	2.23	2.27	2.54	2.57	2.66	2.92	2.80	2.53	2.29	1.62	1.68	<b>2.39</b>	<b>0.50</b>	<b>20.74</b>
Karnataka Bank	3.29	3.16	2.46	2.31	2.21	2.25	1.04	1.24	1.52	1.63	1.56	1.56	1.57	1.63	2.23	<b>1.98</b>	<b>0.63</b>	<b>32.10</b>
Karur Vysya Bank	3.24	2.74	2.79	2.62	2.41	2.65	2.42	2.47	2.26	2.08	1.67	1.78	2.24	2.59	2.74	<b>2.45</b>	<b>0.39</b>	<b>15.91</b>
Kotak Mahindra Bank	3.86	2.44	2.48	2.16	2.51	2.54	3.97	2.86	2.79	2.87	3.09	3.18	2.31	3.03	3.04	<b>2.88</b>	<b>0.50</b>	<b>17.48</b>
Lakshmi Vilas Bank	2.64	1.40	0.94	1.37	1.45	1.54	1.77	2.48	1.59	1.48	1.63	1.73	1.57	2.04	0.95	<b>1.64</b>	<b>0.45</b>	<b>27.59</b>
RBL Bank	1.79	1.18	1.49	0.99	2.62	2.95	1.84	0.83	2.40	1.79	1.29	1.78	1.84	2.23	2.56	<b>1.84</b>	<b>0.60</b>	<b>32.74</b>
South Indian Bank	2.61	1.82	1.64	2.13	1.80	2.00	1.87	1.88	1.82	1.98	1.75	1.59	1.45	1.77	1.91	<b>1.87</b>	<b>0.26</b>	<b>13.74</b>
Tamilnad Mercantile Bank	3.37	3.23	3.20	3.42	2.79	2.67	2.64	3.01	2.98	3.13	2.43	2.20	2.22	2.38	2.67	<b>2.82</b>	<b>0.39</b>	<b>13.88</b>
<b>Foreign Banks</b>																		
Bank of America	2.08	2.60	4.27	5.74	7.68	7.42	5.34	6.70	5.46	4.19	6.43	4.72	4.41	4.65	3.49	<b>5.01</b>	<b>1.57</b>	<b>31.40</b>
Barclays Bank	16.31	6.20	17.36	7.60	2.85	4.01	1.86	2.96	-0.19	0.79	2.52	3.35	2.85	3.41	2.70	<b>4.97</b>	<b>5.00</b>	<b>100.49</b>
BNP Paribas	1.41	1.99	2.26	3.06	4.28	5.18	4.52	4.02	1.39	3.18	2.26	2.47	2.46	1.92	2.09	<b>2.83</b>	<b>1.13</b>	<b>39.90</b>
Citi Bank	4.42	3.81	4.02	3.98	4.04	5.27	3.66	3.16	2.96	3.34	4.01	4.25	4.19	4.59	4.48	<b>4.01</b>	<b>0.57</b>	<b>14.16</b>
DBS Bank	2.79	1.76	2.11	3.24	1.71	4.74	4.85	1.86	2.17	1.65	1.30	1.11	1.21	1.17	-0.01	<b>2.11</b>	<b>1.28</b>	<b>60.63</b>
Deutsche Bank	8.00	2.40	2.85	2.82	4.71	4.71	4.44	3.94	4.71	5.26	3.04	4.65	3.78	3.35	2.47	<b>4.08</b>	<b>1.38</b>	<b>33.91</b>
HSBC	3.55	3.73	3.77	4.09	4.23	4.39	3.73	3.08	3.50	3.07	2.35	2.40	2.75	3.14	3.25	<b>3.40</b>	<b>0.60</b>	<b>17.57</b>
Standard Chartered Bank	4.95	3.50	4.74	5.25	5.54	5.66	6.14	4.60	3.88	4.04	4.05	4.68	3.68	3.42	2.82	<b>4.46</b>	<b>0.91</b>	<b>20.39</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **EE1 – Operating Profit to Total Assets**

The ratio of Operating Profit to Total Asset is assessed to judge the banks potential in utilizing assets to earn more return. Higher the ratio, higher will be the return from core operations of business. Table 22 shows the ratio of Operating Profit to Total Assets of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, Andhra Bank reported the highest mean value at 2.38 percent with a standard deviation of 0.52 percent followed by Punjab National Bank at 2.31 percent with a standard deviation of 0.42 percent. Higher ratio indicates the efficiency of the banks on their business operations. Punjab and Sind Bank was observed to be the lowest at 1.34 percent with a standard deviation of 0.57 percent followed by Central Bank of India at 1.44 percent with a standard deviation at 0.52 percent, implying the banks have higher operating cost and credit provisioning, which consistently reduced the performance of the banks.

Among private sector banks, HDFC Bank recorded the highest mean value at 3.12 percent with a standard deviation of 0.30 percent followed by Axis Bank at 2.92 percent with a standard deviation at 0.47 percent, indicating the banks have the capacity to yield higher return through effective utilization of assets. Dhanalaxmi Bank was found to be the lowest at 0.82 percent with a standard deviation of 0.82 percent followed by Catholic Syrian Bank at 0.90 percent with a standard deviation of 0.73 percent.

In foreign banks, the mean value of Bank of America was found to be the highest at 5.01 percent with a standard deviation of 1.57 percent followed by Barclays Bank at 4.97 percent with a higher standard deviation of 5 percent. DBS Bank recorded the lowest mean value at 2.11 percent with a standard deviation at 1.28 percent and the bank reported negative return at -0.01 percent in 2017-2018. Thus, the bank has to improve its revenue stream.

The ratio of select banks recorded a fluctuating trend and it begins to decline from 2015-2016 due to increasing poor quality of assets. The ratio of majority of the public sector banks and private sector banks was on decline in 2017-2018 as compared to 2003-2004. The banks have to improve their quality of lending to enhance the core operations of business.

Table 23 EE2 Net Interest Margin of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	3.13	3.02	2.85	2.59	2.02	2.21	2.18	2.66	2.82	2.38	2.41	2.71	2.45	2.22	1.87	<b>2.50</b>	<b>0.36</b>	<b>14.21</b>
Andhra Bank	3.37	3.27	2.87	2.98	2.37	2.37	2.43	2.95	3.02	2.57	2.23	2.45	2.65	2.48	2.62	<b>2.71</b>	<b>0.34</b>	<b>12.39</b>
Bank of Baroda	3.02	3.15	2.80	2.50	2.18	2.26	2.13	2.46	2.31	2.07	1.81	1.84	1.90	1.94	2.16	<b>2.30</b>	<b>0.40</b>	<b>17.39</b>
Bank of India	2.59	2.35	2.34	2.43	2.36	2.43	2.09	2.22	2.16	1.99	1.89	1.83	1.92	1.88	1.72	<b>2.15</b>	<b>0.26</b>	<b>11.97</b>
Bank of Maharashtra	2.38	2.68	3.11	2.80	2.34	2.13	1.82	2.57	2.76	2.59	2.57	2.65	2.41	1.99	2.16	<b>2.46</b>	<b>0.33</b>	<b>13.28</b>
Canara Bank	2.75	2.85	2.69	2.42	1.96	2.15	2.14	2.29	2.05	1.91	1.82	1.76	1.75	1.68	1.96	<b>2.15</b>	<b>0.37</b>	<b>17.14</b>
Central Bank of India	3.33	3.45	3.17	2.65	1.70	1.51	1.39	2.53	2.25	2.14	2.24	2.32	2.31	1.97	1.99	<b>2.33</b>	<b>0.60</b>	<b>25.68</b>
Corporation Bank	3.31	3.33	3.03	2.48	2.17	1.95	1.70	2.05	1.92	1.77	1.70	1.80	1.80	1.79	2.18	<b>2.20</b>	<b>0.55</b>	<b>25.19</b>
Dena Bank	2.70	2.86	2.72	2.72	2.22	2.20	1.91	2.49	2.40	2.10	2.01	1.88	1.85	1.86	2.05	<b>2.26</b>	<b>0.34</b>	<b>15.20</b>
Indian Bank	3.16	3.26	3.17	3.17	2.91	3.10	3.12	3.32	3.12	2.78	2.33	2.31	2.18	2.36	2.48	<b>2.85</b>	<b>0.39</b>	<b>13.71</b>
Indian Overseas Bank	3.38	3.65	3.48	3.11	2.41	2.37	2.42	2.35	2.28	2.15	2.03	1.88	1.96	2.10	2.20	<b>2.52</b>	<b>0.57</b>	<b>22.46</b>
Oriental Bank of Commerce	3.55	2.82	2.71	2.28	1.84	1.77	2.11	2.58	2.37	2.34	2.33	2.21	2.24	1.94	1.93	<b>2.33</b>	<b>0.44</b>	<b>18.78</b>
Punjab and Sind Bank	3.29	3.64	3.18	3.34	2.54	2.45	2.09	2.28	2.06	2.04	1.71	1.72	2.12	2.23	1.96	<b>2.44</b>	<b>0.60</b>	<b>24.59</b>
Punjab National Bank	3.54	3.17	3.21	3.39	2.78	2.85	2.86	3.12	2.93	3.10	2.93	2.74	2.29	2.08	1.95	<b>2.86</b>	<b>0.44</b>	<b>15.33</b>
Syndicate Bank	3.03	3.25	3.08	2.41	1.93	1.96	1.97	2.80	2.79	2.54	2.20	1.82	1.94	2.10	2.02	<b>2.39</b>	<b>0.47</b>	<b>19.68</b>
UCO Bank	2.73	2.58	2.53	2.12	1.66	1.47	1.69	2.35	2.16	2.30	2.53	2.26	1.98	1.65	1.44	<b>2.10</b>	<b>0.41</b>	<b>19.63</b>
Union Bank of India	2.98	2.85	2.66	2.71	2.30	2.36	2.14	2.63	2.59	2.41	2.22	2.21	2.05	1.96	1.90	<b>2.40</b>	<b>0.32</b>	<b>13.21</b>
United Bank of India	3.09	3.16	3.04	2.72	1.67	1.87	1.81	2.41	2.43	2.17	2.05	2.02	1.76	1.37	1.03	<b>2.17</b>	<b>0.61</b>	<b>28.21</b>
Vijaya Bank	3.48	3.36	3.08	2.53	1.48	1.80	2.06	2.37	1.99	1.69	1.52	1.61	1.90	2.26	2.42	<b>2.24</b>	<b>0.63</b>	<b>27.95</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 23 EE2 Net Interest Margin of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	2.39	1.93	2.17	2.00	2.36	2.49	2.77	2.70	2.81	2.84	3.12	3.08	3.12	3.01	2.69	<b>2.63</b>	<b>0.38</b>	<b>14.44</b>
Catholic Syrian Bank	2.84	3.29	3.06	2.97	2.75	2.35	1.61	2.54	2.56	2.52	2.50	2.25	2.07	1.93	2.42	<b>2.51</b>	<b>0.43</b>	<b>16.96</b>
City Union Bank	3.02	3.17	3.39	3.12	2.72	2.62	2.41	2.88	2.72	2.72	3.04	2.90	3.08	3.40	3.58	<b>2.98</b>	<b>0.31</b>	<b>10.43</b>
Dhanalaxmi Bank	2.84	2.76	2.91	2.86	2.45	2.16	1.74	1.86	1.69	2.00	1.91	2.08	2.44	2.69	2.81	<b>2.35</b>	<b>0.43</b>	<b>18.48</b>
DCB Bank	1.77	1.50	2.01	2.26	2.29	3.31	2.30	2.55	2.62	2.52	2.85	3.15	3.24	3.31	3.29	<b>2.60</b>	<b>0.57</b>	<b>21.81</b>
Federal Bank	2.79	2.99	2.90	2.85	2.66	3.38	3.22	3.38	3.22	2.77	2.97	2.86	2.64	2.65	2.59	<b>2.92</b>	<b>0.26</b>	<b>8.75</b>
HDFC Bank	3.16	3.45	3.46	3.80	3.92	4.05	3.77	3.80	3.81	3.95	3.76	3.79	3.72	3.84	3.77	<b>3.74</b>	<b>0.22</b>	<b>5.78</b>
ICICI Bank	1.58	1.69	1.87	1.63	1.82	2.20	2.23	2.22	2.19	2.58	2.76	2.93	2.93	2.80	2.61	<b>2.27</b>	<b>0.46</b>	<b>20.42</b>
IndusInd Bank	2.10	2.66	1.79	1.29	1.29	1.66	2.50	3.01	2.96	3.04	3.32	3.05	3.16	3.39	3.38	<b>2.57</b>	<b>0.73</b>	<b>28.31</b>
Jammu & Kashmir Bank	2.92	2.44	2.51	2.68	2.47	2.61	2.63	3.06	3.05	3.23	3.41	3.49	3.38	3.06	3.20	<b>2.94</b>	<b>0.35</b>	<b>11.88</b>
Karnataka Bank	2.02	2.53	2.45	2.59	2.37	2.21	0.99	1.93	2.01	2.17	2.24	2.25	2.30	2.32	2.64	<b>2.20</b>	<b>0.38</b>	<b>17.28</b>
Karur Vysya Bank	4.18	3.26	3.14	3.13	2.34	2.41	2.57	2.72	2.44	2.48	2.49	2.76	3.02	3.35	3.43	<b>2.91</b>	<b>0.49</b>	<b>16.95</b>
Kotak Mahindra Bank	2.93	3.46	3.73	3.11	4.33	5.29	4.96	4.12	3.83	3.83	4.25	3.98	3.59	3.78	3.60	<b>3.92</b>	<b>0.60</b>	<b>15.32</b>
Lakshmi Vilas Bank	2.18	2.63	2.14	2.04	1.90	1.85	2.37	2.74	2.30	2.22	2.35	2.13	2.25	2.22	1.95	<b>2.22</b>	<b>0.24</b>	<b>10.73</b>
RBL Bank	2.73	3.08	3.07	2.95	3.72	3.72	2.82	2.94	2.59	1.99	1.88	2.05	2.09	2.51	2.86	<b>2.73</b>	<b>0.55</b>	<b>20.10</b>
South Indian Bank	2.17	2.71	2.86	2.69	2.20	2.57	2.23	2.41	2.53	2.57	2.54	2.31	2.38	2.25	2.37	<b>2.45</b>	<b>0.20</b>	<b>8.18</b>
Tamilnad Mercantile Bank	4.24	4.11	4.03	4.17	2.96	2.97	2.76	3.37	3.20	3.63	3.34	2.97	2.96	3.11	3.19	<b>3.40</b>	<b>0.49</b>	<b>14.42</b>
<b>Foreign Banks</b>																		
Bank of America	2.30	2.36	3.35	4.13	4.32	4.62	2.84	4.33	4.26	3.39	3.26	3.45	3.47	3.20	3.17	<b>3.50</b>	<b>0.69</b>	<b>19.64</b>
Barclays Bank	1.67	2.43	2.00	2.13	2.32	5.11	4.63	3.62	3.04	1.67	2.14	3.08	3.23	2.98	2.85	<b>2.86</b>	<b>0.97</b>	<b>33.92</b>
BNP Paribas	2.61	2.90	2.94	3.10	2.71	3.71	4.70	3.79	3.74	2.46	1.82	2.40	1.98	1.97	1.99	<b>2.85</b>	<b>0.80</b>	<b>28.11</b>
Citi Bank	4.57	4.29	4.53	4.05	4.35	4.19	4.25	3.63	3.80	4.03	3.76	4.21	4.18	4.61	4.50	<b>4.20</b>	<b>0.29</b>	<b>6.94</b>
DBS Bank	2.64	1.85	2.96	2.29	2.65	2.50	3.00	2.00	2.07	2.51	1.74	2.24	1.72	1.63	1.38	<b>2.21</b>	<b>0.48</b>	<b>21.64</b>
Duetsche Bank	0.84	0.80	1.95	2.85	3.68	5.18	4.51	4.95	6.32	4.93	3.86	4.14	4.06	3.53	3.39	<b>3.67</b>	<b>1.50</b>	<b>40.82</b>
HSBC	2.73	3.52	3.67	4.18	3.90	3.87	3.59	3.66	3.43	3.80	2.92	2.91	3.08	3.69	3.61	<b>3.50</b>	<b>0.40</b>	<b>11.48</b>
Standard Chartered Bank	4.23	3.72	4.06	4.07	3.74	3.24	4.38	3.76	3.49	4.18	4.11	4.24	4.51	3.70	4.02	<b>3.97</b>	<b>0.33</b>	<b>8.43</b>

Source: Compiled and Calculated using Capital line database and RBI reports

## **EE2 – Net Interest Margin**

Net interest margin is a measure of performance metric to evaluate the banks ability to manage interest rate risk. It must be large enough to cover the burden, provision for loan losses, taxes and security losses of banks to improve the earnings and profitability. Table 23 portrays the Net Interest Margin of select Scheduled Commercial Banks during the study period from 2003-2004 to 2017-2018.

In public sector banks, the mean value of Punjab Nation Bank was found to be the highest at 2.86 percent with a standard deviation at 0.44 percent followed by Indian Bank at 2.85 percent with a standard deviation at 0.39 percent. It showed that the banks have higher earning capacity to yield good return from spread. The UCO Bank reported the lowest mean value at 2.10 percent with a standard deviation at 0.41 percent followed by Bank of India and Canara Bank reported the same mean value at 2.15 percent with a standard deviation at 0.26 percent and 0.37 percent respectively.

Among private sector banks, the average net interest margin of Kotak Mahindra Bank was found to be the highest at 3.92 percent followed by HDFC Bank at 3.74 percent with a standard deviation at 0.60 percent and 0.22 percent respectively. It indicates that the banks have better control over their interest expenditure. Karnataka Bank recorded the lowest mean value at 2.20 percent followed by Lakshmi Vilas Bank at 2.22 percent with a standard deviation at 0.38 percent and 0.24 percent respectively, stating the banks to control their interest expenditure over interest income.

In foreign banks, Citi Bank recorded the highest mean value at 4.20 percent followed by Standard Chartered bank at 3.97 percent with a standard deviation at 0.29 percent and 0.33 percent respectively. Higher ratio implied that the banks have a better control over interest expenditure and banks are more efficient in earning interest income. The lowest mean value was at DBS Bank at 2.21 percent with a standard deviation at 0.48 percent.

The net interest margin of select banks has shown a fluctuating trend during the study period. The ratio of public sector banks started to decline from 2015-2016 and continues to decline till 2017-2018, due to mounting level of non-performing assets. The private sector group and foreign group reported a fluctuating trend during the study period.

Table 24 EE3 Interest Income to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	7.69	7.06	6.81	7.22	7.44	7.54	6.88	7.28	8.48	8.53	8.50	8.66	7.85	7.43	6.46	<b>7.59</b>	<b>0.67</b>	<b>8.81</b>
Andhra Bank	8.24	6.97	6.58	6.97	7.43	7.84	7.05	7.60	9.10	8.82	8.54	8.84	8.79	8.08	7.42	<b>7.89</b>	<b>0.79</b>	<b>9.97</b>
Bank of Baroda	7.22	6.79	6.22	6.29	6.58	6.66	6.00	6.11	6.63	6.43	5.90	6.01	6.56	6.07	6.06	<b>6.37</b>	<b>0.36</b>	<b>5.60</b>
Bank of India	6.83	6.35	6.26	6.30	6.91	7.24	6.50	6.19	7.41	7.05	6.61	7.02	6.83	6.25	6.23	<b>6.67</b>	<b>0.39</b>	<b>5.84</b>
Bank of Maharashtra	6.82	7.20	7.92	6.98	7.14	7.27	6.66	7.28	7.91	8.21	8.76	8.66	8.10	7.55	7.08	<b>7.57</b>	<b>0.63</b>	<b>8.35</b>
Canara Bank	7.10	6.86	6.55	6.84	7.86	7.79	7.07	6.82	8.24	8.26	8.03	7.97	7.90	7.04	6.65	<b>7.40</b>	<b>0.60</b>	<b>8.05</b>
Central Bank of India	7.95	7.56	7.17	6.68	6.33	7.06	6.59	7.24	8.32	8.15	8.42	8.45	8.46	7.38	7.35	<b>7.54</b>	<b>0.69</b>	<b>9.19</b>
Corporation Bank	7.55	6.63	6.48	6.37	6.78	6.98	6.26	6.36	7.95	7.92	8.08	8.63	8.25	7.84	7.93	<b>7.33</b>	<b>0.78</b>	<b>10.65</b>
Dena Bank	7.91	7.18	6.63	6.73	6.92	7.11	6.96	7.11	7.77	7.84	7.99	8.28	7.97	7.85	7.38	<b>7.44</b>	<b>0.51</b>	<b>6.85</b>
Indian Bank	7.55	7.17	7.06	7.47	7.39	8.13	7.61	7.69	8.65	8.54	8.14	8.22	7.97	7.35	6.77	<b>7.71</b>	<b>0.53</b>	<b>6.83</b>
Indian Overseas Bank	7.93	7.78	7.42	7.09	7.60	7.96	7.82	6.77	8.14	8.45	8.25	8.38	8.57	7.98	7.22	<b>7.82</b>	<b>0.50</b>	<b>6.45</b>
Oriental Bank of Commerce	8.05	6.61	6.96	6.97	7.51	7.87	7.44	7.47	8.88	8.80	8.63	8.66	8.39	7.27	7.44	<b>7.80</b>	<b>0.71</b>	<b>9.12</b>
Punjab and Sind Bank	8.52	7.94	6.74	7.72	7.18	7.87	6.94	7.20	8.88	9.12	8.43	8.78	8.52	8.45	6.98	<b>7.95</b>	<b>0.76</b>	<b>9.58</b>
Punjab National Bank	7.60	6.70	6.59	7.10	7.17	7.83	7.22	7.13	7.96	8.75	7.85	7.67	7.10	6.56	6.26	<b>7.30</b>	<b>0.63</b>	<b>8.63</b>
Syndicate Bank	6.53	7.21	6.63	6.77	7.38	7.31	7.23	7.32	8.37	7.96	7.39	7.13	7.53	7.69	6.72	<b>7.28</b>	<b>0.48</b>	<b>6.63</b>
UCO Bank	7.07	6.50	7.04	6.96	7.25	7.25	6.91	6.94	8.08	8.42	7.61	7.86	7.58	7.05	6.48	<b>7.27</b>	<b>0.53</b>	<b>7.30</b>
Union Bank of India	7.74	6.86	6.58	7.18	7.41	7.37	6.80	6.96	8.01	8.04	8.28	8.38	7.92	7.20	6.68	<b>7.43</b>	<b>0.58</b>	<b>7.78</b>
United Bank of India	8.21	7.39	7.07	6.68	6.55	6.95	6.82	7.04	7.80	8.07	8.47	8.27	7.67	6.68	5.76	<b>7.30</b>	<b>0.74</b>	<b>10.21</b>
Vijaya Bank	8.06	7.15	7.33	6.66	6.92	8.40	7.41	7.13	8.34	8.16	7.79	8.60	8.30	7.98	7.08	<b>7.69</b>	<b>0.60</b>	<b>7.81</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 24 EE3 Interest Income to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	6.62	5.09	5.80	6.09	6.39	7.33	6.44	6.24	7.70	7.98	7.99	7.68	7.59	7.40	6.62	<b>6.87</b>	<b>0.85</b>	<b>12.31</b>
Catholic Syrian Bank	8.29	8.28	7.60	7.71	8.07	7.91	7.59	7.81	8.98	9.82	9.92	9.78	9.47	8.23	8.17	<b>8.51</b>	<b>0.82</b>	<b>9.64</b>
City Union Bank	8.65	8.32	7.91	7.46	8.11	8.70	8.28	8.35	9.25	9.53	10.19	9.68	9.26	9.00	8.52	<b>8.75</b>	<b>0.71</b>	<b>8.10</b>
Dhanalaxmi Bank	7.81	7.26	7.36	7.20	7.75	7.24	6.61	6.35	9.49	9.46	8.79	8.94	9.66	8.83	8.25	<b>8.07</b>	<b>1.04</b>	<b>12.89</b>
DCB Bank	6.54	6.51	7.41	6.57	7.40	10.83	7.46	7.22	8.25	8.11	8.72	8.81	8.87	8.63	7.98	<b>7.95</b>	<b>1.11</b>	<b>13.92</b>
Federal Bank	7.88	7.08	6.94	7.16	7.71	8.51	8.38	7.84	9.17	8.65	9.27	8.92	8.17	7.53	7.04	<b>8.02</b>	<b>0.76</b>	<b>9.45</b>
HDFC Bank	6.01	6.01	6.08	7.28	7.59	8.91	7.27	7.18	8.25	8.76	8.37	8.21	8.13	8.02	7.54	<b>7.57</b>	<b>0.92</b>	<b>12.11</b>
ICICI Bank	7.14	5.59	5.68	6.37	7.69	8.19	7.06	6.39	6.85	7.46	7.40	7.57	7.29	6.99	6.23	<b>6.92</b>	<b>0.72</b>	<b>10.37</b>
IndusInd Bank	6.54	7.26	6.74	7.15	8.06	8.36	7.64	7.86	9.29	9.51	9.47	8.65	8.30	8.05	7.79	<b>8.05</b>	<b>0.89</b>	<b>11.07</b>
Jammu & Kashmir Bank	7.17	6.34	6.45	6.63	7.43	7.88	7.18	7.35	8.02	8.55	8.61	9.30	8.53	8.15	7.38	<b>7.67</b>	<b>0.84</b>	<b>10.91</b>
Karnataka Bank	8.02	6.70	6.80	7.74	8.06	8.52	7.30	7.47	8.52	9.05	8.88	9.03	8.80	8.08	7.70	<b>8.05</b>	<b>0.74</b>	<b>9.17</b>
Karur Vysya Bank	9.11	7.49	7.23	7.83	7.59	8.48	8.01	7.85	8.69	9.08	9.91	10.14	9.22	9.08	8.50	<b>8.55</b>	<b>0.85</b>	<b>9.94</b>
Kotak Mahindra Bank	4.95	6.45	7.06	6.62	8.95	10.68	8.70	8.24	9.41	9.61	10.01	9.16	8.52	8.24	7.45	<b>8.27</b>	<b>1.47</b>	<b>17.83</b>
Lakshmi Vilas Bank	7.48	7.35	6.54	7.17	7.74	7.92	8.66	8.01	9.40	9.97	9.61	8.96	8.94	8.06	7.52	<b>8.22</b>	<b>0.96</b>	<b>11.64</b>
RBL Bank	7.99	7.52	7.17	6.65	7.28	8.08	6.91	5.85	6.45	6.78	7.43	7.21	7.00	7.63	7.29	<b>7.15</b>	<b>0.56</b>	<b>7.82</b>
South Indian Bank	7.36	7.48	7.03	7.15	7.56	8.28	7.58	7.45	8.87	8.91	9.12	8.94	8.75	7.86	7.48	<b>7.99</b>	<b>0.71</b>	<b>8.93</b>
Tamilnad Mercantile Bank	10.56	9.13	8.98	9.00	8.58	8.69	8.23	8.51	9.27	10.43	10.24	9.53	9.22	9.14	8.57	<b>9.21</b>	<b>0.69</b>	<b>7.48</b>
<b>Foreign Banks</b>																		
Bank of America	5.48	4.68	5.80	6.81	6.33	6.16	4.22	5.95	6.88	5.94	5.48	5.76	5.73	5.24	5.19	<b>5.71</b>	<b>0.69</b>	<b>12.10</b>
Barclays Bank	2.19	3.35	3.50	4.40	4.83	9.84	7.99	7.18	5.84	4.76	4.59	5.29	5.79	5.68	4.56	<b>5.32</b>	<b>1.85</b>	<b>34.70</b>
BNP Paribas	5.93	5.98	5.95	7.20	6.06	6.48	6.22	6.04	7.18	4.58	4.25	5.85	5.33	5.52	4.83	<b>5.83</b>	<b>0.81</b>	<b>13.91</b>
Citi Bank	7.69	6.51	6.74	6.60	7.11	6.50	6.36	5.62	6.05	6.94	6.33	7.35	6.93	7.03	6.38	<b>6.68</b>	<b>0.50</b>	<b>7.56</b>
DBS Bank	4.86	2.45	4.86	6.28	6.98	6.44	4.69	4.49	4.94	6.29	5.63	6.49	4.77	5.79	5.30	<b>5.35</b>	<b>1.09</b>	<b>20.31</b>
Duetsche Bank	3.50	3.63	5.01	5.49	5.85	7.54	5.57	6.56	8.38	6.68	6.15	7.19	7.15	6.57	6.05	<b>6.09</b>	<b>1.29</b>	<b>21.24</b>
HSBC	5.58	5.83	5.88	6.39	6.56	6.69	5.71	5.70	5.73	6.62	5.66	6.08	6.01	6.74	6.07	<b>6.08</b>	<b>0.40</b>	<b>6.52</b>
Standard Chartered Bank	7.35	6.70	6.65	6.87	6.64	5.80	6.39	5.98	6.53	7.58	7.61	7.70	7.71	6.63	6.90	<b>6.87</b>	<b>0.59</b>	<b>8.55</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **EE3 – Interest Income to Total Assets**

Interest Income is a primary source of revenue for the banks. The ratio of interest income to total asset measures the capability of banks in generating income from lending process. Table 24 shows the ratio of Interest Income to Total Assets of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the interest income to total assets of Punjab and Sind Bank reported the highest mean value at 7.95 percent followed by Andhra bank at 7.89 percent with a highest standard deviation of 0.76 percent and 0.79 percent respectively. It indicates the ability of the banks to earn profits out of their lending practices. Bank of Baroda reported the lowest mean value of 6.37 percent with a standard deviation of 0.36 percent followed by Bank of India at 6.67 percent with a standard deviation of 0.39 percent.

Among private sector banks, Tamilnad Mercantile Bank took the first position by reporting the highest mean value at 9.21 percent with a standard deviation at 0.69 percent followed by City Union Bank at 8.75 percent with a standard deviation at 0.71 percent. Higher ratio indicates that the banks have higher earning potential to generate interest income. Axis bank was found to be the lowest at 6.87 percent with a standard deviation at 0.85 percent followed by ICICI Bank at 6.92 percent with a standard deviation at 0.72 percent.

In foreign banks, Standard Chartered Bank reported the highest mean value at 6.87 percent with a standard deviation at 0.59 percent. Barclays Bank recorded the lowest mean value at 5.32 percent with a standard deviation at 1.85 percent followed by DBS Bank at 5.35 percent with a standard deviation at 1.09 percent. The banks have to improve quality of advances to enhance their interest income.

The ratio of all the select scheduled commercial banks recorded a fluctuating trend during the study period. Interest Income to Total Assets of public sector banks started to decline from 2015-2016 due to higher credit provision and poor quality of advances. The ratio of select private sector banks and foreign banks was on decline in 2017-2018 as against 2016-2017.

