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Similarities and Dissimilarities Between Performance of India's Leading Public and Private Sector Banks

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ABSTRACT

Indian banking industry is on rollercoaster ride since past few years. Stringent norm imposed by Reserve Bank of India with regard to Asset Quality Review is bitterly affecting the banking sector. In this context, we try to assess the performance of leading Indian public and private sector banks. We chose six banks with highest deposits and lending amounts of which three are from public sector and three from private sector banks. We obtain annual reports and stock prices data of these banks for three years from 2012-13 to 2014-15. Data are analyzed using both fundamental and technical analysis. Results of the study reveal that public sector banks are able to mobilize higher deposits with minimal operating costs. On the other hand private sector banks generated substantial income through income from other source and shed fewer amounts on provisions and contingencies. When we test for performance persistence we fail to find any such relation in public and private sector banks. At the end we fail to reject the null hypothesis of no difference in the mean returns of public and private sector banks.

KEYWORDS : Bank Performance, NPAs, Performance Persistence, Fundamental Analysis

Introduction

Banks in India are categorized into three types, public sector banks, Indian private banks, and foreign banks. According to Reserve Bank of India report (2014) total 89 banks are operating in India. There are 26 public banks, 20 Indian private banks, and 43 foreign banks. All these banks are into the business of accepting deposits from customers and lending loans to corporate clients and retail banking customers. However, there are variations in lending portfolios. Major portion of lending by public sector banks are in the form of corporate lending in huge amounts, and with regard to private and foreign banks it is retail lending to customers in small and medium amounts. Among all banks highest revenues are generated by SBI, followed by ICICI bank, HDFC, Axis, PNB, and BOB. The private sector banks entered banking business very delayed compared to public sector banks, still they are able to reach top five positions. In last few years banking sector in India is witnessing sea changes. On one hand, they are asked to review quality of assets and report NPAs and create substantial amounts towards provisions. They are also asked to clean up their balance sheets by March 2017. On the other hand, the RBI is lending them supporting hand through rate cuts. The Government of India is also supporting public sector banks by infusing more funds in the form of Equity Capital. There is unparalleled growth in opening of new accounts, deposits mobilization, expansion of bank branches, and minimization of costs with the help of technology. However, the problem of NPAs prevails and which is badly hurting the Net Profit Margins of Banks. In addition, there is a decline in interest rates, which also affecting the bottom line of banks. In this context, it is an interesting point to research the performance of banks, trace out similarities and dissimilarities in sources of income and expenditure of public and private sector banks, measure the performance persistence, and compare performance of public and private sector banks.

Literature Review

Earlier studies (Petya Koeva, Vradi et.al, Brijesh & Anandeep, Roma Mitra & Shankar Ravi, Kajal Chaudhary & Monika Sharma) evaluated the performance of Indian banks. Similarly, there is also an extensive research globally (Akhter et al, Abdul-Hamid & Azmi, Masruki et al., Samuel Antwi et al., Sanwari & Zakaria, Mukdad Ibrahim) on measuring the performance of banking industry. Many of these studies assessed the performance of banks using fundamental analytical tools. Few of them analyzed stock price performance of banks. Few studies (Christos et al, Kyriaki Kosmidoua et al., Raymond Poteau et al, Jing Yang et al) related financial performance of banks with relative stock price performance. They found no significant relationship between financial performance and stock price performance. There are also studies those measured performance persistence of banks in different countries (Michelle Clark Neely et al, Allen N Gerger et al., John Goddard et al, Krzysztof Jackowicz et al., Glenn Growe et al). The results were mixed. Considering existing limited literature on comparative performance of public and private sector banks using both fundamental and technical analysis, and also very little research on assessing the performance persistence, present study aim to fill this gap and extend the body of knowledge on understanding the dynamics of banking industry.

Remaining part of the paper is divided into three sections. Methodology is discussed in section III. Results of the study are presented and discussed in section IV. Conclusions are drawn in section V.

Methodology

III.1 Sample and Study Period

The principle motto of this study is to compare the financial performance of public sector banks and private sectors. For this purpose we chose six leading banks in India. Revenues of these six banks are considerable and represents major chunk of total revenues generated by 46 Indian public and private sector banks. Of the six banks considered in this study three are public sector banks (SBI, PNB, and BOB) and remaining three are Indian private sector banks (Axis, HDFC, and ICICI).

We obtained three years financial statements of these banks for the years 2012-13 to 2014-15 from concerned bank's official websites. In addition to financial data, we gathered stock prices data of these banks from Bombay Stock Exchange of India. During the sample time frame, we observed stock splits in case of five banks. Before calculating log returns, we adjusted daily stock price data with stock splits. For analysis we used stock split adjusted data. This adjustment will rectify sudden plunge in stock prices.