Table 25 EE4 Non-Interest Income to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	2.37	1.45	1.12	0.87	1.24	1.29	1.37	0.91	0.71	0.72	0.98	0.88	0.79	1.11	1.06	<b>1.12</b>	<b>0.40</b>	<b>35.47</b>
Andhra Bank	2.54	2.30	1.14	1.23	1.14	1.14	1.07	0.82	0.69	0.72	0.80	0.81	0.78	1.03	0.98	<b>1.15</b>	<b>0.53</b>	<b>46.19</b>
Bank of Baroda	2.26	1.42	1.23	1.00	1.16	1.23	1.01	0.78	0.77	0.66	0.68	0.62	0.74	0.97	0.92	<b>1.03</b>	<b>0.40</b>	<b>39.06</b>
Bank of India	2.11	1.22	1.05	1.10	1.18	1.35	0.95	0.75	0.86	0.83	0.75	0.68	0.60	1.08	0.94	<b>1.03</b>	<b>0.35</b>	<b>34.40</b>
Bank of Maharashtra	1.62	1.34	0.99	1.11	0.82	0.87	0.83	0.69	0.70	0.78	0.65	0.69	0.63	0.94	0.96	<b>0.91</b>	<b>0.26</b>	<b>29.08</b>
Canara Bank	2.09	1.60	1.10	0.91	1.28	1.11	1.08	0.84	0.78	0.76	0.80	0.83	0.88	1.29	1.12	<b>1.10</b>	<b>0.35</b>	<b>31.91</b>
Central Bank of India	1.56	1.36	0.81	0.78	0.75	0.72	0.95	0.60	0.61	0.62	0.66	0.61	0.63	0.86	0.80	<b>0.82</b>	<b>0.27</b>	<b>33.08</b>
Corporation Bank	1.78	1.66	1.42	1.20	1.07	1.27	1.34	0.87	0.91	0.83	0.74	0.65	0.74	1.24	1.04	<b>1.12</b>	<b>0.33</b>	<b>29.40</b>
Dena Bank	2.82	1.30	1.74	1.48	1.26	1.13	1.02	0.75	0.67	0.58	0.73	0.56	0.54	0.96	0.96	<b>1.10</b>	<b>0.57</b>	<b>52.28</b>
Indian Bank	2.21	1.43	1.28	1.47	1.64	1.31	1.30	0.97	0.87	0.79	0.73	0.71	0.87	1.01	0.95	<b>1.17</b>	<b>0.40</b>	<b>33.81</b>
Indian Overseas Bank	1.74	1.57	1.23	1.09	1.06	1.41	0.87	0.69	0.77	0.81	0.79	0.75	0.92	1.36	1.51	<b>1.10</b>	<b>0.33</b>	<b>30.19</b>
Oriental Bank of Commerce	1.81	0.97	1.06	1.10	0.90	0.96	0.87	0.59	0.70	0.82	0.88	0.92	0.74	1.09	1.19	<b>0.97</b>	<b>0.27</b>	<b>27.88</b>
Punjab and Sind Bank	1.71	1.63	0.98	1.31	1.02	0.93	0.73	0.64	0.57	0.49	0.45	0.44	0.47	0.60	0.51	<b>0.83</b>	<b>0.41</b>	<b>49.35</b>
Punjab National Bank	2.01	1.73	0.88	0.64	1.00	1.18	1.22	0.95	0.92	0.88	0.83	0.98	0.90	1.24	1.16	<b>1.10</b>	<b>0.34</b>	<b>31.19</b>
Syndicate Bank	1.74	1.13	0.97	0.73	0.88	0.70	0.84	0.58	0.59	0.55	0.53	0.70	0.81	1.16	0.87	<b>0.85</b>	<b>0.30</b>	<b>35.69</b>
UCO Bank	1.47	0.97	0.76	0.81	0.87	0.93	0.70	0.56	0.53	0.48	0.55	0.81	0.65	0.91	0.52	<b>0.77</b>	<b>0.24</b>	<b>31.82</b>
Union Bank of India	1.48	1.06	0.92	1.19	1.09	0.94	1.01	0.86	0.93	0.82	0.80	0.92	0.89	1.09	1.02	<b>1.00</b>	<b>0.17</b>	<b>16.53</b>
United Bank of India	2.07	1.64	1.34	0.82	0.86	0.89	0.73	0.71	0.72	0.93	0.96	1.42	1.13	1.55	1.53	<b>1.15</b>	<b>0.40</b>	<b>34.75</b>
Vijaya Bank	2.35	1.59	1.18	0.90	0.96	1.22	0.97	0.65	0.55	0.55	0.52	0.62	0.60	1.06	0.90	<b>0.98</b>	<b>0.47</b>	<b>48.46</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 25 EE4 Non-Interest Income to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	2.24	1.15	1.47	1.38	1.65	2.02	2.18	1.91	1.90	1.92	1.93	1.81	1.74	1.94	1.59	<b>1.79</b>	<b>0.29</b>	<b>16.11</b>
Catholic Syrian Bank	2.89	1.38	1.03	0.82	1.02	1.47	0.97	0.76	0.71	0.70	0.77	0.81	0.67	1.73	0.79	<b>1.10</b>	<b>0.57</b>	<b>51.44</b>
City Union Bank	2.08	1.14	1.07	1.12	1.23	1.34	1.24	1.08	1.13	1.19	1.12	1.49	1.29	1.37	1.33	<b>1.28</b>	<b>0.24</b>	<b>19.03</b>
Dhanalaxmi Bank	2.41	0.82	1.00	0.97	1.04	1.44	1.13	1.03	0.98	0.83	0.50	0.59	0.62	0.90	0.83	<b>1.01</b>	<b>0.44</b>	<b>43.41</b>
DCB Bank	1.85	2.07	2.23	2.28	2.29	2.06	1.75	1.51	1.16	1.04	1.07	1.03	1.15	1.03	1.03	<b>1.57</b>	<b>0.50</b>	<b>32.13</b>
Federal Bank	1.98	1.32	1.13	1.20	1.21	1.32	1.21	1.00	0.88	0.93	0.93	1.06	0.85	0.94	0.84	<b>1.12</b>	<b>0.28</b>	<b>24.98</b>
HDFC Bank	1.16	1.42	1.65	1.75	1.71	1.89	1.79	1.56	1.71	1.71	1.61	1.52	1.45	1.42	1.43	<b>1.59</b>	<b>0.18</b>	<b>11.47</b>
ICICI Bank	2.43	2.10	2.01	2.02	2.22	2.15	2.06	1.63	1.53	1.55	1.75	1.88	2.12	2.52	1.97	<b>2.00</b>	<b>0.28</b>	<b>14.06</b>
IndusInd Bank	2.35	1.65	1.31	1.51	1.28	1.77	1.56	1.56	1.75	1.86	2.17	2.28	2.30	2.33	2.14	<b>1.85</b>	<b>0.37</b>	<b>19.77</b>
Jammu & Kashmir Bank	1.42	0.39	0.49	0.64	0.80	0.69	0.98	0.72	0.55	0.67	0.50	0.78	0.63	0.60	0.55	<b>0.70</b>	<b>0.24</b>	<b>34.45</b>
Karnataka Bank	2.56	1.77	1.18	1.14	1.26	1.41	1.40	0.92	0.95	0.96	1.07	0.97	0.96	1.26	1.35	<b>1.28</b>	<b>0.41</b>	<b>32.07</b>
Karur Vysya Bank	1.13	1.44	1.59	1.32	1.32	1.56	1.13	0.94	0.93	0.97	1.09	1.11	1.20	1.26	1.34	<b>1.22</b>	<b>0.20</b>	<b>16.46</b>
Kotak Mahindra Bank	1.69	2.20	2.89	1.81	2.12	2.00	1.68	1.53	1.49	1.39	1.60	1.91	1.36	1.62	1.53	<b>1.79</b>	<b>0.38</b>	<b>21.45</b>
Lakshmi Vilas Bank	2.60	1.25	1.36	1.11	1.34	1.32	0.99	1.03	0.98	1.12	0.99	1.15	1.06	1.42	0.86	<b>1.24</b>	<b>0.40</b>	<b>32.10</b>
RBL Bank	1.46	0.76	0.69	0.42	0.60	0.92	0.63	0.57	0.93	0.98	1.43	1.49	1.25	1.55	1.73	<b>1.03</b>	<b>0.41</b>	<b>39.69</b>
South Indian Bank	2.54	1.14	0.84	0.89	0.86	0.82	0.82	0.60	0.61	0.67	0.67	0.84	0.81	0.96	1.01	<b>0.94</b>	<b>0.45</b>	<b>48.02</b>
Tamilnad Mercantile Bank	1.41	1.21	1.35	1.31	1.47	1.25	1.27	1.17	1.14	1.05	0.83	0.98	0.90	1.16	1.33	<b>1.19</b>	<b>0.18</b>	<b>14.98</b>
<b>Foreign Banks</b>																		
Bank of America	1.59	2.49	3.80	4.07	4.58	3.99	3.66	4.77	3.14	2.15	3.31	2.47	1.63	2.74	1.77	<b>3.08</b>	<b>1.02</b>	<b>33.08</b>
Barclays Bank	9.29	13.57	12.47	8.32	4.39	2.85	0.72	1.95	-0.40	0.81	1.89	0.99	0.56	1.95	1.08	<b>4.03</b>	<b>4.43</b>	<b>109.89</b>
BNP Paribas	2.02	3.25	2.59	4.42	3.52	2.47	2.07	2.41	0.62	1.49	0.91	1.18	1.20	0.73	0.80	<b>1.98</b>	<b>1.10</b>	<b>55.67</b>
Citi Bank	3.02	3.12	2.59	2.23	2.95	3.51	1.67	1.75	1.08	1.55	2.07	2.40	2.05	2.51	2.09	<b>2.31</b>	<b>0.64</b>	<b>27.68</b>
DBS Bank	0.91	0.35	0.30	1.56	0.52	2.60	0.83	0.40	0.85	0.32	0.56	0.63	0.64	1.40	0.63	<b>0.83</b>	<b>0.59</b>	<b>70.94</b>
Duetsche Bank	7.24	3.93	4.79	3.78	4.13	4.09	2.88	3.42	2.63	2.31	0.84	2.23	1.38	1.47	1.24	<b>3.09</b>	<b>1.62</b>	<b>52.24</b>
HSBC	2.78	2.68	3.14	2.71	2.86	2.85	2.36	1.96	2.01	1.62	1.15	1.52	1.30	1.74	1.18	<b>2.12</b>	<b>0.66</b>	<b>31.14</b>
Standard Chartered Bank	2.04	2.10	2.50	2.98	3.30	3.31	3.20	2.32	2.46	2.34	2.40	2.51	1.53	1.81	1.32	<b>2.41</b>	<b>0.58</b>	<b>24.27</b>

Source: Compiled and Calculated using Capital line database and RBI reports

#### **EE4 – Non Interest Income to Total Assets**

The main source of income to the banks is interest income. The non-interest income is an additional source of revenue to the banks, which they can earn income to increase the profitability of banking business. It is also called as fee-based income. The Non-Interest Income to Total Assets of select Scheduled Commercial Banks from 2003-2004 to 2017-2018 is portrayed in Table 25.

In public sector banks, Indian Bank registered the highest mean value at 1.17 percent with a standard deviation of 0.40 percent followed by Andhra Bank at 1.15 percent with a standard deviation of 0.53 percent. It implied that the banks earned additional income through their improved agency service. UCO Bank was found to be the lowest at 0.77 percent and Central Bank of India at 0.82 percent with a lower standard deviation of 0.24 percent and 0.27 percent respectively. The banks recorded lower ratio due to decrease in income from treasury related activities.

Among private sector banks, the mean value of ICICI Bank was found to be the highest at 2 percent with a standard deviation of 0.28 percent followed by IndusInd Bank at 1.85 percent with a standard deviation of 0.37 percent. Higher ratio implied that the banks have greater fee based income by adopting new technology and innovative products to customers. Jammu and Kashmir Bank reported the lowest mean value at 0.70 percent followed by South Indian Bank at 0.94 percent with a standard deviation at 0.24 percent and 0.45 percent respectively.

In foreign banks, the non-interest income to total assets of Barclays Bank was found to be the highest at 4.03 percent with a standard deviation at 4.43 percent. DBS Bank reported the lowest mean value at 0.83 percent with a lower standard deviation of 0.59 percent, implying the ratio were clustered among the mean during the study period..

The non-interest income to total assets ratio of select banks declined in 2017-2018 as against 2003-2004. It was observed that the public sector banks fee based income was declined. The ratio of most of the private sector banks and foreign banks decreased during the study period.

Table 26 EE5 Burden Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	2.02	1.12	0.73	0.49	0.89	0.96	1.06	0.60	0.43	0.43	0.65	0.51	0.41	0.68	0.68	<b>0.78</b>	<b>0.40</b>	<b>53.12</b>
Andhra Bank	2.12	1.84	0.67	0.78	0.75	0.75	0.74	0.52	0.40	0.43	0.48	0.50	0.45	0.71	0.66	<b>0.79</b>	<b>0.49</b>	<b>64.25</b>
Bank of Baroda	1.88	1.05	0.88	0.69	0.86	0.94	0.72	0.52	0.51	0.42	0.41	0.33	0.40	0.61	0.53	<b>0.72</b>	<b>0.37</b>	<b>54.11</b>
Bank of India	1.77	0.90	0.76	0.81	0.94	1.12	0.73	0.55	0.64	0.62	0.54	0.46	0.37	0.84	0.68	<b>0.78</b>	<b>0.33</b>	<b>43.08</b>
Bank of Maharashtra	1.30	0.96	0.53	0.72	0.43	0.50	0.50	0.34	0.38	0.49	0.33	0.37	0.32	0.61	0.61	<b>0.56</b>	<b>0.26</b>	<b>47.43</b>
Canara Bank	1.76	1.25	0.76	0.59	0.92	0.80	0.79	0.58	0.52	0.51	0.54	0.56	0.58	0.98	0.81	<b>0.80</b>	<b>0.33</b>	<b>42.40</b>
Central Bank of India	1.27	1.06	0.50	0.49	0.52	0.49	0.74	0.31	0.33	0.39	0.40	0.33	0.33	0.54	0.46	<b>0.54</b>	<b>0.27</b>	<b>50.89</b>
Corporation Bank	1.34	1.21	0.99	0.84	0.74	0.98	1.07	0.64	0.68	0.60	0.49	0.39	0.45	0.95	0.68	<b>0.80</b>	<b>0.27</b>	<b>35.12</b>
Dena Bank	2.39	0.82	1.26	1.03	0.87	0.77	0.68	0.43	0.38	0.33	0.44	0.24	0.20	0.60	0.57	<b>0.73</b>	<b>0.53</b>	<b>74.66</b>
Indian Bank	1.88	1.07	0.92	1.12	1.32	1.02	1.02	0.71	0.60	0.53	0.48	0.43	0.58	0.69	0.66	<b>0.87</b>	<b>0.37</b>	<b>44.60</b>
Indian Overseas Bank	1.47	1.26	0.89	0.78	0.76	1.09	0.55	0.43	0.49	0.55	0.52	0.47	0.61	1.01	1.18	<b>0.80</b>	<b>0.32</b>	<b>41.22</b>
Oriental Bank of Commerce	1.45	0.60	0.64	0.75	0.57	0.64	0.57	0.29	0.40	0.53	0.58	0.62	0.42	0.79	0.85	<b>0.65</b>	<b>0.26</b>	<b>41.23</b>
Punjab and Sind Bank	1.21	1.63	0.60	0.97	0.76	0.71	0.53	0.44	0.35	0.26	0.23	0.19	0.21	0.32	0.27	<b>0.58</b>	<b>0.40</b>	<b>72.36</b>
Punjab National Bank	1.70	1.43	0.56	0.34	0.72	0.91	0.95	0.71	0.69	0.63	0.58	0.72	0.63	0.97	0.88	<b>0.83</b>	<b>0.33</b>	<b>41.44</b>
Syndicate Bank	1.40	0.82	0.62	0.44	0.60	0.40	0.57	0.33	0.33	0.31	0.31	0.47	0.57	0.88	0.58	<b>0.58</b>	<b>0.28</b>	<b>49.93</b>
UCO Bank	1.24	0.73	0.51	0.57	0.63	0.71	0.49	0.37	0.33	0.27	0.36	0.60	0.45	0.68	0.26	<b>0.55</b>	<b>0.24</b>	<b>45.27</b>
Union Bank of India	1.16	0.73	0.61	0.89	0.77	0.59	0.71	0.58	0.66	0.55	0.52	0.64	0.61	0.81	0.74	<b>0.70</b>	<b>0.16</b>	<b>23.34</b>
United Bank of India	1.76	1.35	1.05	0.55	0.61	0.63	0.48	0.46	0.48	0.68	0.69	1.13	0.84	1.26	1.23	<b>0.88</b>	<b>0.38</b>	<b>44.84</b>
Vijaya Bank	2.04	1.27	0.84	0.61	0.71	0.97	0.72	0.41	0.32	0.34	0.31	0.38	0.35	0.81	0.65	<b>0.71</b>	<b>0.44</b>	<b>64.41</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 26 EE5 Burden Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	1.51	0.49	0.79	0.72	0.96	1.34	1.49	1.23	1.24	1.30	1.34	1.28	1.31	1.46	1.15	<b>1.17</b>	<b>0.29</b>	<b>25.65</b>
Catholic Syrian Bank	2.45	0.86	0.50	0.30	0.47	0.88	0.41	0.28	0.27	0.24	0.30	0.31	0.17	1.22	0.23	<b>0.59</b>	<b>0.57</b>	<b>100.01</b>
City Union Bank	1.74	0.77	0.61	0.65	0.78	0.90	0.80	0.59	0.56	0.59	0.39	0.80	0.61	0.66	0.62	<b>0.74</b>	<b>0.30</b>	<b>41.44</b>
Dhanalaxmi Bank	1.90	0.22	0.28	0.36	0.50	0.99	0.65	0.46	0.35	0.29	-0.01	0.03	-0.04	0.27	0.26	<b>0.43</b>	<b>0.47</b>	<b>110.92</b>
DCB Bank	1.28	1.21	1.23	1.46	1.56	1.03	0.94	0.82	0.49	0.48	0.53	0.50	0.63	0.51	0.53	<b>0.88</b>	<b>0.38</b>	<b>44.34</b>
Federal Bank	1.63	0.90	0.75	0.86	0.86	0.96	0.82	0.61	0.48	0.52	0.46	0.56	0.41	0.53	0.43	<b>0.72</b>	<b>0.30</b>	<b>43.66</b>
HDFC Bank	0.37	0.58	0.63	0.81	0.86	1.03	0.99	0.82	1.02	1.00	1.01	0.95	0.91	0.91	0.98	<b>0.86</b>	<b>0.19</b>	<b>22.40</b>
ICICI Bank	1.89	1.60	1.56	1.58	1.74	1.64	1.57	1.19	1.14	1.14	1.33	1.46	1.69	2.05	1.49	<b>1.54</b>	<b>0.25</b>	<b>17.01</b>
IndusInd Bank	1.82	1.03	0.46	0.75	0.50	0.91	0.77	0.80	0.97	1.02	1.33	1.45	1.74	1.55	1.42	<b>1.10</b>	<b>0.41</b>	<b>38.94</b>
Jammu & Kashmir Bank	1.21	0.17	0.27	0.41	0.57	0.47	0.76	0.53	0.36	0.48	0.29	0.55	0.39	0.34	0.28	<b>0.47</b>	<b>0.24</b>	<b>53.30</b>
Karnataka Bank	2.28	1.49	0.86	0.75	0.88	1.00	1.02	0.53	0.62	0.63	0.73	0.60	0.56	0.87	0.95	<b>0.92</b>	<b>0.43</b>	<b>48.92</b>
Karur Vysya Bank	0.70	0.93	1.18	0.87	0.94	1.14	0.74	0.56	0.57	0.57	0.68	0.65	0.71	0.77	0.82	<b>0.79</b>	<b>0.19</b>	<b>24.37</b>
Kotak Mahindra Bank	0.66	0.55	1.14	0.48	0.55	0.25	0.43	0.36	0.40	0.34	0.42	0.64	0.36	0.66	0.60	<b>0.52</b>	<b>0.21</b>	<b>40.94</b>
Lakshmi Vilas Bank	2.20	0.85	1.00	0.77	0.97	0.98	0.63	0.67	0.59	0.70	0.62	0.77	0.65	1.06	0.48	<b>0.86</b>	<b>0.39</b>	<b>47.22</b>
RBL Bank	0.94	0.18	0.14	-0.07	0.18	0.48	0.22	0.21	0.56	0.64	1.06	1.07	0.90	1.19	1.36	<b>0.60</b>	<b>0.44</b>	<b>74.90</b>
South Indian Bank	2.14	0.72	0.41	0.51	0.50	0.47	0.48	0.30	0.27	0.34	0.30	0.47	0.45	0.63	0.68	<b>0.58</b>	<b>0.44</b>	<b>78.41</b>
Tamilnad Mercantile Bank	0.89	0.75	0.85	0.85	1.04	0.85	0.93	0.83	0.78	0.64	0.44	0.55	0.50	0.74	0.92	<b>0.77</b>	<b>0.16</b>	<b>22.01</b>
<b>Foreign Banks</b>																		
Bank of America	1.21	2.14	3.24	3.45	4.26	3.70	3.41	4.44	2.77	1.81	3.01	2.15	1.30	2.44	1.51	<b>2.72</b>	<b>0.97</b>	<b>37.97</b>
Barclays Bank	9.00	13.07	11.94	7.29	1.95	1.34	0.07	1.26	-0.92	0.49	1.64	0.78	0.34	1.75	0.89	<b>3.39</b>	<b>4.26</b>	<b>134.27</b>
BNP Paribas	1.48	2.54	2.00	3.78	3.01	2.01	1.23	1.72	-0.27	0.89	0.55	0.75	0.84	0.38	0.49	<b>1.43</b>	<b>1.02</b>	<b>76.80</b>
Citi Bank	1.88	1.79	1.50	1.33	2.23	2.95	1.11	1.18	0.46	0.88	1.49	1.77	1.43	1.86	1.50	<b>1.56</b>	<b>0.55</b>	<b>37.49</b>
DBS Bank	0.62	0.07	-0.04	1.24	0.28	2.19	0.46	0.06	0.38	-0.20	0.12	-0.06	0.20	0.69	-0.19	<b>0.39</b>	<b>0.59</b>	<b>161.92</b>
Duetsche Bank	6.85	3.47	3.02	2.31	2.52	2.23	1.85	2.22	1.61	1.85	0.49	1.64	0.81	1.05	0.77	<b>2.18</b>	<b>1.44</b>	<b>70.56</b>
HSBC	2.23	2.07	2.46	2.06	2.32	2.40	1.89	1.46	1.60	1.25	0.81	1.16	0.97	1.36	0.86	<b>1.66</b>	<b>0.54</b>	<b>35.03</b>
Standard Chartered Bank	1.29	1.31	1.34	2.09	1.79	1.95	1.93	1.24	1.50	1.23	1.35	1.63	0.67	1.01	0.49	<b>1.39</b>	<b>0.42</b>	<b>32.53</b>

Source: Compiled and Calculated using Capital line database and RBI rep

### **EE5 – Burden Ratio**

Burden ratio is a difference between non-interest expenses as percentage of total assets and non-interest income as percentage of total assets. It is to measure how banks are controlling their non-interest expenses and neutralizing the burden out of the availability of spread. Higher the ratio lower the burden to the banks. The results of Burden Ratio of select Scheduled Commercial Banks are presented in Table 26.

In public sector banks, the United Bank of India recorded highest mean value at 0.88 percent followed by Indian bank at 0.87 percent with a standard deviation at 0.38 percent and 0.37 percent respectively. Central Bank of India registered the lowest mean value at 0.54 percent followed by UCO Bank at 0.55 percent with a standard deviation at 0.27 percent and 0.24 percent respectively.

In private sector banks, ICICI Bank recorded the lowest burden by reporting the highest mean value at 1.54 percent followed by Axis Bank at 1.17 percent with a standard deviation at 0.25 percent and 0.29 percent respectively. It implied that the banks are more efficient in controlling non-interest expenditure to increase the potential growth. Dhanalaxmi Bank reported the highest burden by recording the lowest mean value at 0.43 percent with a standard deviation at 0.47 percent.

In foreign banks, Barclays Bank recorded the lowest burden at 3.39 percent, whereas DBS bank has recorded the highest burden at 0.39 percent with a standard deviation at 4.26 percent and 0.59 percent respectively.

The ratio of burden of select public sector banks and foreign banks was declined in 2017-2018 compared to 2003-2004, implying the burden was increased during the study period. The public sector banks burden increased massively, whereas, majority of the private sector banks have controlled their burden out of profitability and by reducing their overhead cost.

Table 27 EE6 Efficiency Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	6.23	7.43	9.85	10.92	10.72	9.24	8.58	8.49	8.06	9.38	9.86	10.22	11.68	12.98	12.99	<b>9.78</b>	<b>1.85</b>	<b>18.89</b>
Andhra Bank	7.19	8.25	11.85	10.76	11.10	11.03	9.34	8.09	7.84	8.79	10.33	9.50	9.68	9.36	8.96	<b>9.47</b>	<b>1.30</b>	<b>13.70</b>
Bank of Baroda	7.33	8.00	8.69	8.93	9.02	8.36	9.22	8.04	8.16	8.73	10.65	11.46	13.06	12.47	12.90	<b>9.67</b>	<b>1.86</b>	<b>19.23</b>
Bank of India	7.20	8.87	8.79	8.29	6.93	6.00	7.32	6.76	7.27	7.37	8.10	8.81	9.15	8.13	9.62	<b>7.91</b>	<b>0.99</b>	<b>12.50</b>
Bank of Maharashtra	7.90	9.52	11.20	10.06	12.15	12.27	12.36	10.76	9.33	8.58	9.94	9.59	10.23	11.35	11.22	<b>10.43</b>	<b>1.30</b>	<b>12.43</b>
Canara Bank	6.83	7.93	8.92	9.47	11.02	9.40	9.02	8.07	9.32	9.56	9.74	10.39	11.17	10.21	10.05	<b>9.41</b>	<b>1.12</b>	<b>11.93</b>
Central Bank of India	5.87	6.41	7.91	8.25	9.42	10.37	8.94	9.18	9.73	8.34	8.93	9.52	10.37	11.29	12.14	<b>9.11</b>	<b>1.60</b>	<b>17.57</b>
Corporation Bank	8.80	9.09	9.63	9.77	10.25	9.01	8.77	8.11	8.35	8.99	10.12	10.92	11.38	9.76	11.20	<b>9.61</b>	<b>0.98</b>	<b>10.16</b>
Dena Bank	7.79	11.46	10.72	10.68	11.25	10.80	11.80	9.83	9.47	9.29	10.72	13.06	14.08	12.99	13.09	<b>11.14</b>	<b>1.63</b>	<b>14.66</b>
Indian Bank	6.07	7.76	8.00	7.53	7.00	6.65	6.23	6.13	6.76	7.14	8.35	9.29	9.60	9.53	8.48	<b>7.63</b>	<b>1.17</b>	<b>15.38</b>
Indian Overseas Bank	5.24	5.97	7.10	7.39	8.63	8.47	9.70	8.48	8.97	8.84	9.39	10.75	10.89	10.15	8.93	<b>8.59</b>	<b>1.56</b>	<b>18.13</b>
Oriental Bank of Commerce	6.57	9.71	11.13	10.55	12.18	11.63	10.11	9.46	9.69	9.35	9.48	9.60	10.66	9.81	10.92	<b>10.06</b>	<b>1.25</b>	<b>12.41</b>
Punjab and Sind Bank	10.00	0.00	9.06	7.24	7.50	6.71	6.94	6.80	8.35	8.92	10.32	11.63	9.97	9.98	9.60	<b>8.20</b>	<b>2.63</b>	<b>32.02</b>
Punjab National Bank	5.66	6.21	7.66	7.40	7.48	6.67	6.66	5.90	6.00	6.23	6.55	6.83	8.32	8.16	8.82	<b>6.97</b>	<b>0.93</b>	<b>13.30</b>
Syndicate Bank	7.22	7.21	8.73	9.37	9.81	11.40	9.45	7.46	7.75	7.63	7.85	8.94	9.04	8.52	9.79	<b>8.68</b>	<b>1.14</b>	<b>13.19</b>
UCO Bank	5.52	6.57	7.51	8.11	9.58	8.97	8.79	6.74	7.63	7.52	6.32	6.84	7.83	8.99	13.22	<b>8.01</b>	<b>1.77</b>	<b>22.08</b>
Union Bank of India	7.06	8.46	8.70	7.62	9.21	10.81	9.51	8.13	7.82	8.26	9.18	8.98	9.76	9.17	9.62	<b>8.82</b>	<b>0.93</b>	<b>10.49</b>
United Bank of India	6.00	5.97	6.80	7.80	9.88	9.39	9.61	8.06	7.52	7.96	9.02	8.42	10.15	9.88	11.73	<b>8.55</b>	<b>1.56</b>	<b>18.30</b>
Vijaya Bank	5.38	6.60	8.03	8.31	10.59	8.38	8.08	8.04	9.03	9.22	10.33	10.62	10.22	7.63	7.60	<b>8.54</b>	<b>1.45</b>	<b>16.99</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 27 EE6 Efficiency Ratio of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	15.79	21.25	18.68	19.65	17.18	14.88	14.10	14.74	13.97	13.06	11.63	10.80	8.81	9.83	10.27	<b>14.31</b>	<b>3.60</b>	<b>25.17</b>
Catholic Syrian Bank	7.73	11.10	12.87	13.78	14.76	15.36	21.81	14.55	13.59	14.33	14.42	16.12	18.11	14.00	17.31	<b>14.66</b>	<b>3.05</b>	<b>20.78</b>
City Union Bank	6.67	8.67	10.42	11.15	11.32	11.09	12.22	12.44	14.65	15.43	17.62	15.76	15.45	14.89	14.55	<b>12.82</b>	<b>2.89</b>	<b>22.55</b>
Dhanalaxmi Bank	9.67	16.62	18.37	15.92	15.47	12.50	16.65	19.55	23.73	19.07	21.12	21.17	21.32	17.52	15.69	<b>17.63</b>	<b>3.51</b>	<b>19.92</b>
DCB Bank	15.64	24.14	23.46	17.97	15.90	19.22	20.03	16.97	17.74	15.57	13.94	12.63	11.88	11.97	11.60	<b>16.58</b>	<b>3.83</b>	<b>23.09</b>
Federal Bank	7.33	9.63	9.34	8.45	8.95	7.72	8.73	8.83	9.65	11.12	12.02	12.60	12.63	11.49	11.76	<b>10.02</b>	<b>1.71</b>	<b>17.06</b>
HDFC Bank	18.36	17.21	19.95	16.91	15.12	14.51	14.42	13.77	12.58	12.55	11.24	10.82	10.43	9.80	8.68	<b>13.76</b>	<b>3.21</b>	<b>23.34</b>
ICICI Bank	13.44	13.33	11.53	11.99	11.88	11.81	11.35	11.59	10.56	9.90	9.32	8.70	8.44	8.75	10.51	<b>10.87</b>	<b>1.54</b>	<b>14.19</b>
IndusInd Bank	11.78	14.21	27.38	26.87	30.46	25.24	19.40	16.73	16.68	17.16	15.30	15.46	10.31	13.64	13.11	<b>18.25</b>	<b>6.04</b>	<b>33.13</b>
Jammu & Kashmir Bank	4.91	7.78	7.27	6.90	7.12	6.68	5.92	5.11	5.29	5.02	5.20	5.41	6.01	7.17	7.26	<b>6.20</b>	<b>0.97</b>	<b>15.64</b>
Karnataka Bank	5.98	6.53	8.80	10.37	10.33	11.15	16.05	13.55	11.16	10.37	10.41	11.64	12.33	10.97	10.06	<b>10.65</b>	<b>2.38</b>	<b>22.35</b>
Karur Vysya Bank	8.14	10.79	8.74	10.09	10.39	10.53	10.41	10.37	10.58	11.67	11.44	11.77	11.44	10.70	10.97	<b>10.54</b>	<b>0.97</b>	<b>9.16</b>
Kotak Mahindra Bank	22.19	29.25	26.35	26.97	24.38	24.04	18.73	20.82	20.50	19.99	20.07	21.65	20.27	17.70	18.08	<b>22.07</b>	<b>3.32</b>	<b>15.03</b>
Lakshmi Vilas Bank	15.27	31.94	26.25	30.19	27.58	26.06	36.04	34.64	39.55	36.90	37.26	32.93	38.31	25.53	44.29	<b>32.18</b>	<b>7.00</b>	<b>21.77</b>
RBL Bank	12.21	15.09	14.50	14.44	9.71	9.38	11.95	10.34	10.57	11.42	11.21	11.85	10.60	8.99	8.08	<b>11.36</b>	<b>2.00</b>	<b>17.60</b>
South Indian Bank	8.54	11.05	11.59	10.62	11.84	10.37	10.97	9.96	10.86	10.26	11.63	11.75	11.50	10.47	9.80	<b>10.75</b>	<b>0.87</b>	<b>8.06</b>
Tamilnad Mercantile Bank	9.11	8.66	9.35	8.43	9.76	9.58	8.57	7.47	8.25	8.72	9.38	10.87	10.44	9.87	9.26	<b>9.18</b>	<b>0.84</b>	<b>9.19</b>
<b>Foreign Banks</b>																		
Bank of America	9.89	7.16	7.77	7.59	3.60	3.46	3.83	3.59	4.93	6.02	4.57	5.36	6.34	5.14	5.42	<b>5.64</b>	<b>1.79</b>	<b>31.63</b>
Barclays Bank	2.60	3.09	3.66	9.79	36.37	18.92	12.18	12.35	19.86	12.94	6.11	5.01	5.94	4.04	4.80	<b>10.51</b>	<b>8.75</b>	<b>83.28</b>
BNP Paribas	11.75	11.51	10.81	8.55	8.33	7.52	12.39	11.25	20.49	15.23	13.10	12.12	11.38	12.95	10.98	<b>11.89</b>	<b>2.99</b>	<b>25.12</b>
Citi Bank	15.08	17.87	15.39	14.36	9.85	7.22	9.42	10.60	12.73	12.01	10.02	9.45	9.93	9.17	9.03	<b>11.48</b>	<b>2.89</b>	<b>25.15</b>
DBS Bank	11.15	15.10	11.56	14.27	8.84	16.55	12.15	17.24	23.13	20.66	25.73	31.06	25.49	43.32	59.30	<b>22.37</b>	<b>13.20</b>	<b>58.99</b>
Duetsche Bank	4.90	9.74	26.29	22.26	20.61	20.05	14.03	14.29	11.37	6.35	7.31	9.28	10.50	8.40	10.22	<b>13.04</b>	<b>6.20</b>	<b>47.56</b>
HSBC	9.98	9.74	9.94	9.37	7.99	6.77	7.95	8.91	7.53	6.86	8.46	8.10	7.50	7.01	6.74	<b>8.19</b>	<b>1.13</b>	<b>13.74</b>
Standard Chartered Bank	11.88	13.65	17.64	12.68	21.49	20.80	16.73	17.77	15.98	17.08	16.18	13.05	14.32	14.42	15.55	<b>15.95</b>	<b>2.69</b>	<b>16.86</b>

Source: Compiled and Calculated using Capital line database and RBI report

## **EE6 – Efficiency Ratio**

Efficiency ratio measures the banks ability to control non-interest expenses relative to its operating revenue. The efficiency ratio equals banks non-interest expenses as a fraction of operating revenue, whereas, operating revenue is the sum of net interest income and non-interest income. It identifies the amount of non-interest expenses a bank has to pay out of operating revenue. The banks have to maintain their ratio below 55 percent, implied that the banks have control over non-interest expenditure. Table 27 portrays the Efficiency Ratio of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the average non-interest expenses to operating income of Dena Bank was found to be the highest at 11.14 percent with a standard deviation at 1.63 percent followed by Bank of Maharashtra at 10.43 percent with a standard deviation at 1.30 percent. Punjab National Bank recorded the lowest average at 6.97 percent followed by Indian Bank at 7.63 percent with a standard deviation of 0.93 percent and 1.17 percent respectively.

In private sector banks, the mean value of Lakshmi Vilas Bank was found to be the highest at 32.18 percent with a higher standard deviation at 7 percent followed by Kotak Mahindra Bank at 22.07 percent with a standard deviation at 3.32 percent, which was below the optimal level. The banks can reduce their overhead cost further to improve their profit margin. The lowest average was recorded by Jammu and Kashmir Bank at 6.20 percent followed by Tamilnad Mercantile Bank at 9.18 percent with a standard deviation at 0.97 percent and 0.84 percent respectively.

In foreign banks, the average efficiency of DBS Bank was found to be the highest at 22.37 percent with a standard deviation at 13.20 percent. The bank reported the ratio at 59.30 percent in 2017-2018, which was above the optimum level at 55 percent. Thus, the bank has to decrease its non-interest expenses relative to operating revenue. The lowest average was observed in Bank of America at 5.64 percent.

The Efficiency Ratio of all the select banks reported a fluctuating trend throughout the study period. Lower the ratio, better the efficiency and profitability of the banks. The ratio of public sector banks was significantly increased due to downward trend in profit margin. Majority of the private sector banks and foreign banks have lowered their non-interest expenses.

Table 28 EE7 Return on Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	1.33	1.20	1.28	1.11	1.18	0.79	0.99	0.94	1.02	0.58	0.53	0.27	-0.31	-0.13	-1.85	<b>0.60</b>	<b>0.81</b>	<b>136.29</b>
Andhra Bank	1.72	1.59	1.19	1.13	1.02	0.95	1.16	1.16	1.08	0.88	0.26	0.34	0.27	0.08	-1.41	<b>0.76</b>	<b>0.74</b>	<b>97.69</b>
Bank of Baroda	1.14	0.71	0.73	0.72	0.80	0.98	1.10	1.18	1.12	0.82	0.69	0.48	-0.80	0.20	-0.34	<b>0.63</b>	<b>0.54</b>	<b>85.71</b>
Bank of India	1.19	0.36	0.62	0.79	1.12	1.33	0.63	0.71	0.70	0.61	0.48	0.28	-1.00	-0.25	-0.99	<b>0.44</b>	<b>0.67</b>	<b>153.31</b>
Bank of Maharashtra	0.95	0.54	0.16	0.70	0.68	0.64	0.62	0.43	0.47	0.65	0.28	0.31	0.06	-0.86	-0.73	<b>0.33</b>	<b>0.49</b>	<b>150.81</b>
Canara Bank	1.35	1.00	1.01	0.86	0.87	0.94	1.14	1.20	0.88	0.70	0.50	0.49	-0.51	0.19	-0.68	<b>0.66</b>	<b>0.57</b>	<b>86.09</b>
Central Bank of India	0.97	0.52	0.34	0.53	0.44	0.39	0.58	0.60	0.23	0.38	-0.44	0.19	-0.46	-0.73	-1.56	<b>0.13</b>	<b>0.63</b>	<b>478.68</b>
Corporation Bank	1.73	1.19	1.10	1.02	1.10	1.03	1.05	0.98	0.92	0.74	0.25	0.26	-0.22	0.23	-1.82	<b>0.64</b>	<b>0.81</b>	<b>127.18</b>
Dena Bank	1.05	0.25	0.27	0.64	0.93	0.87	0.89	0.86	0.92	0.71	0.44	0.20	-0.70	-0.67	-1.59	<b>0.34</b>	<b>0.74</b>	<b>216.66</b>
Indian Bank	1.15	1.02	1.06	1.35	1.43	1.48	1.53	1.41	1.24	0.97	0.62	0.52	0.35	0.64	0.50	<b>1.02</b>	<b>0.39</b>	<b>38.01</b>
Indian Overseas Bank	1.08	1.28	1.32	1.23	1.18	1.10	0.54	0.60	0.48	0.23	0.22	-0.16	-1.06	-1.38	-2.54	<b>0.27</b>	<b>1.10</b>	<b>399.22</b>
Oriental Bank of Commerce	1.67	1.34	0.94	0.78	0.39	0.79	0.82	0.93	0.64	0.66	0.52	0.22	0.06	-0.43	-2.51	<b>0.46</b>	<b>0.93</b>	<b>204.09</b>
Punjab and Sind Bank	0.06	-0.45	1.52	1.78	1.26	1.05	0.90	0.77	0.62	0.42	0.32	0.12	0.33	0.21	-0.65	<b>0.55</b>	<b>0.66</b>	<b>119.66</b>
Punjab National Bank	1.08	1.12	0.99	0.95	1.03	1.25	1.32	1.17	1.07	0.99	0.61	0.51	-0.60	0.18	-1.60	<b>0.67</b>	<b>0.77</b>	<b>115.28</b>
Syndicate Bank	0.92	0.77	0.88	0.80	0.79	0.70	0.58	0.67	0.72	0.93	0.68	0.50	-0.53	0.12	-0.99	<b>0.50</b>	<b>0.54</b>	<b>107.19</b>
UCO Bank	0.99	0.63	0.32	0.42	0.46	0.50	0.73	0.55	0.61	0.31	0.63	0.46	-1.14	-0.80	-2.05	<b>0.18</b>	<b>0.81</b>	<b>459.07</b>
Union Bank of India	1.22	0.99	0.76	0.82	1.12	1.07	1.06	0.88	0.68	0.69	0.48	0.47	0.33	0.12	-1.07	<b>0.64</b>	<b>0.55</b>	<b>85.45</b>
United Bank of India	1.25	1.04	0.62	0.63	0.27	0.30	0.42	0.58	0.62	0.34	-0.97	0.21	-0.22	0.16	-1.00	<b>0.28</b>	<b>0.60</b>	<b>213.74</b>
Vijaya Bank	1.71	1.30	0.40	0.78	0.64	0.42	0.72	0.64	0.61	0.53	0.30	0.31	0.26	0.48	0.41	<b>0.63</b>	<b>0.38</b>	<b>59.87</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 28 EE7 Return on Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	1.15	0.89	0.97	0.90	0.98	1.23	1.39	1.40	1.49	1.52	1.62	1.59	1.52	0.61	0.04	<b>1.15</b>	<b>0.42</b>	<b>36.44</b>
Catholic Syrian Bank	1.31	0.24	0.13	0.36	0.61	0.53	-0.08	0.20	0.22	0.20	0.20	-0.34	-0.96	0.01	-0.61	<b>0.14</b>	<b>0.51</b>	<b>376.69</b>
City Union Bank	1.79	1.33	1.37	1.34	1.38	1.32	1.32	1.47	1.53	1.40	1.39	1.42	1.40	1.43	1.48	<b>1.42</b>	<b>0.11</b>	<b>7.99</b>
Dhanalaxmi Bank	0.71	-0.82	0.33	0.47	0.71	1.02	0.29	0.18	-0.79	0.02	-1.71	-1.68	-1.68	0.10	-0.20	<b>-0.20</b>	<b>0.89</b>	<b>-435.70</b>
DCB Bank	0.32	-3.50	-2.28	0.14	0.50	-1.48	-1.28	0.29	0.63	0.90	1.17	1.18	1.02	0.83	0.81	<b>-0.05</b>	<b>1.37</b>	<b>824.78</b>
Federal Bank	0.90	0.54	1.09	1.16	1.13	1.28	1.06	1.14	1.28	1.18	1.12	1.21	0.50	0.72	0.63	<b>1.00</b>	<b>0.26</b>	<b>26.01</b>
HDFC Bank	1.20	1.29	1.18	1.25	1.19	1.22	1.32	1.42	1.53	1.68	1.72	1.73	1.66	1.68	1.64	<b>1.45</b>	<b>0.21</b>	<b>14.69</b>
ICICI Bank	1.30	1.19	1.01	0.90	1.04	0.99	1.11	1.27	1.32	1.55	1.64	1.72	1.34	1.26	0.77	<b>1.23</b>	<b>0.26</b>	<b>21.32</b>
IndusInd Bank	1.74	1.35	0.21	0.33	0.32	0.54	0.99	1.26	1.39	1.45	1.61	1.60	1.60	1.60	1.63	<b>1.17</b>	<b>0.53</b>	<b>45.28</b>
Jammu & Kashmir Bank	1.92	0.47	0.67	0.96	1.10	1.09	1.20	1.22	1.33	1.47	1.50	0.67	0.52	-1.99	0.23	<b>0.82</b>	<b>0.87</b>	<b>105.56</b>
Karnataka Bank	1.26	1.17	1.18	1.09	1.25	1.17	0.62	0.64	0.68	0.84	0.66	0.87	0.73	0.71	0.46	<b>0.89</b>	<b>0.26</b>	<b>29.41</b>
Karur Vysya Bank	2.27	1.34	1.50	1.44	1.43	1.38	1.53	1.47	1.33	1.18	0.83	0.87	0.96	0.98	0.52	<b>1.27</b>	<b>0.39</b>	<b>31.12</b>
Kotak Mahindra Bank	1.35	1.30	1.16	0.71	1.04	0.96	1.50	1.61	1.65	1.63	1.72	1.76	1.09	1.59	1.54	<b>1.37</b>	<b>0.31</b>	<b>22.31</b>
Lakshmi Vilas Bank	1.07	0.08	0.46	0.30	0.39	0.61	0.29	0.76	0.66	0.52	0.29	0.54	0.63	0.73	-1.45	<b>0.39</b>	<b>0.54</b>	<b>138.82</b>
RBL Bank	1.04	-1.09	0.06	0.26	1.15	1.79	0.92	0.38	0.90	0.72	0.51	0.76	0.75	0.92	1.03	<b>0.67</b>	<b>0.61</b>	<b>91.35</b>
South Indian Bank	0.91	0.09	0.47	0.76	0.89	0.96	0.92	0.89	0.99	1.01	0.92	0.52	0.52	0.53	0.40	<b>0.72</b>	<b>0.27</b>	<b>36.98</b>
Tamilnad Mercantile Bank	1.59	1.47	1.66	1.49	1.43	1.34	1.36	1.56	1.54	1.86	1.14	1.28	1.14	0.86	0.59	<b>1.35</b>	<b>0.31</b>	<b>23.01</b>
<b>Foreign Banks</b>																		
Bank of America	1.26	1.46	2.41	3.10	3.76	3.42	2.60	3.47	3.25	2.09	2.61	2.12	2.01	2.05	1.93	<b>2.50</b>	<b>0.73</b>	<b>29.21</b>
Barclays Bank	5.20	6.68	6.49	2.92	0.05	0.15	-2.67	0.43	-0.83	-0.18	1.14	1.28	1.46	1.84	1.10	<b>1.67</b>	<b>2.56</b>	<b>153.05</b>
BNP Paribas	-0.44	0.50	0.51	1.51	1.72	1.73	1.92	1.76	0.69	0.99	0.68	1.03	0.93	0.84	0.87	<b>1.02</b>	<b>0.61</b>	<b>59.72</b>
Citi Bank	1.93	1.77	1.55	1.36	2.15	2.06	0.90	1.28	1.50	2.12	1.99	2.46	2.09	2.44	2.07	<b>1.85</b>	<b>0.43</b>	<b>23.24</b>
DBS Bank	-1.31	0.64	0.50	1.22	0.72	2.06	1.44	0.54	0.92	0.71	0.00	-0.76	0.02	0.03	-1.14	<b>0.37</b>	<b>0.90</b>	<b>241.68</b>
Duetsche Bank	3.17	0.72	1.05	1.23	1.56	1.72	1.58	2.20	2.88	2.55	1.26	2.28	1.71	1.30	1.16	<b>1.76</b>	<b>0.69</b>	<b>39.14</b>
HSBC	0.78	1.21	1.37	1.54	1.57	1.36	0.90	1.68	1.82	1.82	1.13	1.18	1.37	1.83	1.60	<b>1.41</b>	<b>0.32</b>	<b>22.43</b>
Standard Chartered Bank	1.74	1.62	1.97	2.32	2.32	1.96	2.40	1.94	1.43	2.47	1.21	2.32	0.77	1.68	1.37	<b>1.83</b>	<b>0.48</b>	<b>26.12</b>

Source: Compiled and Calculated by using Capital line database and RBI reports

### **EE7 – Return on Assets**

The ratio of Return on Assets measures to evaluate the profitability of banks out of the available total assets. It indicates how banks are systematically using their assets to produce good returns. Higher the ratio, better the performance of banks. Table 28 presents the results of Return on Assets of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the mean value of return on assets of Indian Bank was observed to be the highest at 1.02 percent followed by Punjab National Bank at 0.67 percent with a standard deviation at 0.39 percent and 0.77 percent respectively. The ratio was declined over the period due to higher provisioning on loan loss assets. The lowest mean value was recorded by Central Bank of India at 0.13 percent with a standard deviation at 0.63 percent followed by UCO Bank at 0.18 percent with a standard deviation at 0.81 percent, implying low variation in return on assets during the study period.

Among private sector banks, HDFC Bank reported the highest average of at 1.45 percent followed by City Union Bank at 1.42 percent with a lower standard deviation at 0.21 percent and 0.11 percent respectively. It implied that the banks are using their assets more productively to increase earning efficiency. Dhanalaxmi Bank recorded the lowest ratio at -0.20 percent with a standard deviation at 0.89 percent and DCB Bank at -0.05 percent with a standard deviation at 1.37 percent. The banks reported lower ratio due to mounting poor quality of assets.

In foreign banks, the mean value of return on assets was found to be the highest in Bank of America at 2.50 percent with a standard deviation at 0.73 percent. The lowest mean value in the group was observed in DBS Bank at 0.37 percent with a standard deviation at 0.90 percent and the bank also reported negative return during 2017-2018 at -1.14 percent, implied the bank has to improve their productivity of assets.

The select scheduled commercial banks reported a decreasing trend during the study period. The ratio of return on assets in public sector banks steadily fell down from 2012-2013 and reported a negative ratio in 2017-2018 except Indian Bank. Most of the private sector banks and foreign banks have shown a decreasing trend with positive sign in 2017-2018 compared to 2003-2004.

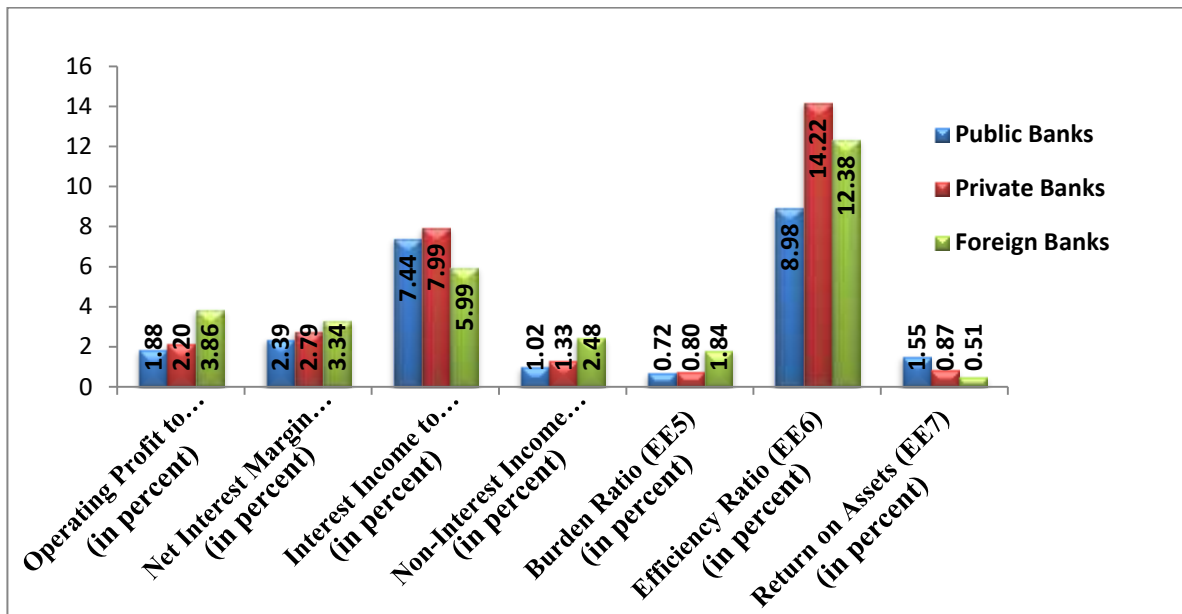


Figure 5

### Group-wise Earning Efficiency of Scheduled Commercial Banks

Figure 5 illustrates group-wise earning efficiency of scheduled commercial banks. The average Operating Profit to Total Assets (EE1) was observed to be more in foreign banks at 3.86 percent, implying the banks utilized their assets productively to earn more return. The private sector banks and public sector banks reported lower operating profit of 2.20 percent and 1.88 percent respectively during the study period

The ratio of Net Interest Margin (EE2) was found to be very high in foreign banks at 3.34 percent, indicating the banks are more effective in generating revenue with respect to interest expenses. The private sector banks and public sector banks reported the lowest net interest margin at 2.79 and 2.39 percent respectively.

The average Interest Income to Total Assets (EE3) was found to be the more in private sector banks at 7.99 percent. The public sector banks reported an average at 7.44 percent. Foreign banks reported the lowest proportion of interest income to its total assets at 5.99 percent.

The ratio of Non-Interest Income to Total Assets (EE4) was observed to be more in foreign banks at 2.48 percent, indicating the banks are more efficient in generating additional source of revenue from allied services. The private sector banks and public sector banks reported the lowest non-interest income at 1.33 percent and 1.02 percent respectively.

The average Burden Ratio (EE5) of foreign banks recorded an average at 1.84 percent, implied lower burden when compared to other banks group and they have the ability to generate non-interest income. The average of private sector banks was at 0.80 percent and the public sector banks at 0.72 percent.

The average Efficiency Ratio (EE6) of private sector banks stood at 14.22 percent, indicating that banks have more non-operating income. The average ratio of foreign banks was at 12.38 percent followed by public sector banks at 8.98 percent, which was lowest among the select banking groups.

While considering Return on Assets (EE7) the average was observed to be high in public sector banks at 1.55 percent indicating that the banks effectively used their assets to generate profit. The average ratio of private sector banks was at 0.87 percent and foreign banks at 0.51 percent which is lowest compare to other banks.

To find whether there was any significant mean difference in the earning efficiency variables of select scheduled commercial banks, t-test was applied and the results are presented in Table 29.

*H<sub>01</sub>: There is no significant mean difference in earning efficiency of select scheduled commercial banks in India.*

**Table 29**

**Results of t-test of Earning Efficiency of Select Scheduled Commercial Banks**

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>t-test value</b>	<b>P-value</b>	<b>Significance</b>
Operating Profit to Total Assets (in percent)	2.36	0.97	16.222	.000	Significant
Net Interest Margin (in percent)	2.71	0.56	32.338	.000	Significant
Interest Income to Total Assets (in percent)	7.38	0.88	55.958	.000	Significant
Non-Interest Income to Total Assets (in percent)	1.40	0.70	13.364	.000	Significant
Burden Ratio (in percent)	0.95	0.59	10.653	.000	Significant
Efficiency Ratio (in percent)	11.62	4.91	15.669	.000	Significant
Return on Assets (in percent)	0.83	0.57	9.682	.000	Significant

**Source: Computed data**

It is observed from the Table 29, among the select banks there is a significant mean difference in respect of earning efficiency. The p-values were found to be significant at one percent level. Hence, null hypothesis is rejected. **There is a significant mean difference in the earning efficiency ratios of the select scheduled commercial banks.**

## **LIQUIDITY**

Liquidity management is an essential component to assess the financial performance and soundness of banking system. It focuses on the amount of assets that can be easily converted into cash at reasonable price in order to meet the cash requirements and to increase banks capacity to borrow. The following ratios were calculated to measure the liquidity position of the banks:

L1: Liquid Assets to Demand Deposits,

L2: Liquid Assets to Total Deposits,

L3: Liquid Assets to Total Assets, and

L4: Government Securities to Total Assets.

Table 30 L1 Liquid Asset to Demand Deposits of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	91.20	100.51	107.56	89.99	121.83	100.21	110.25	120.44	147.05	131.31	157.14	191.27	234.66	186.36	205.93	<b>139.71</b>	<b>44.11</b>	<b>31.57</b>
Andhra Bank	115.97	137.72	166.60	109.89	129.13	101.38	165.54	146.07	135.74	91.14	125.99	78.96	118.98	204.78	153.89	<b>132.12</b>	<b>31.33</b>	<b>23.71</b>
Bank of Baroda	107.31	134.68	160.58	185.12	190.66	166.68	187.42	215.84	221.70	239.36	261.49	280.99	386.67	353.89	201.68	<b>219.60</b>	<b>73.65</b>	<b>33.54</b>
Bank of India	146.56	123.42	154.54	185.84	142.05	172.96	196.57	221.15	193.26	270.32	284.31	355.77	421.57	338.44	324.56	<b>235.42</b>	<b>88.26</b>	<b>37.49</b>
Bank of Maharashtra	243.83	161.44	83.40	81.07	83.09	81.94	107.99	61.36	67.97	55.19	57.16	59.20	76.84	144.34	135.15	<b>100.00</b>	<b>50.03</b>	<b>50.03</b>
Canara Bank	138.97	96.78	124.96	131.57	134.59	116.04	106.89	125.34	190.16	233.09	252.64	245.09	286.14	260.51	199.78	<b>176.17</b>	<b>62.62</b>	<b>35.55</b>
Central Bank of India	82.03	114.89	62.83	103.37	128.38	121.15	127.51	99.04	111.41	97.25	91.44	112.18	129.83	596.39	267.11	<b>149.65</b>	<b>127.16</b>	<b>84.97</b>
Corporation Bank	79.68	87.48	86.14	99.14	77.13	80.00	80.22	73.86	95.06	83.24	95.97	97.77	104.29	134.45	77.00	<b>90.10</b>	<b>14.94</b>	<b>16.59</b>
Dena Bank	74.77	83.91	105.17	85.90	131.03	163.81	110.04	98.60	75.56	142.96	92.79	147.73	83.77	85.30	97.61	<b>105.26</b>	<b>27.20</b>	<b>25.84</b>
Indian Bank	134.33	90.00	150.04	132.63	143.04	126.29	122.47	132.96	126.52	140.78	146.52	154.49	129.34	97.08	100.18	<b>128.44</b>	<b>18.65</b>	<b>14.52</b>
Indian Overseas Bank	125.32	98.85	65.04	131.75	114.93	134.33	102.22	101.80	132.34	115.53	135.56	170.07	184.13	178.13	205.21	<b>133.01</b>	<b>36.19</b>	<b>27.21</b>
Oriental Bank of Commerce	115.64	174.96	110.06	118.11	131.59	158.55	142.89	123.63	93.09	73.65	120.09	83.93	90.57	96.99	99.07	<b>115.52</b>	<b>27.09</b>	<b>23.45</b>
Punjab and Sind Bank	123.80	NA	77.21	124.39	141.72	132.22	150.64	141.32	123.72	114.57	144.62	88.11	97.87	102.28	181.41	<b>124.56</b>	<b>26.50</b>	<b>21.27</b>
Punjab National Bank	89.09	88.95	148.24	95.02	105.84	113.82	98.97	110.63	101.25	90.83	143.55	166.57	209.15	192.64	236.44	<b>132.73</b>	<b>46.47</b>	<b>35.01</b>
Syndicate Bank	162.32	61.62	86.53	124.80	109.07	136.84	125.01	111.42	113.61	119.00	107.44	138.18	183.40	217.38	178.36	<b>131.67</b>	<b>38.51</b>	<b>29.25</b>
UCO Bank	122.19	165.12	83.46	113.54	139.97	148.29	90.68	221.31	168.35	47.51	59.35	83.33	90.97	155.08	152.02	<b>122.74</b>	<b>45.71</b>	<b>37.24</b>
Union Bank of India	76.90	131.17	106.89	97.72	85.32	121.41	97.21	102.45	81.32	67.16	101.63	106.09	98.43	138.24	197.30	<b>107.28</b>	<b>30.39</b>	<b>28.32</b>
United Bank of India	97.53	79.37	88.65	108.37	115.69	118.81	95.94	85.92	74.71	94.29	133.86	67.43	104.31	122.52	204.32	<b>106.11</b>	<b>31.80</b>	<b>29.97</b>
Vijaya Bank	55.13	54.83	82.97	121.55	126.45	185.42	122.67	111.24	136.70	127.38	160.37	109.59	99.27	69.25	54.00	<b>107.79</b>	<b>37.80</b>	<b>35.07</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 30 L1 Liquid Asset to Demand Deposits of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	105.00	62.94	45.69	61.20	62.38	60.50	47.26	57.99	35.05	42.29	58.00	64.34	52.36	57.76	45.43	<b>57.21</b>	<b>15.34</b>	<b>26.81</b>
Catholic Syrian Bank	172.27	276.47	205.40	207.32	204.73	301.86	241.57	214.16	279.14	323.36	324.12	212.22	188.32	199.28	193.45	<b>236.24</b>	<b>49.35</b>	<b>20.89</b>
City Union Bank	92.14	78.14	81.28	84.33	131.59	127.33	100.29	118.27	94.43	132.59	151.15	152.08	138.08	119.50	94.63	<b>113.06</b>	<b>24.41</b>	<b>21.59</b>
Dhanalaxmi Bank	126.90	125.33	110.68	172.69	168.03	148.89	133.16	61.07	107.15	98.93	185.32	127.20	111.99	106.57	127.27	<b>127.41</b>	<b>30.69</b>	<b>24.09</b>
DCB Bank	144.92	104.27	73.16	88.35	167.24	98.63	42.96	54.99	54.40	98.22	71.90	68.75	75.74	77.70	129.23	<b>90.03</b>	<b>33.66</b>	<b>37.38</b>
Federal Bank	184.46	180.69	199.57	190.13	187.48	238.26	148.72	155.80	138.75	127.88	134.02	117.83	117.05	131.78	136.01	<b>159.23</b>	<b>34.32</b>	<b>21.55</b>
HDFC Bank	40.19	42.09	46.90	45.66	51.39	61.55	80.43	63.86	46.11	52.15	64.38	49.39	44.01	42.36	103.05	<b>55.57</b>	<b>16.55</b>	<b>29.79</b>
ICICI Bank	116.69	100.73	102.82	173.66	154.07	138.53	125.41	98.02	103.59	112.17	96.03	85.43	101.70	100.97	94.62	<b>113.63</b>	<b>23.67</b>	<b>20.83</b>
IndusInd Bank	253.39	129.23	123.23	151.66	120.87	65.10	59.07	64.17	80.65	77.52	69.25	87.24	65.33	95.00	63.41	<b>100.34</b>	<b>49.50</b>	<b>49.33</b>
Jammu & Kashmir Bank	134.02	115.99	75.96	103.87	103.31	114.04	94.31	66.21	77.67	84.42	61.61	57.03	44.41	56.32	73.22	<b>84.16</b>	<b>25.04</b>	<b>29.75</b>
Karnataka Bank	131.74	186.62	135.49	107.48	144.86	126.25	105.81	107.00	88.77	79.35	85.03	91.04	93.88	90.36	93.04	<b>111.11</b>	<b>28.04</b>	<b>25.23</b>
Karur Vysya Bank	91.50	83.44	82.26	62.85	77.09	91.81	60.23	70.91	82.13	58.82	74.80	77.91	71.80	88.31	77.06	<b>76.73</b>	<b>10.11</b>	<b>13.18</b>
Kotak Mahindra Bank	26.02	108.19	78.10	61.46	67.34	33.38	46.08	45.25	35.83	48.22	68.41	47.51	46.73	81.31	60.85	<b>56.98</b>	<b>20.69</b>	<b>36.32</b>
Lakshmi Vilas Bank	68.33	82.96	102.28	126.54	109.96	179.12	132.66	122.89	117.26	118.07	143.74	87.34	83.63	88.03	96.35	<b>110.61</b>	<b>27.55</b>	<b>24.91</b>
RBL Bank	211.59	150.79	116.29	160.33	234.31	209.08	128.34	98.66	99.86	62.04	70.49	98.66	88.14	111.71	80.25	<b>128.04</b>	<b>52.20</b>	<b>40.77</b>
South Indian Bank	202.72	146.48	238.38	314.19	220.23	240.78	188.96	205.26	209.26	280.21	170.42	197.77	165.12	141.24	138.05	<b>203.94</b>	<b>48.50</b>	<b>23.78</b>
Tamilnad Mercantile Bank	67.28	77.08	57.28	57.81	84.23	97.17	87.13	63.17	53.60	81.58	90.13	81.55	80.36	77.69	72.62	<b>75.25</b>	<b>12.52</b>	<b>16.64</b>
<b>Foreign Banks</b>																		
Bank of America	43.78	42.88	37.48	59.54	54.87	50.88	32.93	18.25	22.56	28.28	18.90	26.30	38.65	97.69	56.04	<b>41.93</b>	<b>19.80</b>	<b>47.21</b>
Barclays Bank	372.86	206.92	143.16	311.43	299.63	264.03	310.67	356.53	228.47	193.31	99.02	107.85	57.37	216.23	134.29	<b>220.45</b>	<b>94.80</b>	<b>43.06</b>
BNP Paribas	112.94	31.57	93.85	93.24	41.02	111.19	58.00	52.69	44.34	29.97	69.52	74.93	74.43	235.06	121.70	<b>82.96</b>	<b>49.74</b>	<b>59.95</b>
Citi Bank	87.27	65.39	62.59	65.57	85.03	108.72	91.87	118.31	91.72	101.80	82.53	37.91	34.70	55.93	49.65	<b>75.93</b>	<b>24.40</b>	<b>32.14</b>
DBS Bank	208.63	301.34	319.11	332.26	196.03	537.34	215.00	330.56	409.91	311.40	129.79	81.16	357.21	267.47	250.06	<b>283.49</b>	<b>108.79</b>	<b>38.33</b>
Duetsche Bank	234.27	253.13	169.52	104.59	45.99	51.83	26.33	16.52	34.27	42.86	36.38	62.93	54.94	65.65	54.32	<b>83.57</b>	<b>72.21</b>	<b>86.41</b>
HSBC	32.79	46.41	32.36	81.69	70.19	84.76	51.05	52.21	67.70	60.79	100.86	139.15	78.31	96.85	91.77	<b>72.46</b>	<b>27.55</b>	<b>38.02</b>
Standard Chartered Bank	32.31	25.87	52.59	43.86	51.30	38.43	33.65	42.99	30.22	38.39	47.87	60.83	40.70	54.85	80.18	<b>44.94</b>	<b>13.36</b>	<b>29.72</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **L1 – Liquid Assets to Demand Deposits**

The ratio of Liquid assets to Demand deposits measures the ingenuity of banks to meet the requirement of demand deposits. Higher ratio indicates that the banks are maintaining adequate liquid assets to meet the requisite of demand depositors. Table 30 illustrates the ratio of Liquid Assets to Demand Deposit of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the mean value of liquid assets to demand deposits was found to be the highest in Bank of India at 235.42 percent with a standard deviation at 88.26 percent followed by Bank of Baroda at 219.60 percent with a standard deviation at 73.65 percent. It implied that the banks have sufficient liquid assets to meet the essentials of demand depositors. Corporation Bank recorded the lowest mean value at 90.10 percent with a standard deviation at 14.94 percent. Bank of Maharashtra at 100 percent with a standard deviation at 50.03 percent implied high deviation in liquid assets to demand deposits during the study period..

Among private sector banks, Catholic Syrian Bank reported the highest mean value at 236.24 percent followed by South Indian Bank at 203.94 percent with a standard deviation at 49.35 percent and 48.50 percent respectively. It indicates that the banks have adequate level of liquidity to meet the obligation of funding requirements from demand depositors. HDFC Bank reported the lowest mean value at 55.57 percent with a standard deviation at 16.55 percent and Kotak Mahindra Bank at 56.98 percent with a standard deviation at 20.69 percent.

In foreign banks, the average liquid asset to demand deposits of DBS Bank was found to be the highest at 283.49 percent. Bank of America reported the lowest average in the group at 41.93 percent with a standard deviation at 19.80 percent, stating the bank to maintain sufficient liquidity to meet the requirements of demand depositors.

The ratio of Liquid Assets to Demand Deposits of all the public sector banks except Corporation Bank recorded an average of above 100 percent during the study period. The private sector banks and foreign banks recorded an average of more than 100 percent, indicating the banks have maximum liquidity to safeguard the depositors from risk.