III.2 Objectives

1. To find out similarities and dissimilarities in major sources of Income / Revenue of Public and Private Sector banks
2. To find out variations in major expenditures / costs of Public and Private Sector Banks
3. To compare the financial performance of Public and Private sector banks using key financial ratios
4. To measure the stock price performance persistence of public sector banks and private sector banks
5. To assess whether mean returns of public sector banks and private sector banks are same
6. To compare the stock price performance between public sector banks and private sector banks

III.3 Hypotheses

H_1: The performance of public sector banks will be persistent during the sample period

H_2: The performance of private sector banks will be persistent during the sample period

H_3: The performance of banking industry will be persistent in the sample period

H_4: There exist significant differences in the performance of Public and Private sector banks stock price performance

III.4 Analysis tools

To appraise the objectives of current study and to test framed hypotheses, we used series of financial and statistical analytical techniques. Initially we concise the annual reports of banks to derive to major sources of income and expenditure. Under each head we identified three major sources. The major sources of income of banks are 1) Interest Income 2) Income on Investments, and 3) Other Income which includes charges levied by banks for providing value added services like ATM facility, Net banking, Mobile Alerts, DD charges etc. The important expenditures that banks incur are 1) Interest Expenses (paid to depositors) 2) Operating Expenses (Salaries, Employee Benefits, Operational Costs, etc.), and 3) Provisions and Contingencies.

Next, we calculated key financial ratios those assess financial performance of banks. The four ratios used in this study are Cost of Income ratio, Net Profit Margin, Return on Equity and Interest Income to Total Assets ratio. After calculating key ratios we moved to stock price analysis. At first stock prices are adjusted to stock splits if any, then, we computed log returns. Summary statistics are calculated on log returns. To measure performance persistence of sample stocks we used analysis of variance. Finally, to compare performance of public sector banks with the performance of private sector banks we applied F ratio. Instead of independent sample t-test, we applied F-ratio because all the analysis was carried out on daily close price. The daily observations are around 1,500. When observations are high, F-ratio gives better results than independent sample t-test.

Results

Table 1 presents major sources of income and expenditure of public and private sector banks. Interest Income of public sector banks ranged between 59% and 70% with average of 64%. Whereas, interest income of private sector banks ranged between 40% and 65% with an average of 55 percent. This clearly visualize that public sector banks generate more revenues through interest income. The story is other way round when we observed other income of banks. Private sector banks earned 25% of revenues through other income and public sector banks were satisfied with 13% only. This explicitly reveals that charges levied by private banks on value added services are high when compared with public sector banks.

we looked at major sources of expenditure, we observed that large piece of expenditure is towards Interest expenses. As banks accept deposits from customers they shed around 60 percent of revenue towards interest on deposits. Interest Expenses of public sector banks is around 62% and for private sector banks it is 52%. The two important reasons for this higher percentage of interest expenses of public sector banks are, public sector banks are having higher amount of deposits when compared to private sector banks, and the rate of interest paid by public sector banks are high when compared to private sector banks.

In this study we observed that the operational expenses of private sector banks around are 30% and for public banks are around 10%. The high operational expenses may be because of huge amount spent by private banks on promotion, advertising, maintaining bank branch ambience, etc. On the other hand provisions of public sector banks are high compared to private sector banks. This may be because of higher rate of NPAs of public sector banks, and tax provision on income earned.

Table 2 displays key financial ratios of public and private sector banks. Cost of Income ratio of private sector banks was higher than that of public sector banks. In 2015 cost of income of ICICI bank was 50% followed by SBI whose cost of income is 41%. Lowest cost of income was reported by BOB. It is observed that cost of income of public sector banks is lower than private sector banks. Surprising results were found with regard to Net Profit Margin ratio. Even though the cost of income was high with ICICI bank it reported highest NPM. Other private banks also fall in the same category. The main reason for this may be the provisions created by public sector banks towards non-performing assets. It is observed that NPA of public sector banks are high compared to private sector banks. Furthermore, majority of lending by public sector banks were corporate lending with higher loan amounts. On the other hand private sector banks were very conservative and lent money through retail banking products with small and medium loan amounts.

The study also found that Return on Equity of private sector banks was high when compared to public sector banks. The private banks were able to leverage high on their equity capital. Moreover, private banks were able to utilize their assets to its best. The interest incomes to total assets ratios of private sector banks are higher than public sector banks.