Table 31 L2 Liquid Asset to Total Deposits of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	8.25	8.13	9.05	8.30	9.83	7.81	8.64	8.36	8.79	7.31	7.49	8.79	11.14	10.93	10.03	<b>8.86</b>	<b>1.12</b>	<b>12.61</b>
Andhra Bank	11.22	12.79	15.15	9.71	11.52	8.90	13.84	10.99	7.94	5.05	6.52	4.83	5.15	9.07	7.66	<b>9.36</b>	<b>3.12</b>	<b>33.39</b>
Bank of Baroda	9.96	11.38	14.37	14.63	14.67	12.52	14.27	15.89	16.29	17.68	22.56	23.56	23.33	25.01	15.71	<b>16.79</b>	<b>4.53</b>	<b>26.99</b>
Bank of India	11.97	9.55	12.19	14.52	11.81	11.47	13.59	12.41	10.65	14.08	12.63	14.08	19.33	17.76	18.41	<b>13.63</b>	<b>2.76</b>	<b>20.26</b>
Bank of Maharashtra	20.67	13.43	8.88	9.85	10.12	7.86	10.19	5.86	7.30	6.35	5.10	5.36	6.53	11.97	11.43	<b>9.39</b>	<b>3.89</b>	<b>41.43</b>
Canara Bank	13.93	8.96	10.98	11.50	11.58	8.91	8.12	10.15	8.39	9.52	10.38	10.01	11.82	11.88	9.51	<b>10.38</b>	<b>1.53</b>	<b>14.70</b>
Central Bank of India	9.09	11.61	7.21	10.65	11.64	9.33	11.57	8.29	7.00	6.09	5.02	5.66	5.84	26.55	13.31	<b>9.92</b>	<b>5.10</b>	<b>51.40</b>
Corporation Bank	12.23	13.15	12.44	15.86	14.62	14.25	11.07	8.51	8.27	7.40	7.16	6.21	7.40	11.36	6.17	<b>10.41</b>	<b>3.17</b>	<b>30.47</b>
Dena Bank	7.91	8.53	10.60	10.18	11.90	13.61	9.68	8.23	7.06	9.86	5.64	8.12	4.58	5.50	5.61	<b>8.47</b>	<b>2.47</b>	<b>29.19</b>
Indian Bank	10.33	7.39	11.78	10.23	11.09	9.21	9.20	7.99	7.23	6.74	6.42	7.68	6.73	5.50	6.21	<b>8.25</b>	<b>1.87</b>	<b>22.67</b>
Indian Overseas Bank	12.64	11.20	7.34	13.06	12.26	10.91	8.49	7.90	8.78	7.30	8.10	9.82	9.91	10.99	12.24	<b>10.06</b>	<b>1.93</b>	<b>19.17</b>
Oriental Bank of Commerce	10.09	15.76	11.01	11.73	13.12	12.43	11.94	8.22	5.52	4.80	7.25	5.17	5.56	7.94	6.60	<b>9.14</b>	<b>3.29</b>	<b>35.98</b>
Punjab and Sind Bank	11.19	11.89	12.69	13.71	11.84	8.19	9.67	8.03	6.68	5.65	7.33	4.79	5.37	5.37	7.01	<b>8.63</b>	<b>2.88</b>	<b>33.37</b>
Punjab National Bank	10.03	10.75	20.71	11.19	11.31	10.21	9.41	9.16	7.38	6.74	9.77	10.77	13.67	14.21	14.86	<b>11.35</b>	<b>3.32</b>	<b>29.27</b>
Syndicate Bank	15.45	6.63	9.72	12.08	12.25	12.43	10.55	8.60	8.60	8.73	6.92	9.14	11.16	9.68	7.89	<b>9.99</b>	<b>2.28</b>	<b>22.87</b>
UCO Bank	10.67	13.17	6.13	9.58	10.14	10.83	6.53	11.56	8.74	7.05	7.46	10.27	8.96	8.99	8.11	<b>9.21</b>	<b>1.90</b>	<b>20.59</b>
Union Bank of India	7.61	10.63	8.62	9.89	9.72	11.52	9.28	9.63	6.84	5.99	7.53	6.88	8.54	8.73	12.10	<b>8.90</b>	<b>1.69</b>	<b>19.02</b>
United Bank of India	9.32	8.41	9.49	11.53	12.50	11.75	9.35	9.41	8.17	8.93	9.70	5.54	7.15	10.25	15.65	<b>9.81</b>	<b>2.30</b>	<b>23.49</b>
Vijaya Bank	5.32	6.30	10.23	13.48	12.72	14.07	8.73	7.69	7.57	6.74	7.50	5.67	5.28	4.46	3.16	<b>7.93</b>	<b>3.22</b>	<b>40.61</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 31 L2 Liquid Asset to Total Deposits of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	27.03	14.20	9.08	11.77	14.27	12.79	10.76	11.31	6.33	8.09	10.05	11.20	9.31	12.13	9.58	<b>11.86</b>	<b>4.56</b>	<b>38.44</b>
Catholic Syrian Bank	10.87	17.02	11.58	11.64	11.09	14.96	10.11	8.02	9.16	8.63	7.86	5.52	5.03	8.12	8.27	<b>9.86</b>	<b>3.09</b>	<b>31.33</b>
City Union Bank	8.41	7.33	7.57	10.30	12.71	10.79	10.70	9.93	6.94	8.70	9.88	10.52	9.76	9.56	8.03	<b>9.41</b>	<b>1.51</b>	<b>16.09</b>
Dhanalaxmi Bank	12.51	14.54	12.19	19.59	19.19	13.81	10.57	7.34	7.71	8.13	13.48	10.18	7.25	7.15	7.98	<b>11.44</b>	<b>4.00</b>	<b>34.93</b>
DCB Bank	11.87	9.20	9.49	10.59	17.47	14.21	6.94	8.53	7.12	10.48	6.64	5.67	5.97	6.18	9.88	<b>9.35</b>	<b>3.19</b>	<b>34.14</b>
Federal Bank	9.58	10.24	10.47	10.72	10.59	10.67	7.55	8.71	7.22	6.46	7.58	6.75	6.85	7.63	8.22	<b>8.62</b>	<b>1.55</b>	<b>18.02</b>
HDFC Bank	11.68	12.31	12.40	13.25	14.67	12.26	17.89	14.22	8.49	9.21	10.78	8.06	7.12	7.61	15.58	<b>11.70</b>	<b>3.06</b>	<b>26.15</b>
ICICI Bank	12.44	12.95	10.32	16.10	15.56	13.72	14.96	11.83	11.15	11.46	10.16	9.45	13.35	15.45	15.00	<b>12.93</b>	<b>2.10</b>	<b>16.21</b>
IndusInd Bank	19.38	8.80	9.87	14.71	11.44	8.70	9.75	11.33	12.73	12.40	10.99	14.28	10.87	14.60	8.60	<b>11.90</b>	<b>2.82</b>	<b>23.74</b>
Jammu & Kashmir Bank	15.63	14.68	9.74	14.34	15.52	15.98	12.19	7.84	8.26	8.34	6.03	5.63	4.62	7.43	10.32	<b>10.44</b>	<b>3.85</b>	<b>36.85</b>
Karnataka Bank	7.97	12.66	9.17	8.27	9.53	7.18	7.50	7.17	5.84	5.33	5.68	5.61	6.03	5.77	5.73	<b>7.30</b>	<b>1.94</b>	<b>26.64</b>
Karur Vysya Bank	10.11	9.82	10.33	8.26	9.45	9.10	6.41	7.13	6.31	4.63	6.10	6.13	5.77	8.09	7.55	<b>7.68</b>	<b>1.73</b>	<b>22.51</b>
Kotak Mahindra Bank	15.21	9.78	9.02	11.78	12.92	7.29	9.32	8.22	6.67	7.10	9.97	8.27	7.85	14.34	10.18	<b>9.86</b>	<b>2.54</b>	<b>25.74</b>
Lakshmi Vilas Bank	8.50	10.13	10.69	12.78	10.94	11.97	9.19	9.09	5.84	5.45	6.89	5.88	5.38	5.31	6.05	<b>8.27</b>	<b>2.52</b>	<b>30.50</b>
RBL Bank	23.30	18.89	19.73	27.91	43.88	35.12	22.41	17.15	12.37	8.26	10.28	12.69	10.06	12.12	9.76	<b>18.93</b>	<b>9.93</b>	<b>52.48</b>
South Indian Bank	9.74	8.26	14.03	15.90	11.23	11.25	8.64	8.22	7.18	9.74	6.75	6.90	5.88	5.88	5.86	<b>9.03</b>	<b>2.91</b>	<b>32.27</b>
Tamilnad Mercantile Bank	8.73	10.76	8.24	7.96	10.14	9.71	10.26	6.59	4.23	5.86	6.23	5.59	5.26	6.04	6.18	<b>7.45</b>	<b>2.01</b>	<b>26.98</b>
<b>Foreign Banks</b>																		
Bank of America	19.75	22.54	28.04	35.48	33.97	32.45	15.05	9.11	11.10	15.63	8.93	14.35	18.25	39.85	25.38	<b>21.99</b>	<b>9.74</b>	<b>44.29</b>
Barclays Bank	32.53	307.13	275.20	106.32	22.33	5.17	13.04	13.80	9.72	8.28	4.35	9.38	4.92	16.31	14.02	<b>56.17</b>	<b>95.48</b>	<b>170.00</b>
BNP Paribas	26.70	9.80	25.30	23.73	18.08	38.36	13.15	12.49	16.53	6.78	9.62	12.19	8.70	27.01	17.02	<b>17.70</b>	<b>8.55</b>	<b>48.33</b>
Citi Bank	25.45	22.22	22.68	23.76	25.26	31.07	27.89	37.54	28.34	28.59	20.83	10.51	9.80	19.44	17.29	<b>23.38</b>	<b>7.07</b>	<b>30.26</b>
DBS Bank	62.64	93.20	112.92	90.80	35.81	27.15	17.22	22.82	14.61	15.84	12.67	5.03	21.77	17.36	20.45	<b>38.02</b>	<b>33.27</b>	<b>87.51</b>
Duetsche Bank	127.97	138.65	118.32	72.17	29.94	34.02	12.76	9.83	20.10	18.28	15.26	22.48	21.22	32.56	26.27	<b>46.65</b>	<b>43.32</b>	<b>92.85</b>
HSBC	8.90	13.01	11.52	23.10	21.55	22.48	14.63	15.18	18.80	16.09	21.28	30.34	20.88	26.46	26.85	<b>19.40</b>	<b>5.91</b>	<b>30.45</b>
Standard Chartered Bank	8.30	6.83	16.82	11.60	15.32	10.09	9.92	11.65	7.60	8.87	10.25	12.46	9.30	11.55	19.17	<b>11.32</b>	<b>3.34</b>	<b>29.51</b>

Source: Compiled and Calculated using Capital line database and RBI reports

## **L2 – Liquid Assets to Total Deposits**

The ratio of Liquid Assets to Total Deposit measures the banks potential to meet the obligations of debtors out of available liquidity. Higher the ratio, better the liquidity position of banks to meet the requirement of depositors. Table 31 demonstrates the Liquid Assets to Total Deposits ratio of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, the mean value of liquid assets to total deposits of Bank of Baroda was found to be the highest at 16.79 percent followed by Bank of India at 13.63 percent with a standard deviation at 4.53 percent and 2.76 percent respectively. It indicates the banks have higher liquidity. Vijaya Bank recorded the lowest mean value at 7.93 percent and Indian Bank at 8.25 percent with a standard deviation at 3.22 percent and 1.87 percent respectively.

Among private sector banks, RBL Bank reported the highest mean value at 18.93 percent with a standard deviation at 9.93 percent followed by ICICI bank at 12.93 percent with a standard deviation at 2.10 percent. It indicates that the banks have sufficient liquidity to reimburse the deposit to the depositors. The Karnataka Bank reported the lowest mean value at 7.30 percent with a standard deviation at 1.94 percent. Tamilnad Mercantile Bank reported an average at 7.45 percent with a lower standard deviation at 2.01 percent, implied that the ratio was not much deviated from the mean value.

In foreign banks, Barclays Bank registered the highest mean value at 56.17 percent with a higher standard deviation at 95.48 percent, implying high variation in the ratio of liquid assets to total deposits during the study period. Duetshe Bank reported an average at 46.65 percent with a standard deviation at 43.32 percent. The lowest mean value in the group was reported by Standard Chartered Bank at 11.32 percent with a lower standard deviation at 3.34 percent.

The ratio of liquid assets to total deposits of select public sector banks showed a fluctuating trend throughout the study period. The ratio of private sector banks and foreign banks was declined in 2017-2018 compared to 2003-2004.

Table 32 L3 Liquid asset to total assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	7.48	7.34	7.94	7.30	8.49	6.80	7.53	7.29	7.67	6.39	6.48	7.53	9.30	9.28	8.46	<b>7.68</b>	<b>0.85</b>	<b>11.07</b>
Andhra Bank	9.52	10.76	12.64	8.46	10.06	7.72	12.35	9.59	6.94	4.38	5.64	4.14	4.47	7.95	6.58	<b>8.08</b>	<b>2.66</b>	<b>32.97</b>
Bank of Baroda	8.54	9.78	11.87	12.77	12.42	10.63	12.74	13.93	14.35	15.61	19.84	20.75	19.94	21.65	12.90	<b>14.51</b>	<b>4.02</b>	<b>27.72</b>
Bank of India	10.08	7.92	10.19	12.27	9.91	9.63	11.36	10.62	9.03	12.12	10.71	12.35	16.21	15.26	15.68	<b>11.56</b>	<b>2.39</b>	<b>20.66</b>
Bank of Maharashtra	16.96	11.77	7.65	8.57	8.77	6.95	9.42	5.30	6.30	5.27	4.47	4.62	5.79	10.42	10.14	<b>8.16</b>	<b>3.22</b>	<b>39.43</b>
Canara Bank	12.10	7.85	9.65	9.86	9.87	7.58	7.41	9.13	7.53	8.41	9.11	8.86	10.19	10.01	8.05	<b>9.04</b>	<b>1.24</b>	<b>13.76</b>
Central Bank of India	7.98	10.24	6.39	9.44	10.32	8.28	10.50	7.27	6.14	5.25	4.26	4.74	5.08	23.58	12.00	<b>8.76</b>	<b>4.59</b>	<b>52.38</b>
Corporation Bank	9.73	10.55	10.09	12.73	12.16	12.13	9.66	7.24	7.15	6.55	6.40	5.62	6.45	10.08	5.09	<b>8.78</b>	<b>2.47</b>	<b>28.09</b>
Dena Bank	6.61	7.41	9.43	8.96	10.45	12.09	8.88	7.64	6.35	8.66	5.10	7.45	4.03	4.83	4.92	<b>7.52</b>	<b>2.20</b>	<b>29.24</b>
Indian Bank	8.90	6.43	10.09	8.58	9.61	7.95	8.00	7.03	6.23	5.92	5.60	6.78	5.89	4.60	5.12	<b>7.12</b>	<b>1.61</b>	<b>22.60</b>
Indian Overseas Bank	11.08	9.75	6.25	10.92	10.15	9.02	7.49	6.72	7.40	6.24	6.91	8.72	8.11	9.40	10.71	<b>8.59</b>	<b>1.65</b>	<b>19.22</b>
Oriental Bank of Commerce	8.78	13.95	9.34	10.13	11.24	10.86	10.59	7.18	4.90	4.27	6.48	4.67	4.83	6.88	5.85	<b>8.00</b>	<b>2.84</b>	<b>35.55</b>
Punjab and Sind Bank	10.17	10.72	11.40	12.08	9.51	6.88	8.39	7.14	5.92	5.07	6.68	4.31	4.78	4.75	6.27	<b>7.60</b>	<b>2.51</b>	<b>33.02</b>
Punjab National Bank	8.62	8.78	17.06	9.63	9.46	8.67	7.91	7.85	6.29	5.67	8.21	9.26	11.32	12.25	12.45	<b>9.56</b>	<b>2.72</b>	<b>28.40</b>
Syndicate Bank	13.93	5.89	8.53	10.64	10.88	11.06	9.16	7.64	7.61	7.71	5.96	7.86	9.49	8.44	6.64	<b>8.76</b>	<b>2.10</b>	<b>23.93</b>
UCO Bank	9.56	11.93	5.41	8.30	9.02	9.69	5.88	10.36	7.51	6.20	6.27	9.00	7.58	7.82	6.82	<b>8.09</b>	<b>1.78</b>	<b>22.03</b>
Union Bank of India	6.60	9.07	7.17	8.20	8.12	9.91	8.07	8.50	5.97	5.18	6.51	5.85	7.21	7.23	10.09	<b>7.58</b>	<b>1.40</b>	<b>18.53</b>
United Bank of India	8.39	7.39	8.35	10.13	10.81	10.33	8.28	8.14	7.13	7.84	8.64	4.90	6.43	9.22	13.97	<b>8.66</b>	<b>2.04</b>	<b>23.54</b>
Vijaya Bank	4.65	5.50	8.99	11.97	10.85	12.30	7.90	7.01	6.68	5.99	6.88	5.15	4.55	3.82	2.79	<b>7.00</b>	<b>2.81</b>	<b>40.14</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 32 L3 Liquid asset to total assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	23.45	11.91	7.32	9.44	11.41	10.16	8.41	8.82	4.88	6.00	7.37	7.81	6.17	8.35	6.28	<b>9.19</b>	<b>4.27</b>	<b>46.46</b>
Catholic Syrian Bank	9.79	15.39	10.34	10.42	9.88	13.46	9.27	7.17	8.11	7.92	7.08	5.05	4.64	7.46	7.65	<b>8.91</b>	<b>2.75</b>	<b>30.90</b>
City Union Bank	7.50	6.49	6.45	9.02	11.12	9.57	9.52	8.82	6.19	7.71	8.72	9.10	8.33	8.16	6.60	<b>8.22</b>	<b>1.36</b>	<b>16.49</b>
Dhanalaxmi Bank	11.02	12.85	10.83	17.54	17.17	12.16	9.28	6.55	6.31	6.78	11.40	8.99	6.68	6.55	7.09	<b>10.08</b>	<b>3.59</b>	<b>35.63</b>
DCB Bank	9.85	7.69	7.93	8.86	13.97	11.08	5.40	6.56	5.26	7.82	5.33	4.45	4.66	4.95	7.84	<b>7.44</b>	<b>2.60</b>	<b>34.92</b>
Federal Bank	8.54	9.25	9.05	9.19	8.42	8.82	6.21	7.25	5.83	5.22	6.04	5.75	5.71	6.47	6.64	<b>7.23</b>	<b>1.43</b>	<b>19.82</b>
HDFC Bank	8.38	8.69	9.40	9.91	11.09	9.55	13.45	10.69	6.20	6.81	8.05	6.15	5.25	5.67	11.55	<b>8.72</b>	<b>2.32</b>	<b>26.64</b>
ICICI Bank	6.71	7.68	6.76	10.75	9.50	7.89	10.68	8.38	7.40	7.71	6.96	6.52	8.27	9.77	9.54	<b>8.30</b>	<b>1.38</b>	<b>16.57</b>
IndusInd Bank	14.39	7.39	8.40	12.38	9.34	6.97	7.35	8.81	9.61	9.33	7.76	9.63	7.07	10.42	5.96	<b>8.99</b>	<b>2.13</b>	<b>23.66</b>
Jammu & Kashmir Bank	13.75	13.01	8.65	12.62	13.55	13.99	10.85	7.03	7.39	7.53	5.36	4.92	3.99	6.57	9.20	<b>9.23</b>	<b>3.36</b>	<b>36.46</b>
Karnataka Bank	7.08	10.94	8.12	7.16	8.38	6.38	6.67	6.26	5.13	4.70	4.96	5.02	5.37	5.10	5.11	<b>6.43</b>	<b>1.66</b>	<b>25.90</b>
Karur Vysya Bank	8.41	8.31	8.69	6.97	8.14	8.05	5.63	6.28	5.41	3.84	5.19	5.17	4.90	7.02	6.41	<b>6.56</b>	<b>1.47</b>	<b>22.39</b>
Kotak Mahindra Bank	11.64	6.45	5.82	6.51	7.50	3.97	6.14	4.86	4.01	4.41	6.83	5.90	5.66	10.51	7.40	<b>6.51</b>	<b>2.09</b>	<b>32.18</b>
Lakshmi Vilas Bank	7.33	8.73	9.41	11.00	9.40	10.61	7.94	7.72	5.24	4.94	6.35	5.34	4.76	4.60	4.98	<b>7.22</b>	<b>2.16</b>	<b>29.86</b>
RBL Bank	20.44	16.99	17.60	21.31	32.77	26.97	17.06	10.84	8.13	5.31	6.55	8.01	6.25	8.61	6.93	<b>14.25</b>	<b>8.15</b>	<b>57.18</b>
South Indian Bank	8.71	7.40	12.41	14.25	9.96	9.99	7.78	7.51	6.54	8.71	5.85	6.08	5.15	5.23	5.10	<b>8.04</b>	<b>2.61</b>	<b>32.50</b>
Tamilnad Mercantile Bank	7.56	9.25	7.02	6.76	8.77	8.26	8.79	5.64	3.57	5.00	5.34	4.82	4.53	5.26	5.28	<b>6.39</b>	<b>1.73</b>	<b>27.09</b>
<b>Foreign Banks</b>																		
Bank of America	7.63	8.18	9.85	15.26	17.53	13.73	6.13	4.46	4.09	5.13	2.69	4.91	6.73	21.91	12.71	<b>9.40</b>	<b>5.45</b>	<b>57.99</b>
Barclays Bank	2.11	24.55	52.87	34.38	11.92	3.12	4.44	3.97	2.36	1.32	1.41	3.81	2.29	6.06	4.07	<b>10.58</b>	<b>14.55</b>	<b>137.52</b>
BNP Paribas	15.49	5.56	12.47	11.83	7.71	13.09	7.01	5.42	8.31	2.00	4.16	6.05	5.22	14.74	9.48	<b>8.57</b>	<b>3.96</b>	<b>46.21</b>
Citi Bank	17.57	14.11	13.93	13.56	13.89	15.25	15.90	19.06	14.28	14.81	11.24	6.73	6.36	13.60	11.97	<b>13.48</b>	<b>3.30</b>	<b>24.50</b>
DBS Bank	38.61	40.43	51.63	57.37	20.08	13.01	6.10	7.08	5.19	6.03	4.88	2.43	11.63	10.52	12.75	<b>19.18</b>	<b>17.75</b>	<b>92.51</b>
Duetsche Bank	37.70	45.90	43.01	28.43	16.67	19.29	6.62	5.02	11.82	9.39	6.91	14.10	13.37	16.63	15.86	<b>19.38</b>	<b>12.79</b>	<b>65.97</b>
HSBC	5.71	7.93	7.67	14.65	12.10	11.87	9.02	9.01	10.57	8.61	11.57	18.78	13.02	17.65	17.14	<b>11.69</b>	<b>3.81</b>	<b>32.57</b>
Standard Chartered Bank	4.82	4.13	10.42	6.73	7.72	4.33	5.39	6.40	4.00	4.60	5.64	6.89	5.38	6.38	11.50	<b>6.29</b>	<b>2.12</b>	<b>33.76</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **L3 – Liquid Assets to Total Assets**

The ratio of Liquid Assets to Total Assets measures the liquidity position of banks to meet the expected and unexpected demand from depositors. Higher the ratio shows better the debt paying capacity of the banks. Table 32 presents the ratio of Liquid Assets to Total Assets of select Scheduled Commercial Banks from 2003-2004 to 2017-2018.

In public sector banks, Bank of Baroda registered the highest mean value at 14.51 percent with a standard deviation at 4.02 percent followed by Bank of India at 11.56 percent with a standard deviation at 2.39 percent. It indicates that the banks have adequate liquidity to meet the obligation of short-term demand from depositors. Vijaya Bank recorded the lowest mean value at 7 percent with a standard deviation at 2.81 percent followed by Indian Bank at 7.12 percent with a standard deviation at 1.61 percent. The lower standard deviation implied, the ratio of liquid assets to total assets was clustered among the mean during the study period.

In private sector banks, RBL Bank has more ability to meet the liquidity requirement by reporting the highest mean value at 14.25 percent with a standard deviation at 8.15 percent followed by Dhanalaxmi Bank at 10.08 percent with a standard deviation at 3.59 percent respectively. The mean value of Tamilnad Mercantile Bank was found to be the lowest at 6.39 percent with a standard deviation at 1.73 percent followed by Karnataka Bank at 6.43 percent with a standard deviation at 1.66 percent. It implied that the banks have to improve their liquidity position.

In foreign banks, the liquid asset to total assets of Duetsche Bank was observed to be the highest at 19.38 percent with a standard deviation at 12.79 percent. Standard Chartered Bank recorded the lowest mean value at 6.29 percent with a standard deviation at 2.19 percent followed by BNP Paribas Bank at 8.57 percent with a standard deviation at 3.96 percent.

The ratio of Liquid Asset to Total Asset of select public sector banks recorded a volatile trend throughout the study period. The ratio of majority of the private sector banks declined in 2017-2018 compared to 2003-2004. The ratio of foreign banks recorded a fluctuating trend during the study period.

Table 33 L4 Government Security to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	33.88	34.62	25.63	21.64	21.02	21.90	25.46	23.20	24.71	22.39	22.65	20.08	19.35	20.06	24.80	<b>24.09</b>	<b>4.42</b>	<b>18.33</b>
Andhra Bank	32.60	26.81	23.97	23.88	23.11	22.20	21.83	20.82	21.45	22.53	23.86	22.95	24.77	25.04	24.39	<b>24.02</b>	<b>2.74</b>	<b>11.39</b>
Bank of Baroda	33.00	30.64	22.93	18.34	19.08	18.02	18.12	16.84	15.70	18.85	14.67	13.83	15.44	16.43	20.14	<b>19.47</b>	<b>5.34</b>	<b>27.42</b>
Bank of India	22.15	21.38	20.60	18.20	19.16	19.52	21.62	19.74	19.17	18.09	17.50	16.98	17.57	18.05	19.76	<b>19.30</b>	<b>1.55</b>	<b>8.02</b>
Bank of Maharashtra	37.78	38.98	31.51	23.89	21.97	27.40	25.64	24.25	22.62	21.68	22.27	20.07	20.07	20.73	24.33	<b>25.55</b>	<b>5.80</b>	<b>22.72</b>
Canara Bank	28.30	26.26	23.03	22.47	23.70	23.14	23.69	21.16	23.70	24.71	21.86	22.88	22.80	23.13	20.64	<b>23.43</b>	<b>1.84</b>	<b>7.86</b>
Central Bank of India	38.55	35.35	31.04	23.17	20.90	25.59	24.49	22.73	22.05	22.41	23.39	24.13	21.74	22.18	24.88	<b>25.51</b>	<b>5.08</b>	<b>19.91</b>
Corporation Bank	29.74	24.52	21.96	21.93	21.22	20.19	22.20	19.57	22.63	24.07	23.25	21.48	23.93	21.96	27.66	<b>23.09</b>	<b>2.59</b>	<b>11.22</b>
Dena Bank	34.63	33.07	26.47	24.12	21.91	20.55	23.11	21.53	22.21	23.59	23.24	21.96	22.53	26.61	26.84	<b>24.82</b>	<b>4.00</b>	<b>16.10</b>
Indian Bank	39.46	38.30	33.41	29.28	25.57	23.15	23.55	22.28	21.96	20.07	21.32	21.17	20.66	26.80	24.77	<b>26.12</b>	<b>6.07</b>	<b>23.26</b>
Indian Overseas Bank	36.00	31.29	26.50	25.52	25.39	22.51	25.11	21.81	23.23	22.65	22.29	23.92	24.25	24.61	24.07	<b>25.28</b>	<b>3.63</b>	<b>14.35</b>
Oriental Bank of Commerce	30.36	26.91	23.00	22.25	22.64	22.14	23.76	22.63	22.11	21.92	20.99	22.48	21.87	19.64	24.10	<b>23.12</b>	<b>2.47</b>	<b>10.68</b>
Punjab and Sind Bank	33.08	0.00	30.60	25.73	23.96	26.53	26.93	23.65	23.41	23.24	22.92	21.30	20.56	22.00	21.11	<b>23.00</b>	<b>7.02</b>	<b>30.51</b>
Punjab National Bank	32.31	32.63	22.99	22.54	22.21	22.08	22.24	21.01	21.77	22.46	20.39	20.53	18.94	20.49	20.08	<b>22.84</b>	<b>3.93</b>	<b>17.19</b>
Syndicate Bank	33.85	35.67	25.18	25.25	23.47	20.98	20.34	19.36	20.00	18.67	19.16	20.52	19.49	19.61	22.54	<b>22.94</b>	<b>5.07</b>	<b>22.09</b>
UCO Bank	30.93	28.64	27.39	22.53	22.52	21.34	23.27	21.92	22.54	22.21	22.85	23.28	29.55	26.67	25.08	<b>24.71</b>	<b>3.01</b>	<b>12.18</b>
Union Bank of India	27.29	21.86	22.16	21.80	22.40	21.61	21.82	19.66	19.25	19.77	19.67	19.07	17.74	19.51	20.16	<b>20.92</b>	<b>2.17</b>	<b>10.37</b>
United Bank of India	45.76	42.27	36.20	27.17	23.46	22.67	25.41	21.24	22.23	22.37	28.04	28.45	27.98	27.18	25.30	<b>28.38</b>	<b>7.12</b>	<b>25.07</b>
Vijaya Bank	37.23	35.63	29.98	22.95	24.30	22.92	25.47	22.31	24.74	23.48	24.20	24.47	24.16	25.82	19.62	<b>25.82</b>	<b>4.67</b>	<b>18.10</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 33 L4 Government Security to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	20.94	19.94	23.68	22.42	18.41	19.23	18.93	18.21	20.49	21.29	18.16	17.80	17.88	15.46	15.05	<b>19.19</b>	<b>2.28</b>	<b>11.86</b>
Catholic Syrian Bank	37.03	26.19	24.94	23.72	22.98	23.21	23.66	22.28	23.31	21.97	23.13	25.59	31.20	31.14	21.35	<b>25.45</b>	<b>4.22</b>	<b>16.57</b>
City Union Bank	36.44	28.72	21.68	21.31	20.32	21.16	22.24	19.77	20.96	19.86	21.28	19.69	20.15	18.97	19.12	<b>22.11</b>	<b>4.44</b>	<b>20.06</b>
Dhanalaxmi Bank	31.30	24.11	23.35	21.49	22.88	24.59	20.77	23.18	28.36	30.22	25.73	25.69	24.64	25.35	24.72	<b>25.09</b>	<b>2.84</b>	<b>11.33</b>
DCB Bank	32.00	34.55	27.14	25.91	22.31	20.99	25.46	23.52	23.27	21.55	21.70	21.52	20.82	19.82	16.23	<b>23.79</b>	<b>4.54</b>	<b>19.07</b>
Federal Bank	29.45	30.14	27.44	23.99	23.92	21.28	21.17	19.27	19.02	20.44	21.11	20.30	21.03	18.72	17.66	<b>22.33</b>	<b>3.76</b>	<b>16.82</b>
HDFC Bank	27.21	21.80	26.68	24.69	23.76	28.45	22.94	19.34	22.55	21.20	19.25	20.39	21.28	18.80	17.74	<b>22.40</b>	<b>3.12</b>	<b>13.95</b>
ICICI Bank	23.70	20.48	20.32	19.60	18.86	16.71	18.84	15.99	17.85	17.32	16.07	16.55	15.59	14.51	16.03	<b>17.89</b>	<b>2.33</b>	<b>13.04</b>
IndusInd Bank	24.99	21.80	26.01	23.12	23.31	22.79	24.05	21.93	20.64	19.21	17.64	15.99	19.65	17.58	18.19	<b>21.13</b>	<b>2.90</b>	<b>13.70</b>
Jammu & Kashmir Bank	23.77	23.69	24.01	19.31	21.18	20.18	19.84	20.44	19.16	19.60	19.01	17.72	17.38	19.90	19.17	<b>20.29</b>	<b>1.99</b>	<b>9.80</b>
Karnataka Bank	28.08	26.85	27.11	24.44	23.46	25.90	23.65	21.10	22.35	21.31	22.12	22.01	20.40	21.64	18.58	<b>23.27</b>	<b>2.64</b>	<b>11.34</b>
Karur Vysya Bank	23.72	23.36	20.66	21.74	20.81	22.36	25.90	23.95	24.58	27.02	23.62	21.63	22.66	20.83	20.90	<b>22.92</b>	<b>1.86</b>	<b>8.14</b>
Kotak Mahindra Bank	39.07	20.39	23.30	29.44	28.63	28.39	25.88	25.96	25.26	25.76	19.94	21.57	21.19	16.85	19.53	<b>24.74</b>	<b>5.27</b>	<b>21.29</b>
Lakshmi Vilas Bank	28.35	26.39	23.72	20.37	23.76	20.15	24.57	22.33	21.99	21.52	23.12	20.87	20.36	22.40	23.79	<b>22.91</b>	<b>2.23</b>	<b>9.74</b>
RBL Bank	24.66	23.40	21.42	19.27	19.20	18.32	18.81	15.61	19.85	25.17	21.99	27.97	26.23	20.13	18.30	<b>21.36</b>	<b>3.35</b>	<b>15.68</b>
South Indian Bank	38.69	30.37	22.68	21.47	21.01	19.86	22.03	20.69	20.34	20.05	20.92	20.88	21.98	22.92	19.48	<b>22.89</b>	<b>4.90</b>	<b>21.43</b>
Tamilnad Mercantile Bank	26.18	24.49	23.43	20.96	21.60	21.85	22.27	20.69	21.67	20.78	22.60	22.33	22.08	25.44	23.03	<b>22.63</b>	<b>1.59</b>	<b>7.03</b>
<b>Foreign Banks</b>																		
Bank of America	25.90	21.78	21.80	21.29	24.45	33.86	50.15	22.18	35.33	27.28	34.38	45.36	42.39	21.79	30.92	<b>30.59</b>	<b>9.12</b>	<b>29.82</b>
Barclays Bank	23.93	30.05	20.80	17.32	17.11	23.48	30.17	29.84	18.57	25.11	20.95	17.39	17.15	13.31	18.29	<b>21.56</b>	<b>5.16</b>	<b>23.94</b>
BNP Paribas	29.12	22.95	27.09	25.19	33.26	34.74	32.26	22.80	29.25	18.69	17.98	22.86	20.32	16.26	22.35	<b>25.01</b>	<b>5.56</b>	<b>22.23</b>
Citi Bank	18.19	19.62	20.92	22.31	20.97	22.21	28.80	26.45	32.99	32.03	34.18	40.97	45.28	38.87	44.09	<b>29.86</b>	<b>8.97</b>	<b>30.04</b>
DBS Bank	41.46	17.86	13.67	11.17	30.51	31.20	27.70	17.41	20.77	26.75	25.49	33.74	31.34	18.22	30.86	<b>25.21</b>	<b>8.13</b>	<b>32.27</b>
Duetsche Bank	23.71	18.01	19.34	24.20	37.86	27.73	23.90	18.87	17.94	19.61	27.31	18.32	16.89	16.90	22.03	<b>22.17</b>	<b>5.44</b>	<b>24.53</b>
HSBC	34.83	27.28	22.96	18.63	19.19	18.89	31.04	22.66	19.45	26.12	35.09	30.44	30.06	27.24	28.37	<b>26.15</b>	<b>5.45</b>	<b>20.84</b>
Standard Chartered Bank	21.02	20.94	18.47	17.00	16.14	14.40	16.83	18.60	18.27	20.95	18.00	21.42	21.40	21.03	24.92	<b>19.29</b>	<b>2.60</b>	<b>13.46</b>

Source: Compiled and Calculated using Capital line database and RBI reports

#### **L4 – Government Securities to Total Assets**

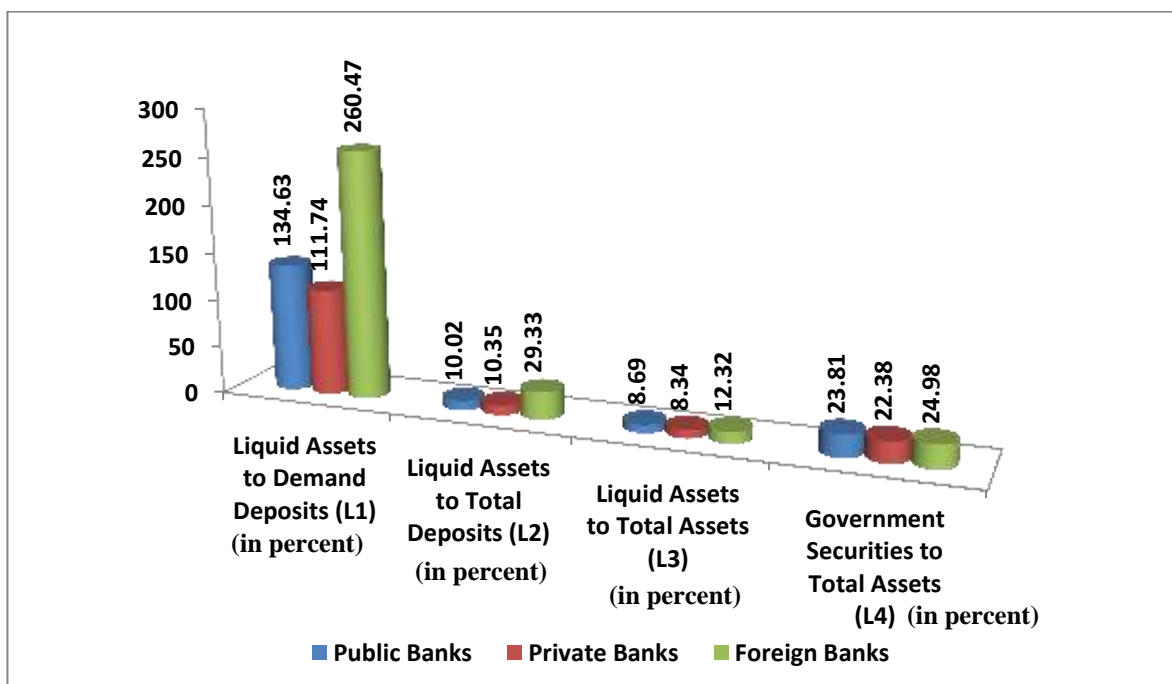
The investments in Government securities are the most risk free and liquid investment for the banks. Investment in government securities as proportion to total assets measures the amount of risk-free investment. It is primarily to meet the requirement of SLR. Table 33 illustrates the ratio of Government Securities to Total Assets of select Scheduled Commercial Bank from 2003-2004 to 2017-2018.

Among public sector banks, United Bank of India maintained a good liquidity position by recording the highest mean value at 28.38 percent with a standard deviation at 7.12 percent followed by Indian Bank at 26.12 percent with a standard deviation at 6.07 percent respectively. Bank of India recorded the lowest mean value at 19.30 percent with a standard deviation at 1.55 percent and Bank of Baroda at 19.47 percent with a standard deviation at 5.34 percent.

In private sector banks, the average ratio of government securities to total assets of Catholic Syrian Bank was found to be the highest at 25.45 percent with a standard deviation at 4.22 percent followed by Dhanalaxmi Bank at 25.09 percent with a standard deviation at 2.33 percent. The ratio of ICICI Bank was found to be the lowest 17.89 percent followed by Axis Bank at 19.19 percent with a standard deviation at 2.33 percent and 2.28 percent respectively.

In foreign banks, Bank of America reported the highest mean value at 30.59 percent with a standard deviation at 9.12 percent followed by Citi Bank at 29.86 percent with a standard deviation at 8.97 percent indicating more risk free investments in investment portfolio of the banks. Standard Chartered Bank reported the lowest mean value at 19.29 percent with a standard deviation at 2.60 percent.

The ratio of Government Securities to Total Assets of public sector banks and private sector banks significantly declined in 2017-2018 compared to 2003-2004, due to reduction in SLR from 25 percent in 2003-2004 to 19.5 percent in 2017-2018. The ratio of foreign banks was found to be fluctuating during the study period.



**Figure 6**  
**Group-wise Liquidity of Scheduled Commercial Banks**

Figure 6 demonstrates group-wise Liquidity position of Scheduled Commercial Banks. The proportion of Liquid Assets to Demand Deposits (L1) was found to be the highest in foreign banks group at 260.47 percent, reflecting adequate liquidity to meet the obligation of demand depositors. The average ratio of public sector banks was at 134.63 percent and the private sector banks at 111.74 percent, which was lowest compared to other sector banks.

The average ratio of Liquid Assets to Total Deposits (L2) was higher in the foreign banks at 29.33 percent, implying the banks have sufficient liquidity to reimburse the deposits when demanded. The average ratio of private sector banks was at 10.35 percent and the ratio was found to be the lowest in public sector group at 10.02 percent.

The foreign banks group reported the highest average in terms of Liquid Assets to Total Assets (L3) at 12.32 percent stating that the banks have adequate liquid assets to meet their short-term obligations. The average ratio of public sector banks was at 8.69 percent and private sector banks at 8.34 percent, being the lowest ratio in the banking group.

The proportion of Government Securities to Total Assets (L4) was highest in the foreign banks at 29.98 percent on average followed by public sector banks at 23.81 percent. The ratio was found to be the lowest in private sector banks at 22.34 percent, indicates the risk-free investment in the portfolio of the banks.

To find whether there was any significant mean difference in the liquidity variables of select scheduled commercial banks, t-test was applied and the results are presented in Table 34.

*H<sub>01</sub>: There is no significant mean difference in liquidity of select scheduled commercial banks in India.*

**Table 34**  
**Results of t-test of Liquidity of Select Scheduled Commercial Banks**

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>t-test value</b>	<b>P-value</b>	<b>Significant</b>
Liquid Assets to Demand Deposits (in percent)	191.1x\1	377.01	3.415	.001	Significant
Liquid Assets to Total Deposits (in percent)	13.66	10.05	9.014	.000	Significant
Liquid Assets to Total Assets (in percent)	9.21	2.92	20.870	.000	Significant
Government Securities to Total Assets (in percent)	23.46	2.65	58.531	.000	Significant

**Source: Computed data**

Table 34 reveals the results of t-test. It was found that there is a significant mean difference in respect of liquidity. The p-values were found to be significant at one percent level. The null hypothesis is not supported statistically. Hence null hypothesis is rejected. **There is a significant mean difference in liquidity ratios of the select scheduled commercial banks.**

## **SENSITIVITY TO RISK**

The component sensitivity to risk is evaluated through changes in interest rate, foreign exchange rate and price of equity shares. The change in the variables influence banks earning ability. Grier (2007) pointed out that sensitivity refers to the risk which arises due to changes in market conditions and could adversely impact earnings and/or capital. Market risk encompasses exposures associated with changes in interest rates, foreign exchange rates, commodity prices, equity prices, etc. While all of these items are important, the primary risk in most banks is interest rate risk. Hence, the following ratios were calculated to measure the sensitivity to risk of the banks:

S1: Total Securities to Total Assets, and

S2: Risk Sensitive Assets to Risk Sensitive Liabilities.

Table 35 S1 Total Securities to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	42.97	41.20	31.39	26.88	25.57	24.76	27.29	25.13	26.89	24.75	25.69	22.50	22.47	21.99	26.62	<b>27.74</b>	<b>6.06</b>	<b>21.85</b>
Andhra Bank	37.26	31.59	26.95	26.64	25.28	24.03	22.64	21.56	22.20	23.68	25.97	24.19	25.93	26.17	25.75	<b>25.99</b>	<b>3.81</b>	<b>14.67</b>
Bank of Baroda	40.55	36.52	27.24	21.48	21.60	20.04	19.70	18.01	16.73	20.20	15.53	14.47	16.01	17.09	21.32	<b>21.77</b>	<b>7.29</b>	<b>33.49</b>
Bank of India	26.66	25.75	24.11	21.17	21.14	21.24	22.86	20.83	20.77	19.52	19.12	18.43	18.61	19.30	21.33	<b>21.39</b>	<b>2.40</b>	<b>11.24</b>
Bank of Maharashtra	42.74	43.18	35.40	26.97	24.15	29.02	27.11	25.60	23.89	22.83	23.56	21.36	21.19	22.01	25.77	<b>27.65</b>	<b>6.92</b>	<b>25.03</b>
Canara Bank	34.37	31.70	26.84	25.85	26.11	24.74	25.05	22.15	24.72	25.91	23.88	24.52	24.26	24.71	22.53	<b>25.82</b>	<b>3.11</b>	<b>12.05</b>
Central Bank of India	48.88	44.42	37.67	28.07	24.32	28.28	26.44	24.83	24.27	24.61	27.26	27.76	27.73	25.68	29.61	<b>29.99</b>	<b>7.30</b>	<b>24.35</b>
Corporation Bank	35.85	28.93	25.47	24.16	22.38	21.73	23.70	20.80	23.85	25.47	25.20	22.64	24.69	23.10	29.29	<b>25.15</b>	<b>3.65</b>	<b>14.51</b>
Dena Bank	43.35	39.58	31.19	28.05	25.15	23.61	24.40	22.57	23.25	24.65	25.61	24.07	26.01	29.95	30.36	<b>28.12</b>	<b>5.88</b>	<b>20.90</b>
Indian Bank	46.00	44.56	38.22	32.87	29.41	26.11	25.45	23.93	23.16	21.30	23.45	23.57	24.68	30.68	28.00	<b>29.43</b>	<b>7.53</b>	<b>25.60</b>
Indian Overseas Bank	42.45	37.16	31.07	28.25	27.58	24.43	27.10	23.36	24.68	24.23	24.72	26.28	27.88	27.78	25.97	<b>28.20</b>	<b>5.03</b>	<b>17.85</b>
Oriental Bank of Commerce	40.43	33.58	27.95	26.05	25.90	24.81	25.63	24.21	23.54	23.21	23.26	24.59	25.42	22.47	29.07	<b>26.67</b>	<b>4.57</b>	<b>17.13</b>
Punjab and Sind Bank	43.76	0.00	36.93	30.50	27.37	28.99	29.74	25.50	25.33	24.95	26.42	24.52	26.79	28.55	26.94	<b>27.09</b>	<b>8.76</b>	<b>32.33</b>
Punjab National Bank	40.49	39.51	27.59	26.26	25.07	24.65	24.01	22.99	24.06	25.13	24.21	23.61	22.47	24.69	24.66	<b>26.63</b>	<b>5.38</b>	<b>20.21</b>
Syndicate Bank	36.57	38.47	27.81	27.68	25.58	22.54	21.78	20.55	21.17	19.77	21.09	22.17	21.79	21.48	24.43	<b>24.86</b>	<b>5.51</b>	<b>22.16</b>
UCO Bank	38.08	33.55	30.90	25.06	25.03	24.03	25.45	23.55	24.15	23.42	25.30	25.27	33.57	31.05	31.93	<b>28.02</b>	<b>4.52</b>	<b>16.14</b>
Union Bank of India	37.52	30.35	28.04	26.34	26.31	24.29	24.05	21.37	21.22	22.09	23.26	21.47	21.33	23.74	24.50	<b>25.06</b>	<b>4.21</b>	<b>16.81</b>
United Bank of India	54.72	48.55	40.62	31.31	25.83	24.89	28.48	24.02	24.77	24.59	29.94	30.30	29.77	30.07	30.13	<b>31.87</b>	<b>8.78</b>	<b>27.55</b>
Vijaya Bank	43.28	40.13	34.35	26.43	27.45	25.29	27.22	24.25	26.42	25.11	27.03	27.31	28.55	28.29	22.10	<b>28.88</b>	<b>5.67</b>	<b>19.62</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 35 S1 Total Securities to Total Assets of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	32.24	36.35	38.47	32.66	28.81	28.57	26.87	25.94	28.85	29.17	24.49	23.39	22.35	20.08	19.70	<b>27.86</b>	<b>5.32</b>	<b>19.09</b>
Catholic Syrian Bank	40.99	28.87	26.81	24.93	23.92	23.79	24.18	22.83	23.68	22.32	24.28	26.75	32.04	32.40	22.63	<b>26.69</b>	<b>4.91</b>	<b>18.38</b>
City Union Bank	39.89	31.22	23.79	22.65	21.31	22.20	22.84	20.23	21.31	20.16	21.57	19.91	20.29	19.07	19.20	<b>23.04</b>	<b>5.32</b>	<b>23.08</b>
Dhanalaxmi Bank	36.37	26.76	24.89	22.02	23.33	25.14	23.35	23.62	28.95	31.00	26.28	26.13	25.47	26.09	27.36	<b>26.45</b>	<b>3.45</b>	<b>13.04</b>
DCB Bank	35.05	37.99	29.90	27.37	23.18	21.38	25.78	23.62	23.31	21.58	22.00	21.78	21.13	19.99	16.44	<b>24.70</b>	<b>5.56</b>	<b>22.53</b>
Federal Bank	35.86	33.72	29.72	26.00	25.62	23.27	23.07	20.77	20.92	21.93	22.86	21.45	22.98	20.13	18.58	<b>24.46</b>	<b>4.83</b>	<b>19.76</b>
HDFC Bank	43.83	35.18	37.83	32.84	28.48	29.53	23.52	19.60	22.86	21.79	20.02	20.78	22.13	21.20	21.13	<b>26.72</b>	<b>7.30</b>	<b>27.33</b>
ICICI Bank	29.46	23.33	21.85	20.87	20.06	17.85	20.60	20.66	22.31	21.04	18.50	18.70	17.14	16.17	18.05	<b>20.44</b>	<b>3.10</b>	<b>15.18</b>
IndusInd Bank	26.31	22.81	26.92	23.49	23.67	22.99	24.20	22.24	21.14	20.32	19.29	17.47	20.94	19.09	20.34	<b>22.08</b>	<b>2.56</b>	<b>11.58</b>
Jammu & Kashmir Bank	37.41	35.15	31.04	23.04	24.37	23.28	23.36	24.86	23.00	23.28	21.88	20.23	19.85	22.07	20.36	<b>24.88</b>	<b>5.16</b>	<b>20.73</b>
Karnataka Bank	45.25	36.21	36.93	30.94	29.89	32.62	27.26	23.78	25.44	24.04	25.34	24.84	24.16	24.56	21.35	<b>28.84</b>	<b>6.30</b>	<b>21.86</b>
Karur Vysya Bank	29.58	27.70	24.13	24.51	22.89	24.29	27.47	24.95	25.46	27.68	24.53	22.55	23.79	22.27	22.92	<b>24.98</b>	<b>2.12</b>	<b>8.47</b>
Kotak Mahindra Bank	39.82	22.44	25.12	30.35	29.32	28.63	28.27	28.22	27.75	30.85	25.68	26.11	24.23	19.44	22.25	<b>27.23</b>	<b>4.59</b>	<b>16.84</b>
Lakshmi Vilas Bank	32.10	28.01	24.94	21.28	24.72	21.09	25.32	23.83	23.16	22.42	24.59	22.55	21.87	23.58	25.74	<b>24.35</b>	<b>2.74</b>	<b>11.24</b>
RBL Bank	31.46	27.70	24.86	20.64	21.64	20.70	21.13	17.31	25.78	34.49	28.68	31.85	30.58	24.47	21.69	<b>25.53</b>	<b>4.91</b>	<b>19.22</b>
South Indian Bank	41.56	32.39	24.29	23.81	23.01	21.52	22.97	21.24	21.16	20.70	22.38	21.97	22.85	24.40	20.84	<b>24.34</b>	<b>5.35</b>	<b>22.00</b>
Tamilnad Mercantile Bank	46.25	39.94	37.49	30.52	27.59	25.45	24.85	22.31	23.03	22.12	24.64	24.77	24.39	28.66	27.02	<b>28.60</b>	<b>6.88</b>	<b>24.07</b>
<b>Foreign Banks</b>																		
Bank of America	25.91	29.14	28.31	29.01	26.41	33.86	50.75	22.18	35.40	27.30	34.57	45.36	42.39	21.79	30.92	<b>32.22</b>	<b>8.09</b>	<b>25.11</b>
Barclays Bank	32.35	41.49	24.24	17.38	18.98	24.62	34.18	33.37	23.37	29.47	22.87	20.49	20.51	23.70	28.65	<b>26.38</b>	<b>6.48</b>	<b>24.56</b>
BNP Paribas	33.43	25.78	27.22	25.49	33.43	34.87	32.39	23.94	29.25	18.69	17.98	23.21	21.00	20.41	27.58	<b>26.31</b>	<b>5.35</b>	<b>20.34</b>
Citi Bank	22.85	24.34	24.07	23.55	21.27	22.48	29.07	26.46	33.04	32.04	34.19	40.98	45.29	38.88	45.50	<b>30.93</b>	<b>8.15</b>	<b>26.36</b>
DBS Bank	41.46	17.86	17.36	13.67	30.81	31.41	27.84	17.52	20.85	27.32	26.26	34.89	32.78	20.86	33.34	<b>26.28</b>	<b>7.71</b>	<b>29.34</b>
Duetsche Bank	26.56	20.20	22.69	25.50	38.93	29.52	24.16	22.05	20.83	21.87	28.33	19.12	18.94	18.51	24.29	<b>24.10</b>	<b>5.13</b>	<b>21.29</b>
HSBC	40.91	32.17	28.24	20.52	19.86	20.57	34.84	25.54	22.19	32.39	38.73	33.18	33.71	30.31	32.74	<b>29.73</b>	<b>6.45</b>	<b>21.71</b>
Standard Chartered Bank	29.98	27.45	23.31	19.95	16.68	14.79	17.97	18.79	18.41	21.36	19.12	22.45	22.18	22.41	25.49	<b>21.36</b>	<b>3.95</b>	<b>18.50</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **S1 – Total Securities to Total Assets**

The ratio of Total Securities to Total Assets indicates the risk taking ability of a bank. It helps to get an idea about alternative investment avenue. This ratio explains the correlation between banks securities and total assets, and the percentage change of its portfolio with respect to alteration in interest rates or other issues associated with the securities. Higher the ratio, higher the risk. Lower the ratio lower the risk portfolio of banks. Table 35 portrays the ratio of Total Securities to Total Assets of select Scheduled Commercial Banks from 2003-04 to 2017-2018.

In public sector banks, the average ratio of United Bank of India was found to be the highest at 31.87 percent with a higher standard deviation at 8.78 percent followed by Central Bank of India at 29.99 percent with a standard deviation at 7.30 percent. The lowest average in the group was reported by Bank of India at 21.39 percent with a standard deviation at 2.40 percent followed by Bank of Baroda at 21.77 percent with a higher standard deviation at 7.29 percent.

Among private sector banks, the average total securities to total assets of Karnataka Bank was found to be the highest at 28.84 percent with a higher standard deviation at 6.30 percent followed by Tamilnad Mercantile Bank at 28.60 percent with a standard deviation at 6.88 percent. It signifies that the exposure of earnings of the banks is significant to change in portfolio of securities. The ICICI Bank reported the lowest average of 20.44 percent with a standard deviation at 3.10 percent followed by IndusInd Bank at 22.08 percent with a standard deviation at 2.56 percent.

In foreign banks, Bank of America reported the highest mean value at 32.22 percent with a standard deviation at 8.09 percent. The lowest mean value was reported by Standard Chartered Bank at 21.36 percent with a standard deviation at 3.95 percent.

The ratio of Total Securities to Total Assets of select banks under the study significantly declined throughout the study period. The ratio of public sector banks and private sector banks decreased in 2017-2018 compared to 2003-2004. All the banks recorded an average of below 30 percent except United Bank of India at 31.87 percent. Foreign banks had shown an increasing trend during the study period. The ratio of all the foreign banks was found to be high in 2017-2018.

Table 36 S2 Risk Sensitive Assets to Risk Sensitive Liabilities of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	0.982	0.982	0.971	1.006	0.997	1.003	0.995	1.000	1.005	1.007	1.013	1.006	0.988	0.985	0.963	<b>0.993</b>	<b>0.014</b>	<b>1.42</b>
Andhra Bank	0.976	1.012	0.981	1.004	0.990	0.973	0.969	0.981	0.996	1.008	0.987	1.008	1.003	1.003	0.971	<b>0.991</b>	<b>0.015</b>	<b>1.47</b>
Bank of Baroda	1.021	1.015	1.005	0.984	1.007	0.989	0.967	0.953	0.945	0.960	0.891	0.875	0.888	0.885	0.929	<b>0.954</b>	<b>0.049</b>	<b>5.13</b>
Bank of India	0.967	0.996	0.990	0.965	0.994	0.972	0.952	0.947	0.969	0.921	0.923	0.936	0.886	0.916	0.898	<b>0.949</b>	<b>0.033</b>	<b>3.52</b>
Bank of Maharashtra	0.959	0.976	1.016	1.013	0.991	0.966	0.950	0.992	0.983	0.997	1.008	0.986	0.970	0.911	0.905	<b>0.975</b>	<b>0.032</b>	<b>3.29</b>
Canara Bank	0.967	1.024	1.001	1.006	1.013	0.977	0.987	0.968	0.978	0.982	0.960	0.946	0.935	0.932	0.943	<b>0.975</b>	<b>0.027</b>	<b>2.82</b>
Central Bank of India	0.968	0.957	0.990	0.974	0.943	0.973	0.920	0.958	0.989	1.001	1.005	0.989	0.981	0.768	0.869	<b>0.952</b>	<b>0.060</b>	<b>6.26</b>
Corporation Bank	1.019	1.016	1.014	0.980	0.982	0.932	0.970	0.983	0.993	1.003	0.985	0.946	0.935	0.911	0.926	<b>0.973</b>	<b>0.034</b>	<b>3.47</b>
Dena Bank	1.026	0.991	0.965	0.979	0.970	0.929	0.967	0.968	0.984	0.949	0.991	0.937	0.950	0.944	0.941	<b>0.966</b>	<b>0.025</b>	<b>2.56</b>
Indian Bank	1.003	1.022	0.972	1.033	0.993	1.011	1.020	1.020	1.026	1.026	1.011	0.998	1.002	1.001	1.000	<b>1.009</b>	<b>0.015</b>	<b>1.53</b>
Indian Overseas Bank	0.959	0.987	1.048	1.007	0.983	0.971	0.980	0.976	0.989	1.001	0.998	0.981	0.977	0.955	0.949	<b>0.984</b>	<b>0.023</b>	<b>2.37</b>
Oriental Bank of Commerce	1.003	0.898	0.987	0.990	0.985	0.957	0.953	1.009	1.018	1.023	1.015	0.986	0.990	0.955	0.956	<b>0.982</b>	<b>0.032</b>	<b>3.25</b>
Punjab and Sind Bank	0.938	0.960	0.922	0.933	0.951	0.973	0.958	0.979	1.000	1.014	0.988	0.981	0.982	0.975	0.951	<b>0.967</b>	<b>0.025</b>	<b>2.54</b>
Punjab National Bank	1.002	1.049	0.916	1.014	1.012	0.982	0.988	0.982	1.007	1.022	0.987	0.970	0.934	0.948	0.943	<b>0.984</b>	<b>0.035</b>	<b>3.57</b>
Syndicate Bank	0.901	1.014	1.005	0.967	0.959	0.933	0.993	0.978	0.985	1.002	0.991	0.986	0.979	0.980	0.981	<b>0.977</b>	<b>0.028</b>	<b>2.84</b>
UCO Bank	0.965	0.964	1.020	0.996	0.991	0.939	0.983	0.979	0.995	1.009	0.995	0.973	0.956	0.932	0.930	<b>0.975</b>	<b>0.027</b>	<b>2.72</b>
Union Bank of India	1.014	1.001	1.022	1.021	0.995	0.957	0.978	0.970	0.998	1.005	0.987	0.966	0.955	0.956	0.935	<b>0.984</b>	<b>0.026</b>	<b>2.63</b>
United Bank of India	0.974	1.024	1.039	1.008	0.963	0.997	1.012	0.970	0.991	1.002	0.990	0.976	0.963	0.969	0.956	<b>0.989</b>	<b>0.024</b>	<b>2.40</b>
Vijaya Bank	1.025	1.006	1.002	0.985	0.969	0.958	0.999	0.988	0.993	1.002	0.986	0.957	0.964	0.965	0.946	<b>0.983</b>	<b>0.021</b>	<b>2.18</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 36 S2 Risk Sensitive Assets to Risk Sensitive Liabilities of Select Scheduled Commercial Banks

(in percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	0.799	0.929	1.041	1.016	1.006	0.964	1.012	0.998	1.039	1.054	1.055	1.020	1.020	0.995	1.013	<b>0.997</b>	<b>0.062</b>	<b>6.20</b>
Catholic Syrian Bank	0.953	0.911	0.963	0.961	0.964	0.913	0.963	0.985	0.967	0.969	0.973	0.960	0.956	0.954	0.946	<b>0.956</b>	<b>0.019</b>	<b>2.02</b>
City Union Bank	0.983	0.999	1.004	0.982	0.973	0.975	0.973	0.983	1.004	0.997	0.999	0.983	1.002	1.007	1.033	<b>0.993</b>	<b>0.016</b>	<b>1.59</b>
Dhanalaxmi Bank	0.942	0.903	0.937	0.874	0.879	0.959	0.948	0.966	0.970	0.974	0.949	0.934	0.929	0.933	0.940	<b>0.936</b>	<b>0.029</b>	<b>3.09</b>
DCB Bank	0.960	0.984	0.975	0.986	0.996	1.024	1.035	1.016	1.046	1.037	1.053	1.048	1.073	1.063	1.069	<b>1.024</b>	<b>0.035</b>	<b>3.43</b>
Federal Bank	0.972	0.960	0.975	0.984	1.083	1.036	1.070	1.044	1.047	1.039	1.033	0.985	0.988	0.995	1.008	<b>1.015</b>	<b>0.037</b>	<b>3.64</b>
HDFC Bank	1.134	1.104	1.105	1.116	1.081	1.054	1.097	1.047	1.095	1.086	1.061	1.052	1.054	1.080	1.003	<b>1.078</b>	<b>0.032</b>	<b>2.98</b>
ICICI Bank	1.066	1.086	1.076	1.031	1.096	1.041	1.022	1.064	1.060	1.072	1.084	1.025	1.026	1.034	1.001	<b>1.052</b>	<b>0.027</b>	<b>2.60</b>
IndusInd Bank	0.872	0.952	0.947	0.936	0.966	0.961	0.982	1.020	0.999	1.030	1.021	0.974	1.049	1.052	1.028	<b>0.986</b>	<b>0.047</b>	<b>4.81</b>
Jammu & Kashmir Bank	0.936	0.975	0.999	0.991	0.979	1.005	1.012	1.005	1.023	1.014	1.026	0.993	0.985	0.988	0.976	<b>0.994</b>	<b>0.022</b>	<b>2.23</b>
Karnataka Bank	0.995	0.979	1.014	1.017	1.001	1.021	1.000	1.015	1.025	1.029	1.028	0.972	0.977	0.996	0.984	<b>1.004</b>	<b>0.019</b>	<b>1.87</b>
Karur Vysya Bank	1.030	1.014	1.014	1.036	1.005	1.000	1.015	1.012	1.011	1.016	1.004	1.019	1.013	1.014	1.028	<b>1.015</b>	<b>0.009</b>	<b>0.93</b>
Kotak Mahindra Bank	1.002	1.125	1.132	1.105	1.153	1.150	1.109	1.135	1.100	1.089	1.101	1.110	1.077	1.090	1.115	<b>1.106</b>	<b>0.035</b>	<b>3.17</b>
Lakshmi Vilas Bank	1.015	0.981	0.975	0.975	0.979	0.946	0.990	0.982	0.992	0.996	0.980	1.004	1.001	1.005	0.986	<b>0.987</b>	<b>0.016</b>	<b>1.62</b>
RBL Bank	0.844	0.890	0.877	0.977	0.896	1.000	1.087	1.389	1.123	1.088	1.053	1.016	1.022	1.009	1.056	<b>1.022</b>	<b>0.128</b>	<b>12.49</b>
South Indian Bank	0.976	1.000	0.962	1.143	0.993	0.973	0.988	0.980	0.989	0.986	1.008	0.963	0.966	0.975	0.969	<b>0.991</b>	<b>0.043</b>	<b>4.29</b>
Tamilnad Mercantile Bank	1.008	1.025	1.055	1.049	1.028	1.030	1.025	1.049	1.062	1.065	1.048	1.052	1.024	1.051	1.044	<b>1.041</b>	<b>0.016</b>	<b>1.53</b>
<b>Foreign Banks</b>																		
Bank of America	1.079	1.279	1.412	1.322	1.242	1.088	1.219	1.355	1.294	1.272	1.277	1.248	1.213	1.331	1.222	<b>1.257</b>	<b>0.086</b>	<b>6.84</b>
Barclays Bank	2.271	3.057	3.056	1.409	1.454	1.244	1.204	1.193	1.253	1.287	1.389	1.329	1.359	1.493	1.470	<b>1.631</b>	<b>0.611</b>	<b>37.49</b>
BNP Paribas	0.981	1.112	1.203	1.305	1.262	1.184	1.237	1.245	1.274	1.348	1.258	1.157	1.137	1.097	1.069	<b>1.191</b>	<b>0.096</b>	<b>8.03</b>
Citi Bank	0.916	0.984	0.976	0.975	0.991	0.916	0.974	0.923	0.966	0.977	1.029	1.110	1.092	1.101	1.034	<b>0.998</b>	<b>0.061</b>	<b>6.16</b>
DBS Bank	0.951	1.139	0.694	0.547	0.941	0.978	1.027	0.987	1.000	0.993	1.053	1.072	1.041	1.001	0.957	<b>0.959</b>	<b>0.144</b>	<b>15.04</b>
Duetsche Bank	0.605	0.558	0.623	0.805	1.080	1.158	1.118	1.177	1.158	1.147	1.158	1.170	1.136	1.186	1.141	<b>1.015</b>	<b>0.228</b>	<b>22.44</b>
HSBC	1.065	1.098	1.073	1.046	1.029	1.119	1.093	1.131	1.115	1.099	1.108	1.093	1.097	1.133	1.105	<b>1.094</b>	<b>0.028</b>	<b>2.61</b>
Standard Chartered Bank	1.006	1.048	1.024	1.069	1.055	1.033	1.055	1.051	1.082	1.157	1.163	1.209	1.193	1.172	1.126	<b>1.096</b>	<b>0.065</b>	<b>5.91</b>

Source: Compiled and Calculated using Capital line database and RBI reports

## **S2 – Risk Sensitive Assets to Risk Sensitive Liabilities**

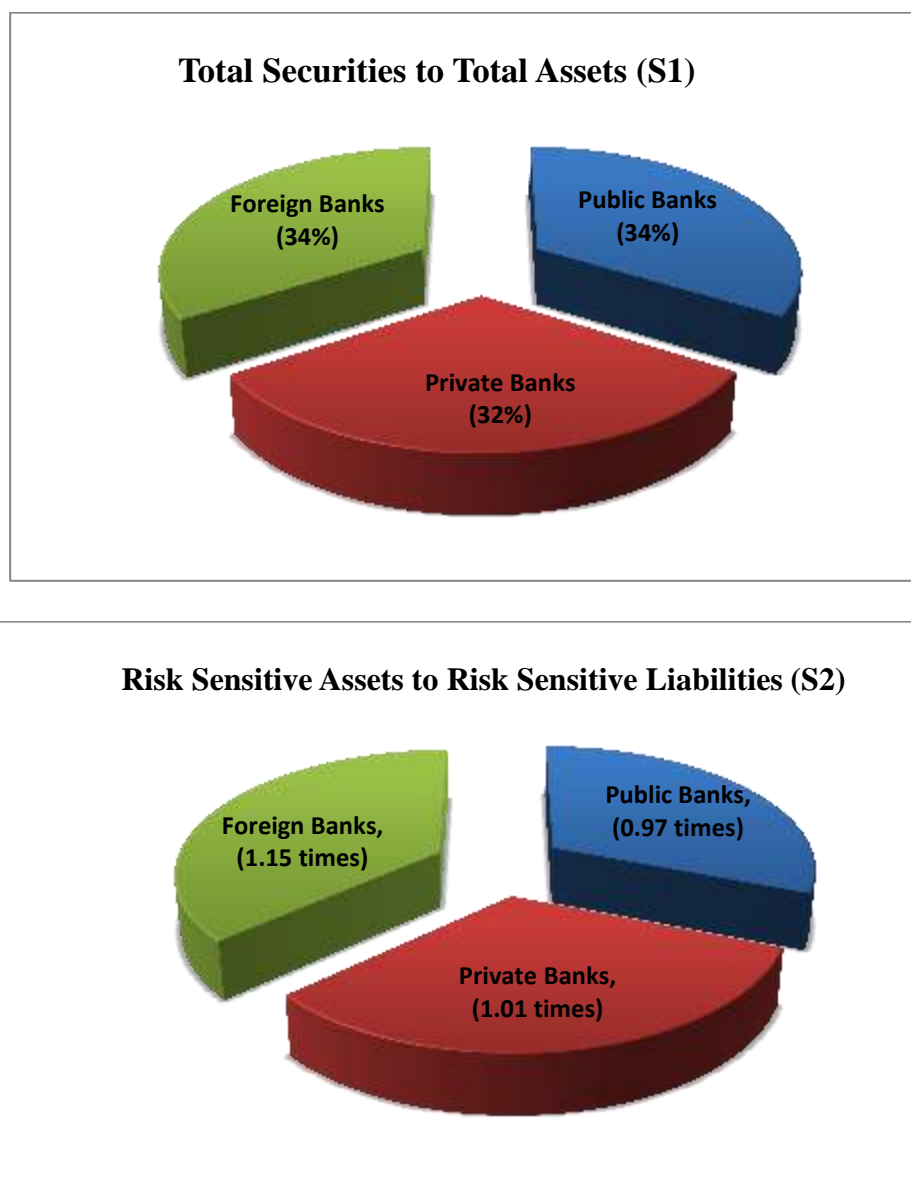
The difference between Risk Sensitive Assets and Risk Sensitive Liabilities is termed as GAP. The sign and magnitude of the GAP are used to assess the financial risk of the banks. The unexpected change in interest rate significantly affects the earnings of the banks. A positive GAP indicates that risk sensitive assets are more than risk sensitive liabilities and in earnings perspective, it would benefit from a rise in interest rate. A negative GAP indicates that risk sensitive liabilities are more than risk sensitive assets and fall in interest rate would result in more benefit from earnings perspective. The ratio of Risk Sensitive Assets to Risk Sensitive Liabilities of select Scheduled Commercial Banks are presented in Table 36.