Table 3 provides descriptive statistics of all the banks for three years. Of the three years of study period, for two years all the banking stocks share prices plummeted. In year 2014 all banking stocks shined. They reported an average of 55% annualized returns. Public sector banks performed very adversely during 2013 and 2015. Losses of private sector banks were minimal in 2013 and moderate in 2015. Stock prices are determined in the stock markets and many a times its investors' perceptions and expectations about future price increase influence current price of shares. As the public sector banks are facing problem regarding NPAs, investors may felt the heat and disposed their investments in public sector banks. By year 2015 the NPAs heat hurt the private sector banks also. Investors may be realized that private sector banks are not much better than public sector banks related to NPAs.

Hypotheses testing results of performance persistence are provided in table 4. First we assessed performance persistence of public sector banks, then private sector banks, and finally all the sample banks. The tests were conducted separately for each sector and for each year. The ubiquitous method to interpret hypothesis testing results is comparing P-value with alpha value and observed F value with F critical value. For this study the set alpha value is 0.05. A null hypothesis is accepted when P-value is greater than alpha value, and null hypothesis is rejected when P-value is less than alpha value. Similarly, if observed F value is less than F critical value null hypothesis is accepted, and if observed F value is greater than F critical value null hypothesis is rejected.

By observing the F value, P-value, and F critical values, and comparing p-value with alpha value it is clearly noticeable that there is no similarity in mean returns of banking stocks during the study period. As p-values are higher than alpha value the study accept null hypothesis of no persistence in returns during three years considered in this study. Comparison of observed F with F critical also reveals the same result. These results caution the investors and make them vigilant in making investment decisions. Performance reported in one year may not be repeated in next year. During year 2013 all the sample banks reported huge losses, and in 2014 they reported exceptional returns, but in 2015 they were not able to retain significant returns bestowed in 2014. The reasons for such kind of results are financial performance of banks related to income and expenses, and changing investor perceptions towards banking stocks.

Finally, we compared the stock price performance of public sector banks and private sector banks. We hypothesized that there will be statistically significant difference in the performance of public and private sector banks. This hypothesis is made based on basic differences found in financial statements analysis. We observed difference in interest income, other income, interest expenses, provisions, and operating expenses. To test whether these difference have any impact on the stock price movements we run F test. Results of hypothesis testing to compare the mean returns of two sectors are presented in table 5. The calculated p-values are higher than the alpha value of 0.05 hence we accept the null hypothesis. This result indicates that investors in stock markets do not find any difference in private and public sector banks. In year 2013 and 2015 both sectors reported negative mean returns with high standard deviations. And in year 2014 both sectors presented positive returns with low standard deviations. These results reveal that both private and public sector stock moved

in same direction, because of which we find no difference in mean returns and accepted null hypothesis of no similarity in returns.

Conclusion

This study is performed to find out the similarities and dissimilarities in the performance of public and private sector banks. We used both fundamental analysis and technical analysis techniques to measure the performance. We found that interest income of public sector banks is higher than private sector banks. On the other hand income from other source of private sector banks is higher than public sector banks. It is also worth mentioning that operating expenses of private sector banks are higher than public sector banks. Whereas, net profit margins of private sector banks are higher than public sector banks. Interest expenses and provisions of public sector banks are more than those of private sector banks. When examined the performance persistence of banking stocks, we failed to find any persistence. Stock price returns oscillated in sample period. Finally, the study failed to trace any difference in the mean returns of public and private sector banks. Hypothesis testing results of comparative performance of public and private sector banks failed to reject the null hypothesis hence we report similarity in the mean returns of public and private sector banks.

Table 1: Common Size Income Statements of Public and Private Sector Banks

Major Sources of Revenue of Public Sector Banks									
	Bank of Baroda			Punjab National Bank			State Bank of India		
Income / Year	2013	2014	2015	2013	2014	2015	2013	2014	2015
Interest Income	64.98	62.27	62.88	69.04	67.87	66.90	63.04	62.30	59.52
Income from Investments	19.26	20.20	21.05	20.79	21.44	20.12	19.30	19.77	19.82
Other Income	11.01	12.07	10.82	9.08	9.48	11.25	16.25	16.69	19.17
Major Sources of Revenue of Private Sector Banks									
	Axis Bank			HDFC Bank			ICICI Bank		
Income / Year	2013	2014	2015	2013	2014	2015	2013	2014	2015
Interest Income	56.33	57.20	58.53	64.17	65.05	65.33	39.84	42.38	42.19
Income from Investments	22.76	21.72	20.52	18.20	17.78	17.79	17.95	17.90	16.77
Other Income	20.08	20.17	19.83	16.59	16.32	15.85	39.51	37.81	39.08
Major Sources of Expenditure of Public Sector Banks									
	Bank of Baroda			Punjab National Bank			State Bank of India		
Expenditure / Year	2013	2014	2015	2013	2014	2015	2013	2014	2015
Interest Expended	67.64	67.19	65.65	65.49	61.17	60.81	58.61	57.18	55.54
Operating Expenses	17.42	18.48	18.49	4.38	3.60	3.89	4.53	2.67	3.91
Provisions and Contingencies	14.94	14.34	15.86	14.87	18.06	18.22	12.40	12.99	13.66
Major Sources of Expenditure of Private Sector Banks									
	Axis Bank			HDFC Bank			ICICI Bank		
Expenditure / Year	2013	2014	2015	2013	2014	2015	2013	2014	2015
Interest Expended	60.81	58.10	57.50	54.57	55.71	55.11	44.14	43.76	41.82
Operating Expenses	24.79	25.50	25.89	32.01	29.63	29.44	37.38	35.32	35.79
Provisions and Contingencies	14.40	16.40	16.61	13.43	14.67	15.44	8.71	11.06	12.85