In public sector banks, Indian Bank recorded the highest average at 1.009 with a standard deviation at 0.015 percent followed by Allahabad Bank at 0.993 with a standard deviation at 0.014 percent. Bank of India reported the lowest average at 0.949 with a standard deviation at 0.033 percent.

Among private sector banks, Kotak Mahindra Bank recorded the highest average at 1.106 with a standard deviation of 0.035 percent followed by HDFC Bank and ICICI Bank at 1.078 and 1.052 with a standard deviation of 0.032 and 0.027 percent respectively. It implied that risk sensitive assets are more than risk sensitive liabilities as bank will gain more benefit when interest rate rises. Dhanalaxmi Bank reported the lowest average at 0.936 with a standard deviation at 0.029 percent.

In foreign banks, the ratio of Barclays Bank was found to be the highest at 1.631 followed by Bank of America at 1.257 with a standard deviation at 0.611 and 0.086 percent respectively. DSB Bank was found to be the lowest at 0.959 with a standard deviation of 0.061 percent, implying lower deviation in risk sensitive assets to risk sensitive liability during the study period.

The ratio of Risk Sensitive Assets to Risk Sensitive Liabilities of all the select scheduled commercial banks recorded a positive ratio throughout the study period. Almost all the public sector banks recorded a fluctuating trend and Indian Bank alone reported an average of above one percent during the study period. Majority of the private sector banks and foreign banks reported an average of more than one percent.



**Figure 7**  
**Group-wise Sensitivity to Risk of Scheduled**  
**Commercial Banks**

Figure 7 illustrates group-wise Sensitivity to Risk of Scheduled Commercial Banks. The average ratio of Total Securities to Total Assets (S1) was found to be more in foreign banks at 34 percent, indicating the banks have significant earning exposure in relation to change in portfolio of securities. The public sector banks reported an average at 34 percent and private sector banks at 32 percent.

The proportion of Risk Sensitive Assets to Risk Sensitive Liabilities (S2) was observed to be more in foreign banks at 1.15 times, indicating the risk sensitive assets are more than risk sensitive liabilities, as the banks will gain more benefit when interest rate rise. The average of private sector banks was at 1.01 percent and public sector banks at 1.01 percent.

To find whether there was any significant mean difference in the sensitivity to risk variables of select scheduled commercial banks, t-test was applied and the results are presented in Table 37.

*H<sub>01</sub>: There is no significant mean difference in sensitivity to risk of select scheduled commercial banks in India.*

**Table 37**

**Results of t-test of Sensitivity to risk of Select Scheduled Commercial Banks**

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>t-test value</b>	<b>P-value</b>	<b>Significant</b>
Total Securities to Total Assets (in percent)	26.33	2.72	64.123	.000	Significant
Risk sensitive Assets to Risk sensitive Liabilities (in times)	1.02	0.11	60.434	.000	Significant

**Source: Computed data**

It is observed from the table 35, that the variables total securities to total assets and risk sensitive assets to risk sensitive liabilities varied during the study period. The p-values of the variables were found to be highly significant at one percent level. Hence null hypothesis is rejected. **There is a significant mean difference in the sensitivity to risk ratios of the select scheduled commercial banks.**

## **4.2 TRENDS IN NON-PERFORMING ASSETS OF SELECT BANKS**

Robust asset quality is a pre-eminent indicator for a sound banking system. The loans and advances granted by the banks to generate interest income. This helps the institution to have sufficient income and cash flow to meet the immediate needs of creditors and depositors and helps to generate profit for shareholders. In contrast, poor asset quality is probably the fundamental cause of a bank failure. Rise in level of NPA highly influences the financial performance and erosion of capital results in reduction of profitability, liquidity and returns on investments of the banks. Therefore, the quality of loans and advances granted by banks is an important yardstick for the health of the banks. It exposes the bank's creditworthiness and efficiency in overall allocation of resources. Currently, increasing level of NPA is the major issue confronted by the banking sector. Almost all the select banks are facing this challenging issue. Especially the public sector banks are under pressure in the recovery of non-performing assets. Hence, the following variables were studied to understand the asset quality of the select scheduled commercial banks:

- Movements of Percent Change in Non Performing Assets (NPAs)
- Gross Non-Performing Asset Generation rate, and
- Recovery of NPAs through different channels.

Table 38 Movement of Percent Change in Non-Performing Assets (NPAs)

(in Percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	0.00	-0.25	-0.09	0.79	-0.09	0.06	0.11	0.57	0.48	2.78	0.39	0.04	0.72	0.31	-0.09	<b>0.38</b>	<b>0.71</b>	<b>186.62</b>
Andhra Bank	-0.42	-0.59	0.07	-0.10	0.14	0.48	0.21	1.86	1.76	2.19	0.39	0.10	0.64	0.72	0.22	<b>0.51</b>	<b>0.79</b>	<b>155.10</b>
Bank of Baroda	0.00	-40.53	-16.40	-3.16	-1.62	-9.02	34.14	31.31	95.18	171.57	43.96	33.72	140.49	-6.83	29.88	<b>33.51</b>	<b>57.47</b>	<b>171.50</b>
Bank of India	-9.82	-24.61	-37.62	-16.24	-27.10	6.12	251.39	-11.89	87.99	62.65	24.72	82.25	107.11	-9.61	11.47	<b>33.12</b>	<b>73.38</b>	<b>221.57</b>
Bank of Maharashtra	0.00	-0.03	0.19	-0.17	-0.08	0.07	1.44	-0.07	-0.24	-0.16	3.24	1.24	0.66	0.62	-0.15	<b>0.44</b>	<b>0.90</b>	<b>206.68</b>
Canara Bank	-0.05	-0.18	-0.22	0.05	-0.03	0.68	0.19	0.29	0.45	0.56	0.13	0.47	1.38	0.04	0.32	<b>0.27</b>	<b>0.39</b>	<b>144.66</b>
Central Bank of India	0.00	-0.36	0.19	-0.10	0.21	0.00	-0.32	0.17	4.43	0.08	0.33	0.02	0.95	0.07	0.22	<b>0.39</b>	<b>1.12</b>	<b>283.51</b>
Corporation Bank	0.26	-0.17	-0.26	-0.08	-0.11	0.09	0.43	1.02	1.19	0.62	1.25	0.40	1.05	0.28	0.20	<b>0.41</b>	<b>0.49</b>	<b>119.12</b>
Dena Bank	-0.11	-0.33	-0.27	-0.16	-0.41	0.45	0.36	0.28	0.04	0.60	0.98	0.66	0.74	0.48	0.01	<b>0.22</b>	<b>0.42</b>	<b>187.12</b>
Indian Bank	0.00	-35.43	-28.60	-42.19	-4.45	-3.87	54.49	173.95	201.44	99.22	15.91	13.87	72.21	3.45	6.30	<b>35.09</b>	<b>70.61</b>	<b>201.24</b>
Indian Overseas Bank	0.00	0.00	-0.30	0.15	0.41	1.75	1.00	-0.33	0.44	1.11	0.40	0.73	0.96	0.03	0.03	<b>0.43</b>	<b>0.56</b>	<b>132.77</b>
Oriental Bank of Commerce	-1.00	0.00	-0.50	0.32	1.50	-0.18	0.64	0.30	1.62	0.18	0.35	0.23	1.06	0.42	0.01	<b>0.33</b>	<b>0.66</b>	<b>201.55</b>
Punjab and Sind Bank	0.00	-0.12	-0.57	-0.65	-0.13	0.17	0.49	1.04	1.30	1.03	0.73	0.18	0.30	0.48	0.05	<b>0.29</b>	<b>0.55</b>	<b>191.26</b>
Punjab National Bank	-70.60	-73.40	75.96	245.25	3.88	-65.00	272.05	107.67	118.49	62.46	37.04	55.25	130.07	-7.68	48.87	<b>62.69</b>	<b>99.64</b>	<b>158.94</b>
Syndicate Bank	0.00	-0.20	-0.27	0.25	0.59	0.01	0.52	0.07	0.15	-0.05	1.42	0.41	1.35	0.15	0.27	<b>0.31</b>	<b>0.48</b>	<b>153.53</b>
UCO Bank	0.08	0.08	-0.03	0.28	0.09	-0.26	0.19	0.89	0.24	0.80	-0.13	0.78	0.81	-0.06	0.32	<b>0.27</b>	<b>0.36</b>	<b>133.51</b>
Union Bank of India	-32.57	25.47	-21.35	-27.91	-78.78	155.50	196.17	86.82	67.74	10.85	59.25	29.56	102.72	34.27	29.17	<b>42.46</b>	<b>70.23</b>	<b>165.39</b>
United Bank of India	0.00	-0.07	0.09	0.10	-0.08	0.72	0.48	-0.03	0.42	0.83	1.37	-0.12	0.50	0.08	0.57	<b>0.32</b>	<b>0.41</b>	<b>127.30</b>
Vijaya Bank	0.00	-0.15	0.68	0.01	0.26	0.61	0.99	0.27	0.35	-0.09	0.39	0.31	1.58	-0.04	0.22	<b>0.36</b>	<b>0.44</b>	<b>123.47</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 38 Movement of Percent Change in Non-Performing Assets (NPAs)

(in Percent)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	-0.31	0.93	-0.03	0.21	-0.07	0.32	0.28	-0.02	0.15	0.49	0.46	0.29	0.92	2.42	0.92	<b>0.46</b>	<b>0.64</b>	<b>137.04</b>
Catholic Syrian Bank	0.00	-0.02	-0.14	-0.20	-0.11	0.65	-0.20	0.54	-0.22	0.18	0.95	0.89	-0.05	0.30	-0.07	<b>0.17</b>	<b>0.39</b>	<b>234.54</b>
City Union Bank	0.00	-0.31	-0.27	-0.27	0.23	0.37	-0.35	0.22	0.12	0.78	1.05	0.18	0.39	0.26	0.16	<b>0.17</b>	<b>0.38</b>	<b>222.61</b>
Dhanalaxmi Bank	-0.24	-0.25	-0.23	-0.28	-0.42	0.52	0.49	-0.35	1.11	3.50	0.16	-0.16	-0.24	-0.14	0.17	<b>0.24</b>	<b>0.96</b>	<b>395.58</b>
DCB Bank	0.00	0.98	-0.50	-0.48	-0.38	3.71	-0.15	-0.62	-0.27	0.62	0.51	0.43	-0.08	0.28	0.18	<b>0.28</b>	<b>1.02</b>	<b>361.04</b>
Federal Bank	-0.28	-0.13	-0.43	-0.42	-0.34	0.58	0.89	0.48	0.04	1.17	-0.26	0.16	1.55	-0.01	0.65	<b>0.24</b>	<b>0.59</b>	<b>242.77</b>
HDFC Bank	-34.88	116.92	155.95	30.74	47.13	110.24	-37.53	-24.39	18.87	33.10	74.87	9.30	47.32	39.66	41.05	<b>41.89</b>	<b>53.45</b>	<b>127.59</b>
ICICI Bank	0.00	9.68	-30.07	89.24	75.22	30.46	-15.65	-37.33	-22.70	19.87	47.85	89.68	107.23	94.53	10.34	<b>31.22</b>	<b>47.85</b>	<b>153.25</b>
IndusInd Bank	0.00	0.15	-0.20	0.40	0.06	-0.38	-0.43	-0.28	0.30	0.44	0.35	0.14	0.53	0.36	0.70	<b>0.14</b>	<b>0.33</b>	<b>233.72</b>
Jammu & Kashmir Bank	0.00	0.19	-0.18	0.45	0.05	0.41	-0.78	-0.17	-0.07	0.12	0.85	11.12	0.75	0.12	0.15	<b>0.87</b>	<b>2.77</b>	<b>319.11</b>
Karnataka Bank	-0.19	-0.38	-0.36	0.27	-0.08	0.09	0.62	0.49	0.55	-0.13	0.42	0.16	0.28	0.23	0.44	<b>0.16</b>	<b>0.32</b>	<b>197.28</b>
Karur Vysya Bank	-0.34	-0.17	-0.41	-0.64	0.08	0.49	0.20	-0.55	4.68	0.38	0.29	1.01	-0.23	3.78	0.80	<b>0.62</b>	<b>1.50</b>	<b>239.78</b>
Kotak Mahindra Bank	0.00	3.29	0.01	13.45	0.27	0.44	-0.09	-0.41	0.12	0.31	0.84	0.06	1.07	0.36	-0.03	<b>1.31</b>	<b>3.35</b>	<b>255.20</b>
Lakshmi Vilas Bank	0.00	0.05	-0.52	0.02	0.05	0.09	2.98	-0.72	1.43	0.60	0.56	-0.32	-0.23	0.81	2.48	<b>0.49</b>	<b>1.03</b>	<b>211.41</b>
RBL Bank	0.00	0.22	-0.46	-0.20	-0.43	-0.06	1.08	-0.39	0.22	-0.18	3.43	0.27	2.22	0.53	0.65	<b>0.46</b>	<b>1.04</b>	<b>226.50</b>
South Indian Bank	-0.12	0.07	-0.42	-0.34	-0.56	2.95	-0.54	-0.03	0.27	2.26	0.13	0.27	2.32	-0.43	1.10	<b>0.46</b>	<b>1.11</b>	<b>240.09</b>
Tamilnad Mercantile Bank	0.00	-0.27	-0.12	-0.41	-0.49	0.10	-0.10	0.47	1.14	0.71	0.96	-0.35	0.48	0.90	0.33	<b>0.22</b>	<b>0.52</b>	<b>231.57</b>
<b>Foreign Banks</b>																		
Bank of America	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	<b>-0.07</b>	<b>0.25</b>	<b>-374.17</b>
Barclays Bank	0.00	0.00	0.00	0.00	0.00	13.94	-0.20	-0.69	0.03	0.17	-0.40	-0.96	-0.82	81.32	-1.00	<b>6.09</b>	<b>20.42</b>	<b>335.10</b>
BNP Paribas	0.00	0.00	0.00	0.00	0.00	0.00	-1.00	0.00	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	<b>-0.13</b>	<b>0.34</b>	<b>-254.95</b>
Citi Bank	0.00	-0.15	0.29	0.44	0.40	1.23	-0.25	-0.37	-0.14	0.81	-0.09	-0.65	0.23	-0.17	0.21	<b>0.12</b>	<b>0.46</b>	<b>385.92</b>
DBS Bank	0.00	0.00	0.00	0.00	0.00	15.41	1.68	-0.42	2.32	3.25	3.69	-0.57	0.17	-0.40	-0.58	<b>1.64</b>	<b>3.92</b>	<b>239.62</b>
Duetsche Bank	0.00	0.00	0.00	0.00	35.74	4.00	0.33	-0.68	-0.66	1.52	-0.11	0.83	1.37	1.97	-0.07	<b>2.95</b>	<b>8.84</b>	<b>299.77</b>
HSBC	0.00	-0.06	0.54	0.01	0.77	1.24	0.39	-0.54	-0.11	-0.46	-0.18	1.44	-0.11	-0.03	-0.29	<b>0.17</b>	<b>0.57</b>	<b>329.56</b>
Standard Chartered Bank	0.00	166.46	69.83	13.97	-20.03	48.85	12.92	-77.28	193.27	161.06	-69.66	-24.71	209.92	-83.02	208.05	<b>53.97</b>	<b>103.60</b>	<b>191.95</b>

Source: Compiled and Calculated using Capital line database and RBI reports

### **Movement of Percent Change in Non Performing Assets (NPA)**

The movement of NPAs is computed by comparing current year NPA with previous year NPA, which also takes into consideration the additions in NPA during the year and reductions in NPA during the year. Table 38 demonstrates the movement of percent change in NPA of select Scheduled Commercial Banks during the study period from 2003-2004 to 2017-2018.

Among select public sector banks, Punjab National Bank reported the highest mean value at 62.69 percent with a high standard deviation at 99.64 percent followed by Union Bank of India at 42.46 percent with a standard deviation at 70.23 percent. The percent change in Net NPA was found to be higher during the period of 2014-2015 to 2015-2016. The lowest mean value in the group was reported by Dena Bank at 0.22 percent with a standard deviation at 0.42 percent.

While considering private sector banks, HDFC Bank reported the highest average at 41.89 percent followed by ICICI Bank at 31.22 percent with a standard deviation at 53.45 percent and 47.85 percent respectively. IndusInd Bank recorded the lowest average at 0.14 percent followed by Karnataka Bank at 0.16 percent with a standard deviation at 0.33 percent and 0.32 percent respectively.

In foreign banks, the movement of percent change in NPAs of Standard Chartered Bank was found to be the highest at 53.97 percent with a higher standard deviation at 103.60 percent stating very high fluctuation in NPAs of the bank. Bank of America registered the lowest average in the group at 0.07 percent with a lower standard deviation at 0.25 percent. Bank of America and BNP Paribas Bank reported a negative mean value at -0.07 percent and -0.13 percent stating the banks are more concerned in controlling their level of NPAs.

Among the select banks, the average ratio was observed to be higher in Bank of Baroda (33.51), Bank of India (33.12), Indian Bank (35.09), Punjab and National Bank (62.69), Union Bank of India (42.46) under public sector and HDFC Bank (41.89), ICICI Bank (31.22) under private sector group. In foreign group Standard Chartered Bank (53.97) and Barclays Bank (6.09) reported the highest ratio. All other select banks reported the movement percent change in NPA as below one percent. All the select banks showed a fluctuating trend during the study period.

Table 39 Gross NPA Generation Rate

(in times)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Public Sector Banks</b>																		
Allahabad Bank	1.09	0.78	0.61	0.84	0.75	0.87	1.02	1.15	1.22	2.88	2.73	2.21	5.37	4.80	5.09	<b>2.09</b>	<b>1.65</b>	<b>78.72</b>
Andhra Bank	1.09	0.46	0.38	0.51	0.36	0.29	0.44	0.73	1.03	1.87	1.69	1.85	3.16	4.27	5.72	<b>1.59</b>	<b>1.56</b>	<b>98.24</b>
Bank of Baroda	1.27	0.70	0.48	0.54	0.56	0.44	0.60	0.53	0.77	1.25	1.04	1.19	4.14	1.92	3.35	<b>1.25</b>	<b>1.06</b>	<b>85.00</b>
Bank of India	1.42	0.80	0.63	0.67	0.76	0.93	1.51	0.83	1.40	1.63	1.54	2.69	6.31	3.23	6.39	<b>2.05</b>	<b>1.83</b>	<b>89.29</b>
Bank of Maharashtra	0.69	0.68	0.88	0.79	0.52	0.62	1.23	0.91	0.96	0.69	1.90	3.17	3.55	5.71	3.66	<b>1.73</b>	<b>1.51</b>	<b>87.05</b>
Canara Bank	1.90	1.19	1.06	0.77	0.79	1.08	1.23	1.04	1.23	1.41	1.72	1.98	4.44	1.98	3.99	<b>1.72</b>	<b>1.05</b>	<b>61.26</b>
Central Bank of India	0.00	1.14	0.98	0.86	0.53	0.59	0.56	0.67	2.98	1.91	2.61	2.11	4.95	3.14	5.22	<b>1.88</b>	<b>1.56</b>	<b>82.88</b>
Corporation Bank	0.78	0.54	0.53	0.51	0.26	0.27	0.43	0.57	0.73	0.93	1.60	1.65	4.50	3.13	6.55	<b>1.53</b>	<b>1.76</b>	<b>114.98</b>
Dena Bank	2.09	1.10	1.26	1.70	1.08	1.39	1.09	1.07	0.83	0.99	1.94	2.83	4.57	5.22	4.96	<b>2.14</b>	<b>1.48</b>	<b>69.19</b>
Indian Bank	0.00	0.57	0.40	0.31	0.63	0.27	0.58	0.78	1.33	1.78	1.51	1.73	2.80	1.53	1.99	<b>1.08</b>	<b>0.77</b>	<b>71.04</b>
Indian Overseas Bank	1.04	1.00	0.80	0.86	0.65	1.87	2.39	1.21	1.45	2.29	2.51	4.21	7.65	5.26	6.79	<b>2.67</b>	<b>2.18</b>	<b>81.98</b>
Oriental Bank of Commerce	1.29	3.47	0.63	0.51	0.64	0.44	0.82	0.96	2.19	1.60	1.83	1.96	4.32	4.82	5.31	<b>2.05</b>	<b>1.59</b>	<b>77.56</b>
Punjab and Sind Bank	0.00	1.25	0.57	0.35	0.34	0.34	0.37	0.56	0.76	1.36	1.71	1.27	1.91	3.00	2.28	<b>1.07</b>	<b>0.83</b>	<b>77.27</b>
Punjab National Bank	1.02	0.57	0.62	1.27	0.98	0.70	0.96	1.15	1.46	1.81	1.96	2.76	6.33	3.11	5.77	<b>2.03</b>	<b>1.73</b>	<b>85.38</b>
Syndicate Bank	0.91	0.77	0.91	0.83	1.18	0.74	1.07	1.02	1.73	1.00	1.47	1.81	3.96	2.72	4.42	<b>1.63</b>	<b>1.12</b>	<b>68.80</b>
UCO Bank	1.32	1.10	0.89	1.34	1.15	0.60	0.80	1.67	1.33	2.59	1.65	3.07	6.10	4.28	6.95	<b>2.32</b>	<b>1.90</b>	<b>81.88</b>
Union Bank of India	1.16	0.70	0.84	0.73	0.61	0.73	0.91	1.24	1.43	1.27	1.54	1.48	3.19	2.92	4.36	<b>1.54</b>	<b>1.05</b>	<b>68.31</b>
United Bank of India	0.00	0.60	0.77	0.96	0.60	1.31	1.27	1.09	1.93	2.17	6.40	3.32	3.87	2.50	5.94	<b>2.18</b>	<b>1.87</b>	<b>85.58</b>
Vijaya Bank	1.14	1.10	1.22	0.94	0.72	1.07	1.72	1.66	2.15	1.44	1.58	1.98	4.01	1.87	2.47	<b>1.67</b>	<b>0.78</b>	<b>46.70</b>

Source: Compiled and Calculated using Capital line database and RBI reports

(Continued)

Table 39 Gross NPA Generation Rate

(in times)

Banks	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	Mean	SD	CV
<b>Private Sector Banks</b>																		
Axis Bank	1.00	0.34	0.36	0.23	0.35	0.70	1.00	0.60	0.64	0.59	0.66	0.62	1.36	3.62	4.83	1.13	1.27	112.45
Catholic Syrian Bank	0.00	0.99	0.89	0.72	0.64	0.89	0.70	1.11	0.84	1.27	2.57	2.94	2.57	2.44	1.77	1.36	0.85	62.87
City Union Bank	0.00	1.40	0.93	0.73	0.80	0.93	0.93	0.83	0.79	0.97	1.83	1.53	1.35	1.36	1.44	1.05	0.43	40.42
Dhanalaxmi Bank	1.67	0.56	0.86	0.76	0.39	0.66	0.64	0.29	0.63	3.65	3.32	2.35	2.01	1.25	2.92	1.46	1.09	74.21
DCB Bank	0.00	4.66	1.71	0.66	1.36	5.11	3.14	0.68	0.78	0.67	0.75	1.08	1.18	1.09	1.15	1.60	1.45	90.60
Federal Bank	1.44	1.13	0.77	0.72	0.80	1.48	1.71	1.69	1.15	1.13	0.91	0.98	2.00	0.93	1.59	1.23	0.38	31.09
HDFC Bank	0.25	0.50	0.77	0.85	0.90	1.86	1.17	0.52	0.47	0.78	0.94	0.81	0.77	0.82	1.22	0.84	0.37	43.54
ICICI Bank	1.13	0.66	0.40	0.63	0.92	1.33	1.76	0.70	0.61	0.67	0.76	1.23	2.31	4.33	3.24	1.38	1.08	78.21
IndusInd Bank	3.30	1.85	0.62	1.13	0.67	0.79	0.63	0.42	0.50	0.72	0.72	0.79	0.59	0.80	1.50	1.00	0.72	71.71
Jammu & Kashmir Bank	0.67	0.62	0.60	0.95	0.70	1.07	0.44	0.57	0.52	0.63	0.52	3.33	2.97	4.00	3.46	1.40	1.25	89.15
Karnataka Bank	1.25	0.42	0.39	0.80	0.71	0.71	1.11	1.02	1.04	0.99	1.39	1.79	1.98	2.10	3.01	1.25	0.69	55.01
Karur Vysya Bank	0.67	0.66	0.58	0.48	0.53	0.48	0.55	0.19	0.46	0.43	0.29	1.16	1.92	2.15	3.12	0.91	0.80	88.32
Kotak Mahindra Bank	0.23	0.41	0.41	1.42	0.88	1.82	1.67	0.43	0.46	0.55	1.07	0.71	1.49	0.84	0.70	0.87	0.49	56.22
Lakshmi Vilas Bank	0.81	1.09	0.24	1.36	0.71	0.44	3.71	1.03	1.75	2.26	3.24	1.04	0.69	1.69	7.21	1.82	1.73	94.99
RBL Bank	0.00	1.84	0.32	0.49	0.38	0.28	0.71	0.15	0.25	0.32	0.35	0.18	0.51	1.10	0.92	0.52	0.45	86.93
South Indian Bank	1.45	0.97	0.90	1.06	0.34	0.84	0.68	0.32	0.42	1.06	1.14	0.85	2.53	2.28	2.19	1.14	0.67	58.99
Tamilnad Mercantile Bank	0.00	0.85	1.31	1.03	0.64	0.58	0.61	0.62	0.87	0.78	2.59	1.56	1.48	1.97	3.28	1.21	0.83	68.46
<b>Foreign Banks</b>																		
Bank of America	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.32	0.00	0.03	0.08	285.62
Barclays Bank	0.00	0.00	0.00	0.00	0.41	4.87	7.12	1.90	1.40	0.87	0.54	0.03	0.01	0.28	0.00	1.16	2.02	173.61
BNP Paribas	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.14	0.00	0.00	0.01	0.00	0.00	0.00	0.04	0.10	279.20
Citi Bank	0.00	0.00	0.24	0.37	0.49	2.39	2.51	0.97	0.55	0.81	0.45	0.40	0.49	0.53	0.55	0.72	0.72	100.59
DBS Bank	0.00	0.00	0.00	0.00	0.06	0.22	0.60	0.25	0.38	1.04	3.89	0.81	1.46	1.35	1.06	0.74	0.98	131.85
Duetsche Bank	0.00	0.00	0.00	0.03	0.26	1.59	1.51	0.33	0.07	0.09	0.06	0.15	0.20	1.27	0.49	0.40	0.55	135.34
HSBC	0.00	0.00	0.86	0.80	1.44	2.27	2.65	0.30	0.43	0.19	0.23	0.40	0.24	0.43	0.23	0.70	0.78	111.71
Standard Chartered Bank	0.00	0.00	0.95	0.74	0.45	0.66	1.66	0.93	2.14	1.42	2.30	1.27	3.97	1.40	2.97	1.39	1.06	75.94

Source: Compiled and Calculated using Capital line database and RBI reports

### **Gross NPA Generation Rate**

Gross NPA Generation Rate is calculated by dividing the additions of NPA during the year by total assets. It is measured to evaluate how banks are focusing their attention to manage asset quality. Rather than focusing accumulated part of NPA, this ratio gives attention to fresh NPA generation in every year. The fresh Gross NPA Generation Rate of select Scheduled Commercial Banks are presented in Table 39.

Among public sector banks, Indian Overseas Bank reported the highest gross NPA generation rate at 2.67 percent with a standard deviation at 2.18 percent followed by Allahabad Bank at 2.09 percent with a standard deviation at 1.65 percent. The results revealed that increase in level of fresh NPA was higher in the year 2015-2016. Lack of quality credit control, results in more creation of NPAs. Punjab and Sind Bank recorded the lowest average at 1.07 percent with a standard deviation at 0.83 percent followed by Indian Bank at 1.08 percent with a standard deviation at 0.77 percent, implying low variation in gross NPA generation rate during the study period.

In private sector banks, the average gross NPA generation rate of Lakshmi Vilas Bank was found to be the highest at 1.82 percent with a standard deviation at 1.73 percent followed by Jammu and Kashmir Bank at 1.40 percent with a standard deviation at 1.25 percent. It indicates decline in the quality of assets during the study period. The lowest average was reported by RBL Bank at 0.52 percent with a standard deviation at 0.45 percent followed by HDFC Bank at 0.84 percent with a standard deviation at 0.37 percent.

In foreign banks, the highest average in generation of gross NPA was reported by Standard Chartered Bank at 1.39 percent and the lowest average was reported by Bank of America at 0.03 percent with a standard deviation at 1.06 percent and 0.08 percent respectively.

The additions to Gross NPA of select public sector and private sector banks reported high ratio in 2017-2018 as compared to 2003-2004. Most of the public sector banks ratio showed a fluctuated trend till 2012-2013 and the ratio increased at double and triple times in 2017-2018. The rate of private sector banks significantly increased during the study period. Majority of the foreign banks reported a lower level of gross NPA generation rate.

To find whether there was any significant mean difference in NPA trends of select scheduled commercial banks, t-test was applied and the results are presented in Table 40.

*H<sub>01</sub>: There is no significant mean difference in trends of non-performing assets of select scheduled commercial banks in India.*

**Table 40**

**Results of t-test of NPA trends of Select Scheduled Commercial Banks**

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>t-test value</b>	<b>P-value</b>	<b>Significance</b>
Movement of percent changes in NPA (percent)	8.08	16.70	3.212	.002	Significant
Gross NPA Generation Rate (in times)	1.35	0.58	15.398	.000	Significant

**Source: Computed data**

It is identified from the Table 38, there is a significant mean difference in the movement of percent changes in non-performing assets and gross NPA generation rate among the select banks. The p-values were found to be significant at one percent level. Hence, null hypothesis is rejected. **There is a significant mean difference in the trends of non-performing asset of select scheduled commercial banks.**

Table 41 Recovery of Non-Performing Assets of Scheduled Commercial Banks Through Different Channels

(Rs. in Crores)

Year	No Of Cases						Amount Involved						Amount Received					
	One time settlement	Lok Adalats	DRT	SARFAS I	IBC	Total	One time settlement	Lok Adalats	DRT	SARFAS I	IBC	Total	One time settlement	Lok Adalats	DRT	SARFAS I	IBC	Total
2003-2004	139562	186100	7544	2661	-	335867	1510	1063	12305	7847	-	22725	617 (40.8)	149 (14.01)	2117 (17.20)	1156 (14.73)	-	4039
2004-2005	132781	185395	4744	39288	-	362208	1332	801	14317	13224	-	29674	880 (66.06)	113 (14.1)	2688 (19)	2391 (18)	-	6072
2005-2006	10262	268090	3534	41180	-	323066	772	2144	6123	8517	-	17556	608 (78.75)	265 (12.36)	4735 (77.33)	3363 (39.48)	-	8971
2006-2007	-	160368	4028	60178	-	224574	-	758	9156	9058	-	18972	-	106 (14)	3463 (37.8)	3749 (41.4)	-	7318
2007-2008	-	186535	3728	83942	-	274205	-	2142	5619	7263	-	15024	-	176 (8.2)	3020 (51.9)	4429 (61)	-	7625
2008-2009	-	548308	2004	61760	-	612072	-	4023	4130	12067	-	20220	-	96 (2.4)	3348 (81.1)	3982 (33)	-	7426
2009-2010	-	778833	6019	78366	-	863218	-	7235	9797	14249	-	31281	-	112 (1.5)	3133 (32)	4269 (30)	-	7514
2010-2011	-	616018	12872	118642	-	747532	-	5254	14092	30604	-	49950	-	151 (2.87)	3930 (27.89)	11561 (37.78)	-	15642
2011-2012	-	476073	13365	140991	-	630429	-	1700	24100	35300	-	61100	-	200 (11.8)	4100 (17)	10100 (28.6)	-	14400
2012-2013	-	840791	13408	190537	-	1044736	-	6600	31000	68100	-	105700	-	400 (6)	4400 (14)	18500 (17)	-	23300
2013-2014	-	1636957	28258	194707	-	1859922	-	23200	55300	95300	-	173800	-	1400 (6)	5300 (10)	25300 (27)	-	32000
2014-2015	-	2958313	22004	175355	-	3155672	-	30979	60400	156778	-	248157	-	984 (3)	4200 (7)	25600 (16)	-	30784
2015-2016	-	4456634	24537	173582	-	4654753	-	72033	69341	80100	-	221474	-	3224 (4)	6365 (9)	13179 (17)	-	22768
2016-2017	-	3555678	32418	199352	37	3787485	-	36100	100800	141400	-	278300	-	2300 (6.3)	10300 (10.2)	25900 (18.3)	-	38500
2017-2018	-	3317897	29551	91330	701	3439479	-	45700	133300	106700	9900	295600	-	1800 (4)	7200 (5.4)	26500 (24.8)	4900 (49)	40400

Source: [dbie.rbi.org.in](http://dbie.rbi.org.in)

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Note: figures in Parentheses denotes the amount recovered as percent of amount involved

### **Recovery of NPA through Various Channels**

The Indian banking industry is facing a challenging times, due to the rising NPAs in the balance sheets of banks especially Public Sector Banks. At present, the banks are saddled with high volume of NPAs. Due to huge volume of NPAs, banks reported lower profitability and most of the banks disclosed net losses in 2017-2018. Therefore the recovery of NPAs is emerged as top priority for banks to ensure the growth and survival. Table 41 portrays the recovery of NPAs of select scheduled commercial banks through different channels.

The recovery of NPAs through various channels will act as a guiding tool to safeguard the banks from bankruptcy. It aims to help the banks to recover the NPA amount, to maintain a sound financial system.

Among various channels, SARFAESI Act helped in recovering the maximum amount of NPAs. The total amount of recovery declined from 51.09 percent in 2005-2006 to 10.28 percent in 2015-2016. The rate of recovery from various mechanisms like Lok adults, DRT and SARFARSI were significantly decreased over the period of time in 2017-2018 the recovery under SARFASI improved to 24.8 percent of amount involved from 18.3 percent in 2016-2017. In 2017-2018, majority of the public sector banks disclosed their NPAs as above 9 percent, While considering the size of NPAs the amount recovered from various channels were not significant. Therefore, Insolvency and Bankruptcy Code (IBC) was enacted to strengthen the NPA resolution process. Large distressed borrowers are being referred for resolution under IBC. Through initiation of IBC, National Company Law Tribunal (NCLT) admitted 37 cases in 2016-2017. During the year 2017-2018, 701 cases were admitted with an amount of Rs. 9,900 Crores, out of which an amount of Rs. 4.900 Crores were recovered. The IBC channel recovered 49 percent of the amount involved in 2017-2018. The amount recovered under IBC resolution process is indicative of strengthening credit discipline of banks. Apart from recovery through various channels, banks also have to clean up their balance sheets through sale of doubtful assets/loss assets to Asset Reconstruction Companies. It is expected that the rate of recovery under IBC may increase in the coming years.

### 4.3 RANKING OF BANKS BASED ON MULTI-CRITERION APPROACH (VIKOR)

An effective and systematic evaluation procedure is essential to judge the financial position of the scheduled commercial banks and rank them year-wise. Accordingly, Cluster Analysis, Analytical Hierarchical Process (AHP), Multi Criterion Approach (VIKOR) were applied.

#### CLUSTER ANALYSIS

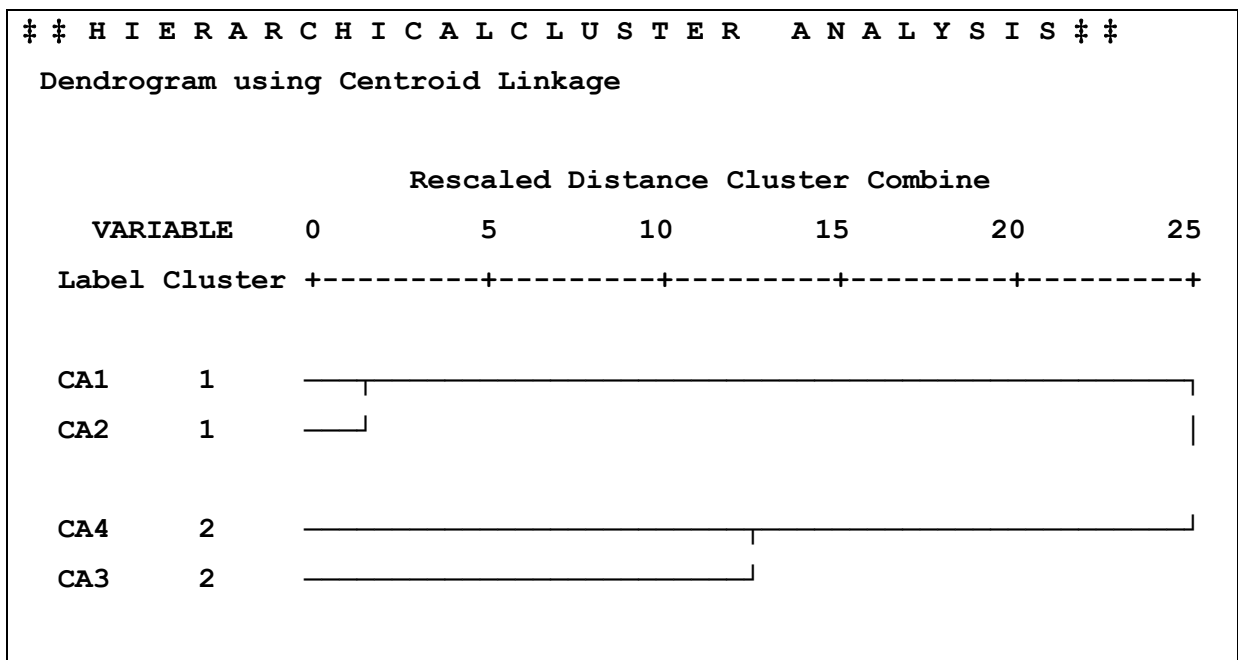
The cluster analysis technique was used to select the representative criteria (variables) under each component of CAMELS model adopted for the evaluation of financial performance.

#### CAPITAL ADEQUACY

**Table 42**  
**Cluster Membership of Capital Adequacy**

Variable	CA1	CA2	CA3	CA4
Cluster	1	1	2	2

Source: Computed data



Source: Computed data

**Figure 8**  
**Dendrogram Chart for Capital Adequacy**

Table 42 shows the members of capital adequacy component, which are classified under 2 cluster form. Capital Adequacy Ratio (CA1), Debt-Equity Ratio (CA2) grouped under cluster 1 and Advances to Total Assets (CA3), Government Securities to Total Investment (CA4) under cluster 2.

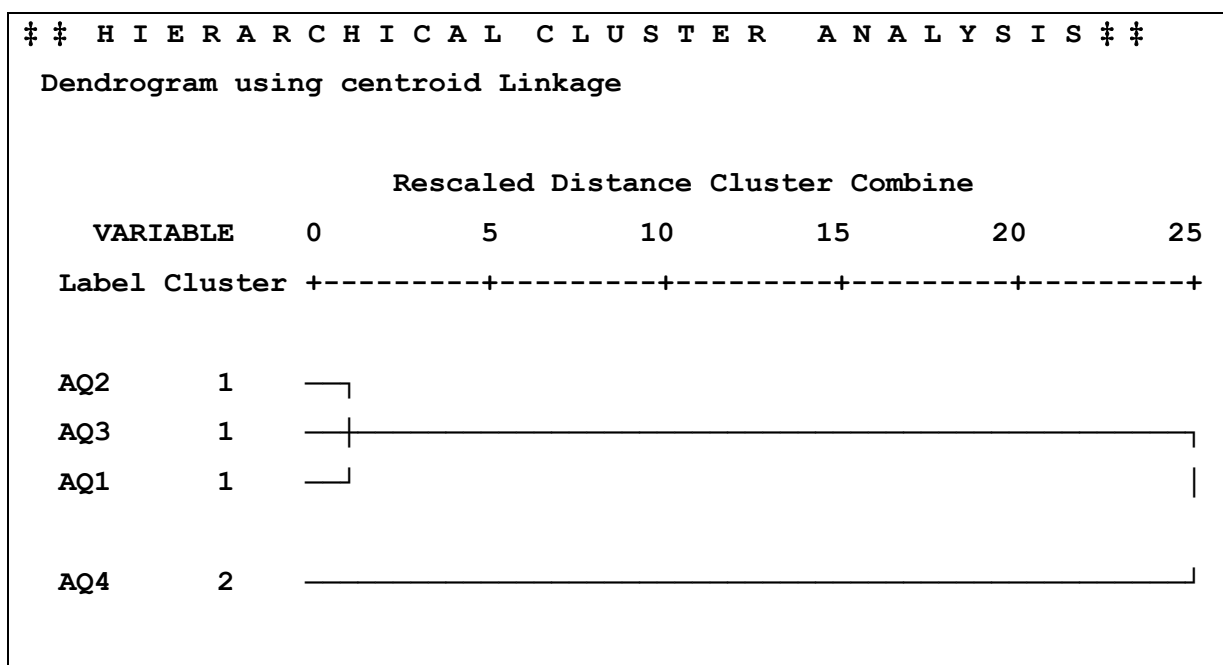
Figure 8 portrays graphical representation of the hierarchical cluster and the closeness of distance between the variables indicates greater similarity of capital adequacy component.

**ASSET QUALITY**

**Table 43**  
**Cluster Membership of Asset Quality**

Variable	AQ1	AQ2	AQ3	AQ4
Cluster	1	1	1	2

Source: Computed data



Source: Computed data

**Figure 9**  
**Dendrogram Chart for Asset Quality**

Table 43 shows the results of hierarchical cluster under asset quality component. Gross NPA to Gross Advances (AQ1), Net NPA to Net Advances (AQ2), and Net NPA to

Total Assets (AQ3) are classified under cluster 1 and Earnings Base Ratio (AQ4) alone comes under cluster 2.

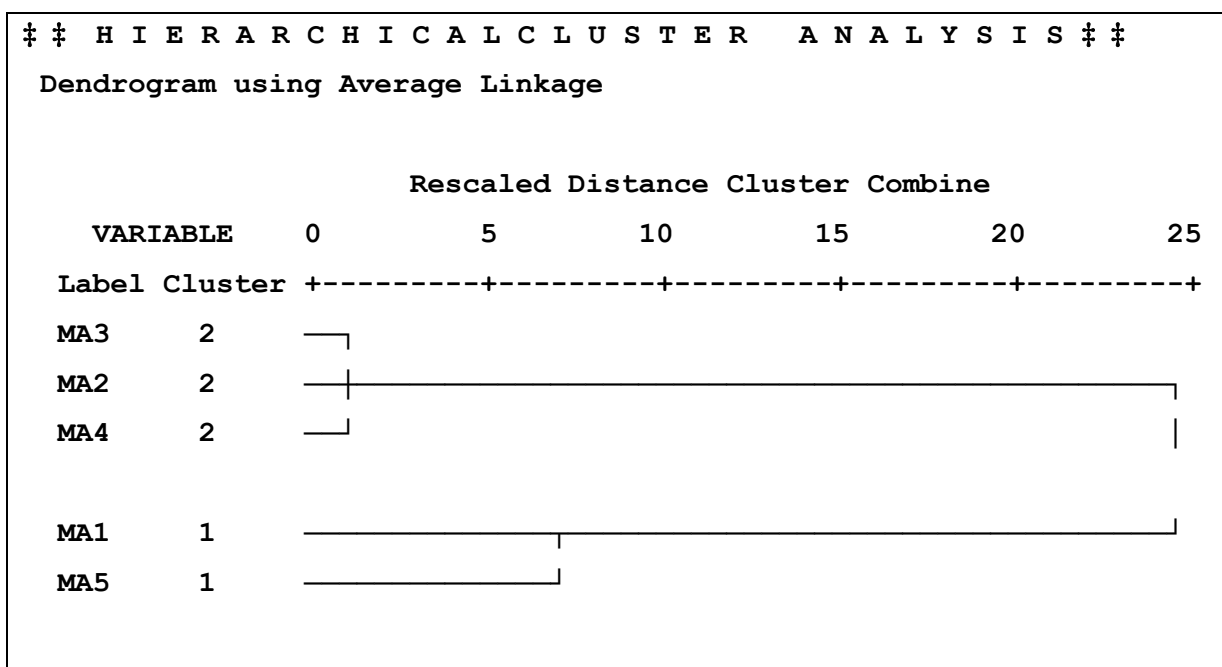
Figure 9 presents pictorial representation of clusters produced by hierarchical cluster and the closeness of distance between the variables indicates greater similarity of asset quality component.

**MANAGEMENT ABILITY**

**Table 44**  
**Cluster Membership of Management Ability**

Variable	MA1	MA2	MA3	MA4	MA5
Cluster	1	2	2	2	1

Source: Computed data



Source: Computed data

**Figure 10**  
**Dendrogram Chart for Management Ability**

Table 44 exposes the results of cluster membership under management ability component. Total Advances to Total Deposits (MA1), Current Account Savings Account Ratio (MA5) are sorted under cluster 1 and Profit per Employee (MA2), Business per Employee (MA3), and Return on Equity (MA4) under cluster 2.

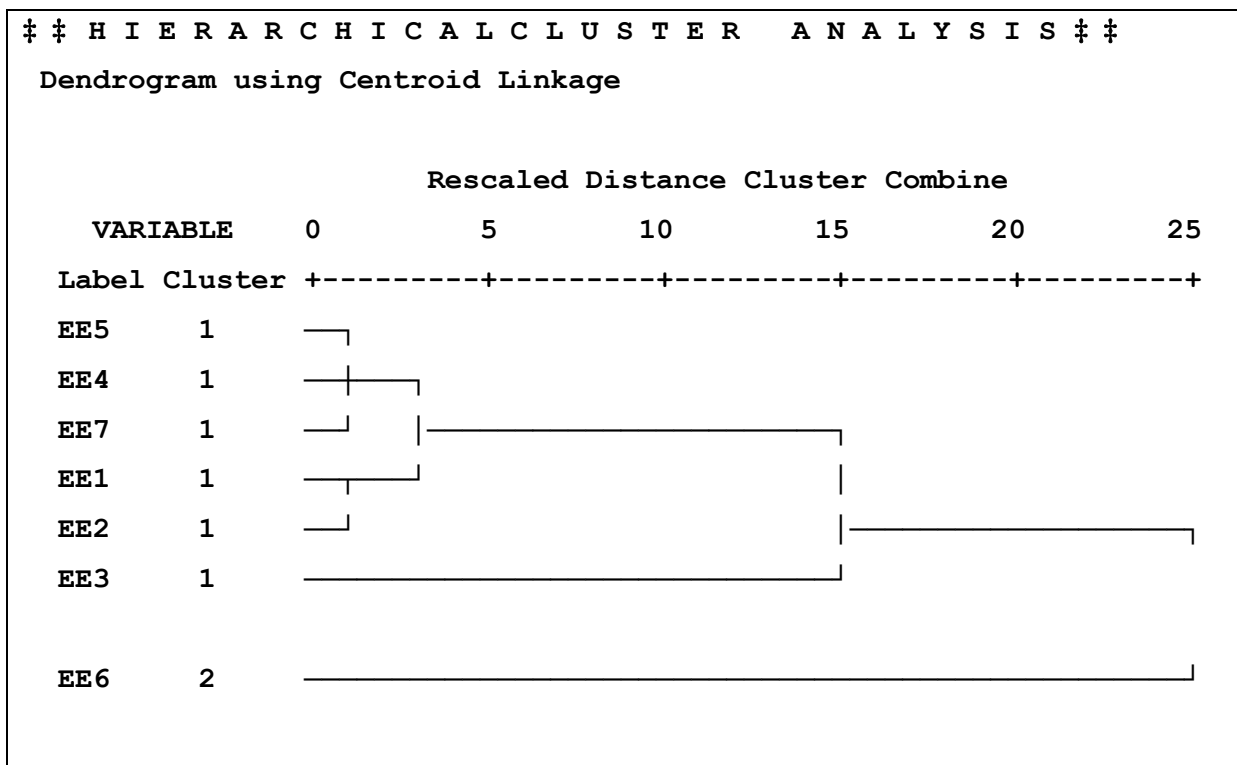
Figure 10 demonstrates the arrangement of the clusters based on hierarchical clustering and the closeness of distance between the variables indicates greater similarity of management ability component.

**EARNING EFFICIENCY**

**Table 45**  
**Cluster Membership of Earning Efficiency**

Variable	EE1	EE2	EE3	EE4	EE5	EE6	EE7
Cluster	1	1	1	1	1	2	1

Source: Computed data



Source: Computed data

**Figure 11**  
**Dendrogram Chart for Earning Efficiency**

Table 45 reveals the results of hierarchical cluster for selecting criteria under earning efficiency component. Operating Profit to Earnings Assets (EE1), Net Interest Margin (EE2), Interest Income to Total Assets (EE3), Non-Interest Income to Total Assets (EE4), Burden Ratio (EE5), Return on Assets (EE7) are identified to be the members under cluster 1 and Efficiency Ratio (EE6) alone comes under cluster 2.

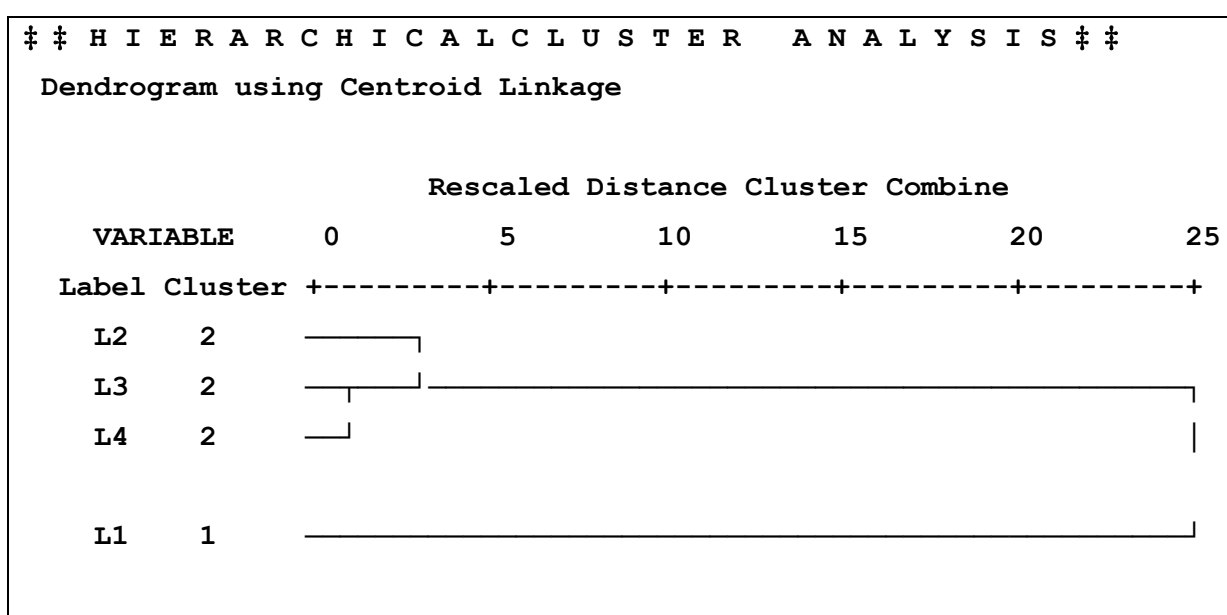
Figure 11 illustrates the graphical representation of the hierarchical cluster and the closeness of distance between the variables indicates greater similarity of earning efficiency component.

**LIQUIDITY**

**Table 46**  
**Cluster Membership of Liquidity**

Variable	L1	L2	L3	L4
Cluster	1	2	2	2

Source: Computed data



Source: Computed data

**Figure 12**  
**Dendrogram Chart for Liquidity**

Table 46 shows the members of liquidity for selecting the criteria under 2 cluster form. Liquid Assets to Demand Deposits (L1) are comes under cluster 1 and Liquid Assets to Total Deposits (L2), Liquid Assets to Total Assets (L3), Government Securities to Total Assets (L4) are found to be members under cluster 2.

Figure 12 exhibits the graphical picture of the clustering under 2 cluster form and the closeness of distance between the variables indicates greater similarity of liquidity component.

**SENSITIVITY TO RISK**

Since the component Sensitivity to risk has only two variables, both the variables Total Securities to Total Assets (S1) and Risk Sensitive Assets to Risk Sensitive Liabilities (S2) were selected as criteria under cluster analysis.

Table 47 discloses the summary of cluster analysis and the representative criteria under each component. The criteria (variables) are selected based on the level of distance.

**Table 47**  
**Summary of Cluster Analysis**

Component	No of Cluster	Ratios	Selected Ratios	
Capital Adequacy	Cluster 1	CA1	CA2	Debt Equity Ratio
		CA2		
	Cluster 2	CA3	CA3	Advances to Total Assets
		CA4		
Asset Quality	Cluster 1	AQ1	AQ1 AQ2	Gross NPA to Gross Advances Net NPA to Net Advances
		AQ2		
		AQ3		
	Cluster 2	AQ4	AQ4	Earnings Base Ratio
Management Ability	Cluster 1	MA1	MA5	CASA Ratio
		MA5		
	Cluster 2	MA2	MA3 MA4	Business per Employee Return on Equity
		MA3		
MA4				
Earning Efficiency	Cluster 1	EE1	EE2 EE5 EE7	Net Interest Margin Burden Ratio Return on Assets
		EE2		
		EE3		
		EE4		
		EE5		
	EE7			
Cluster 2	EE6	EE6	Efficiency Ratio	
Liquidity	Cluster 1	L1	L1	Liquid Assets to Demand Deposits
	Cluster 2	L2	L4	Government Securities to Total Assets
		L3		
		L4		
Sensitivity to risk		S1	S1	Total Securities to Total Assets
		S2	S2	Risk Assets to Risk Liabilities

Source: Compiled from secondary source

Table 47 shows the exhaustive and selected criteria under each component based on the level of distance by applying hierarchical cluster analysis. Distance is a measure of dissimilarity between the clusters. The closeness between the variables under each component indicates that the variable has minimum dissimilarity, i.e., maximum similarity. In capital adequacy, Debt Equity Ratio (CA2) was selected as representative criteria under cluster 1 with a minimum level of distance, i.e., dissimilarity of 0.031 and Advances to Total Assets (CA3) was chosen from cluster 2 with a distance of 0.194. In asset quality, both the variable Gross NPA to Gross Advances (AQ1) and Net NPA to Net Advances (AQ2) were selected as criteria with an equal minimum distance of 0.019. Earnings Base Ratio (AQ4) was selected as representative criteria under cluster 2. In management ability, CASA Ratio (MA5) was chosen as criteria with a distance of 0.118 from cluster 1. Business per Employee (MA3) and Return on Equity (MA4) were selected as criteria with a closer distance of 0.017. In earning efficiency, Net Interest Margin (EE2), Burden Ratio (EE5), Return on Assets (EE7) was sorted from cluster 1 with shortest distance of 0.019. Efficiency Ratio (EE6) was selected from cluster 2 with a distance of 0.490. In liquidity, Liquid Assets to Demand Deposits (L1) was selected from cluster 1 with a distance of 0.781 and Government Securities to Total Assets (L4) was chosen from cluster 2 with a distance of 0.031. In sensitivity to risk, both the variables Total Securities to Total Assets (S1) and Risk Sensitive Assets to Risk Sensitive Liabilities (S2) were selected as criteria under cluster analysis.

### **ANALYTICAL HIERARCHICAL PROCESS (AHP)**

Analytical Hierarchical Process (AHP) method is used to determine the relative weights of the selected criteria under cluster analysis to rank the banks. With a view to calculate the weights of the criteria the pairwise comparison matrix between criteria has been developed. The results of pairwise comparison was presented in Table 48.

Table 48

## Pair wise Comparison matrix of select criteria

	D/E	TA_TA	Gross NPA	Net NPA	EB	CA SA	BPE	ROE	NIM	Bur den	Effici ency	ROA	LA_DD	GS_TA	TS_TA	GAP
D/E	1	8.12	8.09	7.65	8.00	7.57	7.54	7.50	8.17	8.09	7.87	7.24	7.49	7.39	7.64	7.84
TA/TA	0.12	1	7.83	7.40	7.75	7.32	7.28	7.25	7.92	7.83	7.62	6.98	7.23	7.13	7.38	7.58
GNPA	0.12	0.13	1	7.37	6.93	7.28	6.85	6.82	6.78	7.45	7.37	7.15	6.52	6.77	6.67	6.92
NNPA	0.13	0.14	0.14	1	7.28	7.63	7.20	7.17	7.13	7.80	7.72	7.50	6.87	7.12	7.02	7.27
EB	0.13	0.13	0.14	0.14	1	6.74	6.70	6.67	7.33	7.25	7.03	6.40	6.65	6.55	6.80	7.00
CASA	0.13	0.14	0.14	0.13	0.15	1	6.74	6.70	6.67	7.33	7.25	7.03	6.40	6.65	6.55	6.80
BPE	0.13	0.14	0.15	0.14	0.15	0.15	1	6.67	6.63	7.30	7.22	7.00	6.37	6.62	6.52	6.77
ROE	0.13	0.14	0.15	0.14	0.15	0.15	0.15	1	7.30	7.97	7.88	7.67	7.03	7.28	7.18	7.43
NIM	0.12	0.13	0.15	0.14	0.14	0.15	0.15	0.14	1	7.88	7.80	7.58	6.95	7.20	7.10	7.35
Burden	0.12	0.13	0.13	0.13	0.14	0.14	0.14	0.13	0.13	1	7.58	7.37	6.73	6.98	6.88	7.13
Efficiency	0.13	0.13	0.14	0.13	0.14	0.14	0.14	0.13	0.13	0.13	1	6.73	6.10	6.35	6.25	6.50
ROA	0.14	0.14	0.14	0.13	0.16	0.14	0.14	0.13	0.13	0.14	0.15	1	6.35	6.60	6.50	6.75
LA_DD	0.13	0.14	0.15	0.15	0.15	0.16	0.16	0.14	0.14	0.15	0.16	0.16	1	6.50	6.40	6.65
GS_TA	0.14	0.14	0.15	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.16	0.15	0.15	1	6.65	6.9
TS_TA	0.13	0.14	0.15	0.14	0.15	0.15	0.15	0.14	0.14	0.15	0.16	0.15	0.16	0.00	1	7.1
GAP	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.13	0.14	0.14	0.15	0.15	0.15	0.00	0.14	1

Source: Computed data

The above Table 48 illustrates the pairwise comparison matrix of alternative criteria with a scale of 1 to 9. The matrix was constructed by comparing the importance of two alternatives, based on the expert's opinion. It required normalizing the comparison matrix and then dividing the value by the sum of column. The Priority Vector (Weight) derived by averaging the normalized row matrix.

Table 49 brings out the Priority Vector (Weights) of individual representative criteria under each component.

**Table 49**  
**Weights of select Ratios**

<b>Components</b>	<b>Criteria</b>	<b>Weights</b>
Capital Adequacy	Debt Equity Ratio	0.0787
	Total Advances to Total Assets	0.0665
Asset Quality	Gross NPA to Gross Advances	0.2276
	Net NPA to Net Advances	0.1551
	Earnings Base Ratio	0.1175
Management Ability	CASA Ratio	0.0556
	Business per Employee	0.0501
	Return on Equity	0.0406
Earning Efficiency	Net Interest Margin	0.0318
	Burden Ratio	0.0233
	Efficiency Ratio	0.1008
	Return on Assets	0.0183
Liquidity	Liquid Assets to Demand Deposits	0.0128
	Government Securities to Total Assets	0.0077
Sensitivity to Risk	Total Securities to Total Assets	0.0068
	Risk Sensitive Assets to Risk Sensitive Liabilities	0.0066

**Source: Computed data**

Table 49 portrays the weights of each representative criterion. In Capital adequacy, Debt equity ratio (CA2) was assigned a weight at 0.0787 and Total Advances to total assets at 0.0665. In Asset quality, Gross NPA to Gross advances (AQ1) was given a weight at 0.2276, Net NPA to Net advances (AQ2) at 0.1551 and Earnings Base ratio (AQ4) at 0.1175. In Management ability, Business per employee (MA3) had a weight at 0.0501, Return on equity (MA4) at 0.0406 and CASA ratio (MA5) at 0.0556. In earning efficiency, Net Interest Margin (EE2) was assigned a weight at 0.0318. Burden ratio (EE5) was identified a weight at 0.0233, Efficiency ratio (EE6) at 0.1008 and Return on Assets (EE7) at 0.0183. In Liquidity, Liquid asset to demand deposits (L1) were given a weight at 0.0128 and Government security to Total assets (L4) at 0.007. In sensitivity to risk, Total securities to total assets (S1) was given a weight at 0.0068 and Risk sensitive assets to risk sensitive liabilities at 0.0066.

### **Multi Criterion Approach (VIKOR)**

The select Scheduled Commercial Banks were rank using multi criterion approach (VIKOR) method. The rank was assigned for each of the 15 years along with mean rank.