Table 2: Key Financial Ratios of Public and Private Sector Banks

Variable	Cost of Income			Net Profit Margin		
Bank / Year	2013	2014	2015	2013	2014	2015
BOB	28.60	29.29	31.73	13.03	12.18	8.53
PNB	30.92	36.06	36.80	11.43	7.86	6.85
SBI	37.60	40.08	41.42	10.90	7.66	8.42
Axis	33.16	35.03	35.39	19.24	20.52	20.84
HDFC	38.14	36.66	36.90	19.24	20.59	21.11
ICICI	48.23	47.98	49.83	22.56	23.60	23.54
Variable	Return on Equity			Interest Income to Total Assets		
Bank / Year	2013	2014	2015	2013	2014	2015
BOB	14.43	13.21	9.30	6.51	5.98	6.11
PNB	14.37	9.39	7.98	8.67	7.82	7.65
SBI	14.32	9.61	10.53	7.87	7.89	7.70
Axis	15.78	16.43	16.56	7.98	7.95	7.64
HDFC	18.74	19.79	16.92	8.79	8.44	8.34
ICICI	13.96	14.44	14.45	6.65	6.61	6.65

Table 3: Descriptive Statistics

Descriptives FY 2013					
Groups	Trading Days	Sum	Average	Variance	Std Dev
log BOB	249	-31.31	-0.13	7.35	2.71
log PNB	249	-35.29	-0.14	6.82	2.61
log SBI	249	-31.78	-0.13	3.91	1.98
log Axis	249	-4.70	-0.02	7.02	2.65
log HDFC	249	-2.76	-0.01	3.32	1.82
log ICICI	249	-5.38	-0.02	5.01	2.24
Descriptives FY 2014					
Groups	Count	Sum	Average	Variance	Std Dev
log BOB	244	51.85	0.21	5.00	2.24
log PNB	244	55.86	0.23	5.13	2.26
log SBI	244	56.89	0.23	3.49	1.87
log Axis	244	65.83	0.27	2.98	1.73
log HDFC	244	35.77	0.15	1.49	1.22
log ICICI	244	47.43	0.19	2.80	1.67

Descriptives FY 2015					
Groups	Count	Sum	Average	Variance	Std Dev
log BOB	248	-32.48	-0.13	7.18	2.68
log PNB	248	-63.90	-0.26	5.33	2.31
log SBI	248	-32.91	-0.13	3.75	1.94
log Axis	248	-11.06	-0.04	4.48	2.12
log HDFC	248	12.87	0.05	1.34	1.16
log ICICI	248	-30.02	-0.12	3.91	1.98

Table 4: Performance Persistence

Hypothesis Testing Results FY2013				
Sector / Test	df	F	P-value	F crit
Public	(2,744)	0.003	0.99	3.01
Private	(2,744)	0.001	0.99	3.01
All Banks	(5,1488)	0.177	0.97	2.22
Hypothesis Testing Results FY2014				
Sector / Test	df	F	P-value	F crit
Public	(2,729)	0.006	0.99	3.01
Private	(2,729)	0.388	0.67	3.01
All Banks	(5,1458)	0.121	0.98	2.22
Hypothesis Testing Results FY2015				
Sector / Test	df	F	P-value	F crit
Public	(2,741)	0.241	0.78	3.01
Private	(2,741)	0.574	0.56	3.01
All Banks	(5,1487)	0.609	0.69	2.22

Table 5: Comparative Performance of Public and Private Sector Banks								
	Public		Private					
Year / Test	Mean	Std Dev	Mean	Std Dev	df	F	P-value	F crit
2013	-0.13	2.45	-0.02	2.25	(1,1492)	0.88	0.34	3.85
2014	0.22	2.13	0.20	1.56	(1,1462)	0.04	0.82	3.85
2015	-0.17	2.32	-0.03	1.80	(1,1486)	1.59	0.20	3.85
Reject the null hypothesis if the F observed is larger than the F critical.								

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