Table 50 RANKING OF SELECT SCHEDULED COMMERCIAL BANKS USING VIKOR METHOD

Banks	2017-2018		2016-2017		2015-2016		2014-2015		2013-2014		2012-2013		2011-2012		2010-2011	
	Qij	CS	Qij	CS	Qij	CS	Qij	CS	Qij	CS	Qij	CS	Qij	CS	Qij	CS
<b>Public Sector Banks</b>																
Allahabad Bank	0.8935	19	0.5387	9	0.5281	9	0.7547	16	0.7710	17	0.9697	19	0.4878	8	0.5637	11
Andhra Bank	0.4725	11	0.3204	5	0.1767	4	0.6031	11	0.4927	12	0.5424	11	0.2702	4	0.0000	2
Bank of Baroda	0.1844	5	0.2893	4	0.0000	1	0.1717	2	0.1589	2	0.0000	1	0.0000	2	0.0608	4
Bank of India	0.1322	3	0.3874	6	0.2259	3	0.6201	12	0.6413	15	0.7670	14	0.7604	15	0.8453	18
Bank of Maharashtra	0.4257	8	0.7333	15	0.3394	7	0.2837	4	0.4918	9	0.2481	5	0.7428	14	0.6442	13
Canara Bank	0.1294	4	0.1505	2	0.4060	8	0.6403	13	0.4918	9	0.3455	7	0.2033	1	0.0536	1
Central Bank of India	0.8945	18	0.8406	16	0.8383	16	0.6544	14	0.8238	18	0.7848	16	0.8051	17	1.0000	19
Corporation Bank	0.8027	16	0.5803	12	0.5484	12	0.5017	8	0.4400	8	0.4318	8	0.4554	7	0.4085	5
Dena Bank	0.4647	9	0.6210	13	0.5378	11	0.5922	10	0.4184	5	0.9054	18	0.9127	19	0.5149	9
Indian Bank	0.0651	2	0.0527	1	0.1239	2	0.0000	1	0.0000	1	0.1494	2	0.2156	3	0.2681	6
Indian Overseas Bank	0.8387	15	0.9647	19	0.9541	18	0.9415	19	0.4709	11	0.5589	12	0.3688	5	0.4471	7
Oriental Bank of Commerce	0.6289	13	0.5233	8	0.3332	5	0.4425	6	0.4452	7	0.5238	10	0.6358	11	0.2616	3
Punjab and Sind Bank	0.4675	10	0.7289	14	0.5933	14	0.4899	7	0.5043	13	0.2285	6	0.3552	6	0.5053	8
Punjab National Bank	0.8462	17	0.5643	11	0.5371	10	0.3507	3	0.3201	4	0.2274	3	0.5831	10	0.6540	15
Syndicate Bank	0.3844	7	0.5145	7	0.5664	13	0.6698	15	0.3518	3	0.2064	4	0.6889	12	0.6523	14
UCO Bank	0.7245	14	0.9207	18	0.9992	19	0.3573	5	0.3561	6	0.5188	9	0.7682	16	0.7029	16
Union Bank of India	0.4114	6	0.5493	10	0.6061	15	0.7673	17	0.5532	14	0.7529	13	0.8687	18	0.6356	12
United Bank of India	0.5333	12	0.8537	17	0.9257	17	0.9021	18	1.0000	19	0.8434	17	0.7170	13	0.7416	17
Vijaya Bank	0.0000	1	0.3077	3	0.2549	6	0.5455	9	0.6450	16	0.7807	15	0.5534	9	0.5329	10
<b>Private Sector Banks</b>																
Axis Bank	0.2304	5	0.2400	5	0.0996	3	0.2378	5	0.0710	4	0.0729	1	0.4511	10	0.6729	9
Catholic Syrian Bank	0.9610	16	0.8548	14	0.7549	16	0.8796	16	0.7985	16	0.7863	16	0.8376	16	0.9831	17
City Union Bank	0.0184	2	0.1699	4	0.0000	2	0.0000	2	0.1005	6	0.3603	10	0.4818	12	0.6351	7
Dhanalaxmi Bank	0.5589	13	0.9333	16	1.0000	17	1.0000	17	1.0000	17	1.0000	17	0.8450	17	0.7695	13
DCB Bank	0.3465	9	0.4416	9	0.2011	5	0.3252	9	0.3690	12	0.6775	13	0.4568	11	0.8872	15
Federal Bank	0.2796	7	0.5493	11	0.2714	8	0.1602	3	0.2288	8	0.4394	9	0.3122	5	0.6674	8
HDFC Bank	0.1898	6	0.2252	6	0.0554	1	0.0972	1	0.0000	2	0.0467	2	0.1677	4	0.5205	4
ICICI Bank	0.3497	11	0.2207	3	0.3696	9	0.2391	8	0.3224	9	0.2559	5	0.2788	6	0.7603	12
IndusInd Bank	0.1676	4	0.1442	1	0.0916	4	0.4861	10	0.2095	5	0.2055	3	0.3309	8	0.5462	5
Jammu & Kashmir Bank	0.7369	15	0.9572	17	0.6365	15	0.6432	14	0.4532	14	0.7112	15	0.6500	13	0.8098	14
Karnataka Bank	0.5838	14	0.4924	10	0.5253	14	0.6028	13	0.4835	13	0.6920	14	0.8145	15	0.9616	16
Karur Vysya Bank	0.3267	10	0.5689	12	0.3005	10	0.2074	6	0.2892	10	0.3514	7	0.3371	7	0.5558	6
Kotak Mahindra Bank	0.0491	1	0.0000	2	0.1854	6	0.1259	4	0.0614	1	0.2205	6	0.1261	1	0.5121	3
Lakshmi Vilas Bank	1.0000	17	0.9055	15	0.5069	13	0.6814	15	0.7205	15	0.4578	11	0.6663	14	0.7125	11
RBL Bank	0.1839	3	0.3490	8	0.4098	12	0.5613	11	0.2756	7	0.2983	8	0.0243	2	0.0000	1
South Indian Bank	0.5176	12	0.6405	13	0.4378	11	0.5684	12	0.3716	11	0.4400	12	0.3875	9	0.6849	10
Tamilnad Mercantile Bank	0.2611	8	0.3932	7	0.2858	7	0.3176	7	0.0896	3	0.1675	4	0.2486	3	0.5022	2
<b>Foreign Banks</b>																
Bank of America	0.0000	1	0.0837	1	0.1541	3	0.1906	3	0.1327	1	0.0000	2	0.0000	1	0.0354	1
Barclays Bank	0.3415	3	0.1970	2	0.0143	2	0.1154	2	0.3023	5	0.3978	4	0.7501	6	0.5746	7
BNP Paribas	0.7615	5	0.9031	8	0.8783	8	0.8071	8	0.5859	7	0.5555	6	0.3031	4	0.3004	6
Citi Bank	0.4442	4	0.5166	3	0.1186	1	0.1683	4	0.2234	4	0.2708	3	0.1958	2	0.0000	2
DBS Bank	0.8554	8	0.6625	6	0.6836	6	0.6541	5	1.0000	8	1.0000	8	0.9047	8	1.0000	8
Duetsche Bank	0.8001	7	0.5918	5	0.3669	5	0.0000	1	0.5042	6	0.5000	5	0.3916	5	0.2468	3
HSBC	0.2653	2	0.4834	4	0.2511	4	0.4039	6	0.2952	3	0.2596	1	0.3873	3	0.1713	4
Standard Chartered Bank	0.6745	6	0.7786	7	0.7538	7	0.7023	7	0.1306	2	0.7390	7	0.7689	7	0.2487	5
Source: Calculated data																
Note: Qij – Criterion Value																
CS – Compromise Solution																
■ : Top performer banks																
■ : Low performer banks																

(continued)

Table 50 RANKING OF SELECT SCHEDULED COMMERCIAL BANKS USING VIKOR METHOD

Banks	2009-2010		2008-2009		2007-2008		2006-2007		2005-2006		2004-2005		2003-2004		Mean	CS
	Qij	CS	Qij	CS	Qij	CS	Qij	CS	Qij	CS	Qij	CS	Qij	CS		
<b>Public Sector Banks</b>																
Allahabad Bank	0.3693	5	0.5342	13	0.1877	7	0.3083	7	0.2527	4	0.4268	9	0.5933	13	0.5453	13
Andhra Bank	0.1009	1	0.2696	8	0.2583	9	0.5027	13	0.0004	2	0.3779	7	0.3558	3	0.3162	3
Bank of Baroda	0.0649	2	0.1724	6	0.0184	2	0.4777	9	0.3490	5	0.4218	10	0.4910	6	0.1735	1
Bank of India	0.6020	11	0.3798	10	0.1698	5	0.5677	15	0.9328	18	0.5440	14	0.5753	11	0.5434	12
Bank of Maharashtra	0.8021	17	0.9070	18	0.6401	17	0.4844	12	0.7495	15	0.4304	12	0.5904	12	0.5675	15
Canara Bank	0.3558	6	0.1670	3	0.1344	3	0.0309	2	0.6627	13	0.3764	8	0.5182	7	0.3110	4
Central Bank of India	0.8641	18	0.6027	15	1.0000	19	1.0000	19	0.9284	17	0.5103	13	0.6579	16	0.8137	19
Corporation Bank	0.1652	3	0.2578	5	0.1136	4	0.1734	6	0.0075	1	0.0000	2	0.0000	1	0.3258	5
Dena Bank	0.6736	12	0.8659	17	0.4972	16	0.6354	17	0.9546	19	0.5465	15	0.8884	18	0.6686	17
Indian Bank	0.4910	8	0.0000	1	0.0580	1	0.0434	1	0.3162	6	0.2809	6	0.5378	9	0.1907	2
Indian Overseas Bank	0.4125	7	0.4133	12	0.3423	11	0.0774	4	0.2806	3	0.2395	3	0.5491	10	0.5240	10
Oriental Bank of Commerce	0.5833	10	0.3736	7	0.2512	10	0.2315	5	0.6605	12	0.6861	18	0.3437	4	0.4616	7
Punjab and Sind Bank	0.5119	9	0.1547	4	0.2708	12	0.1385	3	0.4981	9	0.9822	19	0.9076	19	0.4891	9
Punjab National Bank	0.1155	4	0.0759	2	0.1778	8	0.3719	10	0.4793	8	0.1965	4	0.5211	8	0.4014	6
Syndicate Bank	0.7359	14	0.6086	16	0.4509	14	0.4975	11	0.5611	11	0.6026	17	0.6254	15	0.5411	11
UCO Bank	0.6983	13	1.0000	19	0.7575	18	0.6548	18	0.8175	16	0.5776	16	0.6617	17	0.7010	18
Union Bank of India	0.7513	15	0.3855	9	0.1370	6	0.2595	8	0.7215	14	0.4648	11	0.6177	14	0.5655	14
United Bank of India	0.8662	19	0.5977	14	0.5183	15	0.5413	14	0.3566	7	0.1194	1	0.2441	2	0.6507	16
Vijaya Bank	0.7868	16	0.4508	11	0.4540	13	0.6320	16	0.5251	10	0.3551	5	0.3637	5	0.4792	8
<b>Private Sector Banks</b>																
Axis Bank	0.6260	10	0.7628	10	0.6722	10	0.7982	14	0.6772	14	0.5480	10	0.7555	12	0.4610	10
Catholic Syrian Bank	1.0000	17	0.9603	17	0.9556	17	1.0000	17	0.6703	13	0.6654	12	0.8621	16	0.8646	17
City Union Bank	0.6362	11	0.7451	9	0.5642	6	0.4971	5	0.3779	8	0.4921	5	0.5646	7	0.3762	5
Dhanalaxmi Bank	0.8341	15	0.7340	8	0.8555	16	0.9121	16	0.8736	16	0.8785	16	0.6500	10	0.8563	16
DCB Bank	0.7911	14	0.7987	12	0.6450	8	0.9071	15	1.0000	17	1.0000	17	0.5660	8	0.6275	13
Federal Bank	0.4878	3	0.5499	3	0.3263	2	0.4723	3	0.1954	4	0.7137	14	0.8523	15	0.4337	7
HDFC Bank	0.4144	1	0.6195	4	0.7155	12	0.4958	6	0.5036	9	0.4944	7	0.7287	11	0.3516	6
ICICI Bank	0.5971	8	0.6830	7	0.6574	9	0.5571	7	0.1955	3	0.4931	8	0.7563	13	0.4491	8
IndusInd Bank	0.5638	6	0.7923	11	0.8203	15	0.6887	11	0.6559	12	0.5115	9	0.5447	6	0.4506	9
Jammu & Kashmir Bank	0.6990	12	0.8241	14	0.6996	11	0.5955	10	0.2979	6	0.2617	4	0.1733	1	0.6099	12
Karnataka Bank	0.9112	16	0.8846	16	0.7916	14	0.7099	13	0.5094	10	0.3371	6	0.8022	14	0.6735	14
Karur Vysya Bank	0.5739	7	0.6533	6	0.5328	4	0.3235	2	0.0000	2	0.0027	1	0.0000	2	0.3349	3
Kotak Mahindra Bank	0.5121	5	0.5117	2	0.4769	3	0.5827	8	0.4135	7	0.3100	3	0.2161	4	0.2869	1
Lakshmi Vilas Bank	0.7400	13	0.8558	15	0.7466	13	0.5898	9	0.5920	11	0.6618	11	0.5710	9	0.6939	15
RBL Bank	0.0000	2	0.0000	1	0.0000	1	0.0730	1	0.7184	15	0.6991	13	0.2699	3	0.2575	2
South Indian Bank	0.6187	9	0.8226	13	0.6215	7	0.7041	12	0.3125	5	0.8364	15	0.8694	17	0.5889	11
Tamilnad Mercantile Bank	0.4750	4	0.6378	5	0.5333	5	0.4512	4	0.0476	1	0.1072	2	0.3150	5	0.3222	4
<b>Foreign Banks</b>																
Bank of America	0.2153	2	0.2058	1	0.5223	4	0.5325	2	0.1062	2	0.2252	2	0.4910	3	0.1930	1
Barclays Bank	0.5958	7	0.4076	4	0.0000	2	0.7779	3	0.2192	4	0.4226	3	0.2389	2	0.3570	2
BNP Paribas	0.3464	3	0.8555	8	0.5932	6	0.7492	4	0.7684	6	1.0000	8	0.8304	5	0.6825	8
Citi Bank	0.0000	1	0.2106	3	0.7368	5	0.9553	7	0.7929	5	0.8039	7	0.8432	7	0.4187	4
DBS Bank	1.0000	8	0.6186	6	0.4314	3	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.5874	6
Duetsche Bank	0.3752	5	0.1734	2	0.4192	1	0.9438	6	0.7662	3	0.5799	4	0.7084	4	0.4912	3
HSBC	0.3066	4	0.5139	5	1.0000	8	0.9751	8	0.9781	8	0.7311	6	0.8983	8	0.5280	5
Standard Chartered Bank	0.5160	6	0.6814	7	0.7732	7	0.8574	5	0.8446	7	0.7414	5	0.7983	6	0.6673	7

Source: Calculated data  
Note: Qij – Criterion Value  
CS – Compromise Solution  
: Top performer banks  
: Low performer banks

Table 50 demonstrates the criteria value and rank based on a combination of AHP and VIKOR method for a period of 15 years from 2003-2004 to 2017-2018 with mean rank. The compromise solution rank under VIKOR was proposed based on the minimum Qij (Criterion value) by considering the acceptable advantage rate and acceptable stability in decision making conditions. The top performance banks and low performance banks were sorted out under each sector based on the mean rank of the select banks.

Table 51 shows the top performed banks and low performed banks based on the mean rank of the select public sector, private sector and foreign banks.

**Table 51**  
**List of Top Performing Banks and Low Performing Banks**

<b>Public Sector</b>	<b>Private Sector</b>	<b>Foreign Banks</b>
<b>Top Performing Banks</b>		
Bank of Baroda	Kotak Mahindra Bank	Bank of America
Indian Bank	RBL Bank	Barclays Bank
Andhra Bank	Karur Vysya Bank	Duetsche Bank
<b>Low Performing Banks</b>		
Central Bank of India	Catholic Syrian Bank	BNP Paribus
UCO Bank	Dhanalaxmi Bank	Standard Chartered Bank
Dena Bank	Lakshmi Vilas Bank	DBS Bank

**Source: Based on Computed data**

The Scheduled Commercial Banks were classified as top performing banks and lower performing banks based on the ranks assigned to the banks using VIKOR model. The listed banks under top performing banks are considered as the best banks during the study period. While considering Public sector banks, Bank of Baroda reported first rank by recording minimum Qij value at 0.1735, followed by Indian Bank at 0.1907 and Andhra Bank at 0.3162. In private sector banks, Kotak Mahindra Bank occupied first rank by registering the criterion value at 0.2869, followed by RBL Bank at 0.2575 and Karur Vysya Bank at 0.3349. Among foreign banks, Bank of America occupied first rank by reporting minimum criterion value at 0.1930, followed by Barclays Bank at 0.3570. The top performed banks showed a better control over non-performing assets and have adequate capital to absorb the losses and have improved their operating profit.

Among public sector banks, Central Bank of India reported the lowest performance by registering maximum criterion value at 0.8137, followed by UCO Bank at 0.7010 and Dena Bank at 0.6686. While considering private sector banks, Catholic Syrian Bank recorded the lowest rank with a criterion value at 0.8646, followed by Dhanalaxmi Bank at 0.8563 and Lakshmi Vilas Bank at 0.6939. In foreign banks, BNP Paribas Bank reported the lower performance by recording the lowest criterion value at 0.6825 followed by Standard Chartered Bank at 0.6673 and DBS Bank at 0.5874. The banks that are categorized under low performed banks reported a downward trend in return due to net loss in operations of business. Dena bank, Central Bank of India, Lakshmi Vilas Bank, Dhanalaxmi Bank and Indian Overseas Bank reported increased operating expenses and very high non-performing assets, which affects their earning capacity. The quality of assets marginally declined over the period of study. The higher provisioning on NPA due to its poor recovery, highly affected the performance of banks. Hence, the Reserve Bank of India and Central Government have initiated various reform measures to strengthen the banks such as recapitalization of public sector banks, resolution to NPA under Insolvency and Bankruptcy Code to strengthen the banking sector. These measures are expected to improve the financial position of the banks. Apart from that, all the scheduled commercial banks have to take proactive measures by monitoring credit discipline of borrowers, reducing operating cost and increasing the recovery of non-performing assets to improve their financial health.

### **LINKAGE BETWEEN THE VARIOUS CRITERION VARIABLES**

Path analysis has been applied to know the linkage between the various criterion variables. The study considers only select public and private sector banks. Path analysis is a statistical technique for examining and testing relationships among a set of observed variables (Sebastian Valenzuela and Ingrid Bachmann, 2017). It is an extension of multiple regression method. It analyzes the model which is more complex (and realistic) than multiple regression. It compares different variables to determine the path which one best fits the data. The aim of path analysis is to provide estimates of the magnitude and significance of hypothesized casual connections among sets of variables through the use of path diagram (Frances, Hasani K Cater, 2004). According to Kumar and Sujit (2018), variance which predicts construct relationship is explained effectively by PLS-SEM and this method emphasizes on maximizing the explained variance of the endogenous latent

variables instead of replicating the theoretical covariance matrix. Therefore, the study selected 36 Scheduled Commercial Banks (both public and private sector) in India. Path analysis considers 16 representative variables under Credit risk, Operational risk, Profitability and Other specific variables, which are identified based on cluster analysis. Credit risk variables include Gross NPA to Gross Advances, Net NPA to Net Advances, Advances to Total Assets and Debt Equity Ratio. Burden Ratio, Efficiency Ratio Total Securities to Total Assets and Risk Sensitive Assets to Risk Sensitive Liabilities are grouped under Operational risk. Profitability variables include Net Interest Margin, Return on Assets, Earnings Base and Return on Equity. Business Per Employee, Liquid Assets to Total Deposits, Government Securities to Total Assets, Total Investments to Total Assets are comes under Other specific variables. Path analysis has been applied to determine the linkage between credit risk, operational risk, profitability and other specific variables. Figure 13 shows the results of the model.

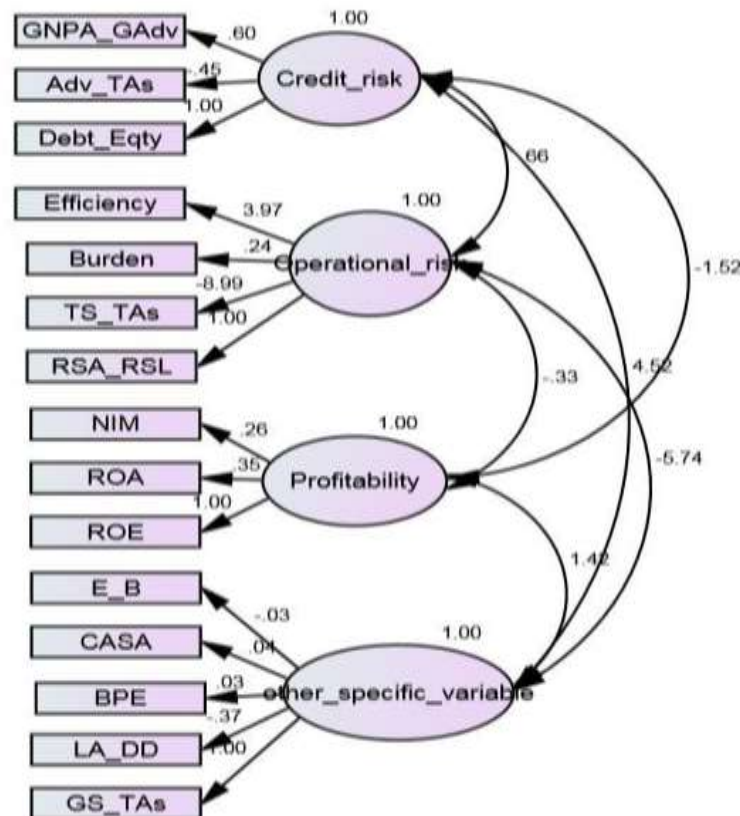


Figure 13 Linkage between Credit Risk, Operational Risk, Profitability and Other Specific Variables

**Table 52**  
**Coefficient of Structural Path**

Variables	Estimate	S.E	C.R	P-Value
Credit risk <--> Operational risk	0.663	0.349	1.899	<b>0.048</b>
Credit risk <--> Profitability	-1.516	0.348	-4.360	<b>0.000</b>
Credit risk <--> Other specific variables	4.521	2.070	2.189	0.110
Operational risk <--> Profitability	-0.326	0.150	-2.179	<b>0.030</b>
Operational risk <--> Other specific variables	-5.742	0.320	-19.009	<b>0.000</b>
Profitability <--> Other specific variables	1.420	0.889	1.597	<b>0.029</b>

**Source: Computed data**

Table 52 shows the results of the coefficient of structural path. On credit risk, a positive linkage was found between credit risk variables and operational risk variables. An inverse linkage was found between credit risk variables and profitability variables. These indicate an increase in the credit risk variables of bank lead to an increase in operational risk variables and decrease in profitability variables. Credit risk and other specific variables are not significant at 5 percent level. Except other specific variables, the operational risk and profitability variables have a positive and negative relationship with credit risk with a coefficient of 1.889 and -4.360 at 1 percent and 5 percent level of significance. Hence, null hypothesis was rejected. **There is a significant positive linkage between credit risk with operational risk variables and inverse linkage between credit risk with profitability variables of Scheduled Commercial Banks in India.**

On operational risk, an inverse linkage was found between operational risk with profitability and other specific variables. It implies that an increase in operational risk variables, tends to decrease in profitability and other specific variables of bank. This finding is consistent with the studies by Chen et al. (2009), Nair and Fissaha (2010) and Gameli Gadzo, Kwabla Kportorgbi et al. (2019) whose studies indicated a negative relationship between operational risk and financial performance of profitability and other specific variables. The operational risk variables with profitability and other specific variables reported a negative coefficient at -2.179 and -19.009 with a significant level of 5 percent and 1 percent. Hence, null hypothesis was rejected. **There is a significant inverse**

**linkage between operational risk variables with profitability and other specific variables of Scheduled Commercial Banks in India.**

On profitability, a positive linkage was found between profitability and other specific variables. This indicates an increase in profitability variables lead to an increase in other specific variables. The coefficient of profitability and other specific variables was found to be positive at 1.597 with 5 percent level of significance. Hence, null hypothesis was rejected. **There is a significant positive linkage between profitability and other specific variables of Scheduled Commercial Banks in India.**

**Table 53**  
**Goodness of Fit – Indices from Model**

Parameters	Model values	Suggested values
CMIN/DF	2.720	$\leq 3.000$ (Bentler and Bonett, 1980)
Goodness of Fit Index (GIF)	0.937	$\geq 0.900$ (Hair et al. 2010)
Comparative Fit Index (CFI)	0.908	$\geq 0.900$ (Hu & Bentler, 1999 & Byrne, 2001)
Tucker-Lewis Index (TLI)	0.953	$\geq 0.900$ (Hu & Bentler, 1999)
Root Mean Square Error of Approximation (RMSEA)	0.040	$< 0.060$ (Hu & Bentler, 1999)

**Source: Computed data**

Table 53 shows the results of Goodness of Fit. The ratio of minimum CMIN to degree of freedom (CMIN/DF) has been suggested as a good measure of fit (Rawani & Gupta, 2002). Bentler and Bonett (1980) and Hung Duc Pham (2020), the accepted CMIN/DF value should be less than or equal to 3, while according to Tho and Trang (2008) based on the experience of many researchers, CMIN/DF is less than 5. The reported CMIN/DF value was 2.720, which is less than the suggested value 3. The Goodness of Fit Index (GFI) was found to be 0.937, which is greater than the suggested value 0.900 (Hair et al. 2010). Comparative Fit Index (CFI) value should be greater than 0.900 (Hu & Bentler, 1999 & Byrne, 2001). The result was found to be at 0.908, which is greater than the suggested value. Hu and Bentler (1999) suggested the Tucker-Lewis Index (TLI) value at greater than or equal to 0.900 and the registered TLI value was 0.953, which is greater than the suggested value. A smaller Root Mean Square Error of Approximation (RMSEA) value indicates better model fit. In early 90s, the RMSEA value ranges from 0.050 to 0.100 considered as good fit (MacCallum et al. 1996). However,

recently an RMSEA value less than 0.060 was considered as acceptable fit (Hu & Bentler, 1999). The reported RMSEA value was 0.040, which is less than the suggested value. Hence, the overall fit of the model is good.

#### **4.4 PREDICTION OF FINANCIAL DISTRESS CONDITION OF SELECT BANKS USING SURVIVAL ANALYSIS.**

Risk is the main cause of uncertainty in any organization. Financial distress refers to the vulnerable financial position that may result in bankruptcy (Hamid Waqas and Rohani Md-Rusl, 2018). The erosion of capital base, poor credit growth, continued stress on asset quality and higher provisioning requirement are the major causes for declining the performance of banks. The banks are required to focus more on identifying risk and to manage them. The early prediction may help managers in taking appropriate measures to avoid the potential bankruptcies (Hamid Waqas and Rohani Md-Rusl, 2018). The present study tried to identify financial variables, which may help banks to control and focus more for their survival. The study used Cox Proportional Hazard Model under Survival Analysis. The main concept of the model is to obtain comparison between different groups formed on the basis of covariates, in terms of their instantaneous probability of dying at any point in time (P. Heagerty, 2005). The cox proportional model helps in providing an early warning system to forecast failure. In particular, banks and regulators will have a lead time warning of one or two years that may enable them to take action to prevent bank failure (Raymond A.K. Cox et al., 2017). Therefore, the study selected 41 Indian banks, out of which 36 are non-distressed banks (19 public sector banks and 17 private sector banks) and 5 are distressed banks (failure or acquired banks) based on the availability of data. The identified distressed banks are Centurion Bank, Bank of Rajasthan, ING Vysya Bank, Lord Krishna Bank and United Western Bank. The survival analysis of cox proportional hazard model considers 16 representative ratios namely Debt Equity Ratio, Total Advances to Total Assets, Gross NPA to Gross Advances, Net NPA to Net Advances, Earnings Base Ratio, CASA Ratio, Business Per Employee, Return on Equity, Net Interest Margin, Burden Ratio, Efficiency Ratio, Return on Assets, Liquid Assets to Demand Deposits, Government Securities to Total Assets, Total Securities to Total Assets and Risk Sensitive Assets to Risk Sensitive Liabilities Ratio, which are identified under cluster analysis. The model uses panel form data and the results are illustrated in Table 54.

**Table 54 Cox Proportional Hazard Model of Select Scheduled Commercial Banks in India**

Variable	Coefficient (B)	Chi-Square value	P-Value	Hazard Rate
Burden Ratio	1.660	80.76	.000	5.260
Advances to Total Assets	.133	119.17	.000	1.142
Gross NPA to Gross advances	.093	22.062	.000	1.097
Efficiency Ratio	.027	6.65	.004	1.027
Earning Base	-.038	4.480	.034	.963
CASA Ratio	-.071	88.34	.000	.932
Net Interest Margin	-.128	66.46	.000	.880
Return on Assets	-.515	16.85	.000	.598
<b>-2 Log Likelihood</b>	5420.03			
<b>Chi-Square</b>	426.27			
<b>P-Value</b>	.000			

**Source: Computed data**

The hazard rate measures the rate of changes at a specified time period. The key aspects of the analysis is to test the ability of the financial ratios to predict bank survival and to identify influential variables that may affect the survival of banks particularly in assessing the degree of importance of financial ratios in predicting long term survival of banks (Babajide Abiola et al., 2013).

The hazard rate greater than one or equal to one indicates increased hazard of observing the event (i.e., distress condition) with change in a unit of predictor variable. Four variables Burden ratio, Advances to Total Assets, Gross NPA to Gross Advances and Efficiency ratio were found to be greater than one.

The hazard rate of **Burden ratio** was found to be the highest at 5.260 with a positive coefficient at 1.660. This indicates if the burden ratio increases by one unit, there is 5.260 time chances to move toward the distress condition. Almost all the public sector banks burden was higher and majority of the private sector banks controlled their expenses during the study period. Hence, the banks have to control their non-interest expenses to improve their non-interest income to prevent from financial distress condition.

The hazard rate of **Advances to Total Assets ratio** was observed at 1.142 with a coefficient at 0.133. This implies that if the ratio increases by one unit, there is 1.142 times increased probability of entering into distress condition. The results of the study showed that almost all the select banks reported an increasing trend in the ratio of advances to total assets during the study period.

The hazard rate of **Gross NPA to Gross Advances ratio** was at 1.097 with a coefficient at 0.093. This indicates that one unit increase in the ratio, will result in 1.097 times to move towards distress condition. It implies that the banks with higher gross NPA to gross advances ratio are more likely to become distressed compared to banks lower on the respective ratio. All the public sector banks and majority of the private sector banks under study had higher ratio of gross NPA to gross advances, which adversely affects the profitability and capital of the banks. Therefore, banks have to take proactive measures to improve the quality of assets.

The **Efficiency ratio** reported a hazard rate at 1.027 with a coefficient at 0.027. This indicates if the ratio increases by one unit, there is 1.027 time chances to move towards distress condition, i.e., the banks higher on non-interest expenses are more likely to experience distress compared with the banks lower on non-interest expenses. The results of the study showed that all the select banks have to take due steps to increase their efficiency in order to control non-interest expenses and to improve non-interest revenue as additional source of income to the banks.

The hazard rate less than one indicates decreased hazard of experiencing the event (i.e., distress condition) with change in a unit of predictor variable. It is observed that four variables namely, Return on Asset, Net Interest Margin, CASA ratio and Earnings base ratio were found to be less than one.

The **Return on Assets** ratio reported a hazard rate at 0.598 with a negative coefficient at -0.515. It indicates that one unit increase in the ratio will improve the chances of survival by 0.598 times, which lead to non-distress condition. Except Indian Bank all other select public sector banks reported a negative ROA in 2017-2018. Majority of the select banks recorded a downward trend in return on assets due to higher impairment of loan assets and inefficiency of banks management in optimizing assets to earn good return. Thus, the banks have to use their assets more productively through which they can improve their earning efficiency.

The **Net Interest Margin** recorded a hazard rate at 0.880 with a coefficient at -0.128. It indicates that one unit increase in the ratio will improve the chances of survival by 0.880 times, leading to non-distress condition. The results of the study showed that the ratio of all the select banks was on decline. Therefore, the banks have to take measures to control interest expenses to improve net interest margin.

The **Current and Savings Account ratio** reported a hazard rate at 0.932 with a coefficient at -0.071. This indicates that the ratio increases by one unit, the chances of survival increases by 0.932 times, which lead to non-distress condition. The results of the study showed that the use of lower cost of funds in public sector banks is lower compared to private sector banks. Hence, the select banks especially public sector banks have to improve their CASA ratio to reduce the interest payment.

The hazard rate of **Earnings Base** (Advances and Investment to Total Assets) ratio was reported at 0.963 with a coefficient at -0.038. It indicates that one unit increase in the ratio will improve the chances of survival by 0.963 times, resulting in non-distress condition. Almost all the select banks registered a higher earnings base and the ratio started to decline from 2014-2015 due to higher provisioning on non-performing assets. Hence the banks have to use their assets fruitfully in order to increase the productivity of earnings.

It is observed from Wald statistics that the predictor variables Return on Assets, Gross NPA to Gross Advances, Net Interest Margin, CASA ratio, Efficiency Ratio, Burden Ratio and Advances to Total Assets are highly significant at one percent and Earnings Base Ratio alone reported 5 percent level of significance.

The overall statistics shows that the -2 Log Likelihood ratio was higher at 5420.03. The Chi-square value at 426.27 was highly significant at (p= .000) one percent level. This implies the select predictor variables are useful to predict the financial distress condition of Indian Scheduled Commercial Banks. It reports that the overall fit of the model is good. Hence, null hypothesis is rejected. **There is a significant relationship between predictor variables and the financial condition of Indian Scheduled Commercial Banks.**

The financial performance of banks was measured through the indicators of CAMELS components and the results were presented in sector wise (public, private and foreign banks). The study revealed that private banks and foreign banks performed well

compared to public sector banks. The income earned through investments and lending practices is more in private sector and foreign banks indicating the banks operational efficiency in carrying out their business. Management of debt and investment portfolio of private banks and foreign banks outperform public sector banks, which in turn increased their liquidity position. The performance of public sector banks deteriorated due to poor quality of assets. The higher level of non-performing assets adversely affected the profitability and cash flow of the banks. Thus, the public sector banks have to address the issue of non-performing assets to improve their financial performance.