Ivey | Publishing

W16476

FRAUD AT BANK OF BARODA: MANAGE RISK OR MANAGE CRISIS[1]

P. S. Jayakumar took over as the managing director and chief executive officer (CEO) of Bank of Baroda (BoB) on October 13, 2015. In the week before Jayakumar joined the bank, news of two cases of fraud rocked the banking industry. Both cases—one amounting to ₹3.5 billion[2] and the other to ₹60 billion—involved BoB. The fraud was being investigated by India's Central Bureau of Investigation, Enforcement Directorate, and Serious Fraud Investigation Office. Because the implications for India's banking industry were immense, both cases were being closely monitored by the Reserve Bank of India (RBI) and the Ministry of Finance.[3] Given these recent events, Jayakumar could not take his time settling in to his new appointment; rather, he needed to establish his priorities and take action promptly. How could he lead the bank through the coming investigations?

Jayakumar was only the second executive from the private sector appointed by the Government of India to head a public sector bank. Traditionally, public sector banks were headed by bankers appointed from other public sector banks. However, to recruit fresh talent, the government opened CEO positions at public sector banks to candidates from the private sector. Before joining BoB, Jayakumar was heading VBHC Value Homes Private Limited; prior to that, he worked for 23 years with CitiBank in India and Singapore.[4] When Jayakumar took over BoB, the bank had been without a full-time CEO for almost 14 months. The last full-time chairman and managing director of the bank, Subhash Sheoratan Mundra, was appointed deputy governor of the RBI in July 2014. Since then, an executive director of BoB had been handling operations.[5]

---

[1] This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of Bank of Baroda or any of its employees.
[2] ₹ = INR = Indian rupee; all currency amounts are in ₹ unless otherwise specified; US$1 = ₹64.73 on October 13, 2013.
[3] Tamal Bandyopadhyay, "New CEO Jayakumar's Challenge at Bank of Baroda," Livemint, October 14, 2015, accessed October 17, 2015, www.livemint.com/Opinion/V31nrd0sJl2eveEM7F5XVK/New-CEO-Jayakumars-challenge-at-Bank-of-Baroda.html.
[4] "P. S. Jayakumar Takes Over as MD and CEO of Bank of Baroda," *Economic Times*, October 13, 2015, accessed October 19, 2015, http://economictimes.indiatimes.com/industry/banking/finance/banking/p-s-jayakumar-takes-over-as-md-ceo-of-bank-of-baroda/articleshow/49335730.cms.
[5] Abhijit Lele, "Jayakumar Takes Charge as MD & CEO of Bank of Baroda," *Business Standard*, October 13, 2015, accessed October 19, 2015, www.business-standard.com/article/finance/jayakumar-takes-charge-as-md-ceo-of-bank-of-baroda-115101300434_1.html.

BANK OF BARODA

BoB was established in 1908, and nationalized in 1970, when it became a public sector bank. Over the years, BoB grew to become the second-largest bank in India in terms of assets. As of March 31, 2015, BoB had an asset base of ₹7,340 billion, a network of 5,250 branches, and 49,378 employees.[6] The bank's shares had been listed on the Indian bourses since 1997, with a market capitalization of ₹405 billion as of September 30, 2015. The majority stake in the bank (57.5 per cent) was held by the Indian government. Institutional investors held 34.3 per cent of the shares; the remaining 8.2 per cent were held by non-institutional investors.

The bank positioned itself as "India's international bank" with large overseas operations spanning 25 countries. The bank's mission was "to be a top ranking national bank of international standards committed to augmenting stakeholders' values through concern, care, and competence."[7]

The bank took pride in its heritage and ethical standards, and credited these virtues for its long-term survival, as its company website confirmed. BoB had ambitious plans to expand its international footprint. It was already present in 25 countries with 105 branches and offices, and had joint ventures in Zambia and Malaysia. To ensure its participation in the major global financial centres, the bank maintained offices in New York, London, Brussels, Dubai, Hong Kong, and Singapore. The bank was looking forward to identifying and opening more overseas centres and expanding its branch network in locations such as the United Kingdom, the United Arab Emirates, Kenya, Uganda, Ghana, and Botswana.[8]

THE BANK'S FINANCIAL PERFORMANCE

The bank's asset base grew from ₹3,662 billion in 2011, to ₹7,340 billion in 2015, recording an impressive compound annual growth of 16 per cent; the bank's total income showed the same trend, growing from ₹258 billion to ₹504 billion during the same period. However, the profit failed to keep pace with the growth in assets and income. The net profit of the bank increased from ₹39 billion to over ₹44 billion during the period from 2011 to 2015—a growth of just 3 per cent per annum. One of the major reasons for the lower profitability was increased provisions and contingencies that grew from ₹17 billion to ₹52 billion from 2011 to 2015—a growth of 24 per cent per annum (see Exhibit 1). The net interest margin, returns on assets, and net worth declined persistently. Finally, the non-performing assets ratio increased from 2011 to 2015, showing a declining quality of assets (see Exhibit 2).

RECENT PROBLEMS AT BANK OF BARODA

In the week before Jayakumar assumed the position of CEO, BoB had been in the headlines for the wrong reasons: a bill discounting fraud of ₹3.5 billion in Ahmedabad, and an alleged money-laundering scam of ₹60 billion in New Delhi.

On October 5, 2015, BoB identified irregularities of ₹3.5 billion in bill discounting transactions in its Ahmedabad operations: bill receivables of ₹3.5 billion had been discounted, but the bank did not show any payment received on maturity of the bills. Bill discounting involved a company selling its accounts

---

[6] Bank of Baroda, *Racing Together—Racing Ahead: Annual Report 2014–15*, May 11, 2015, 176, accessed October 18, 2015, www.bankofbaroda.co.in/download/Annual_Report_2014_15.pdf.
[7] "About Us," Bank of Baroda, accessed October 18, 2015, www.bankofbaroda.com/aboutus.asp.
[8] "International Operations," Bank of Baroda, accessed October 18, 2015, www.bankofbaroda.com/int/index.asp.

receivable to an agent or bank for less than the full value of the accounts receivable. A genuine bill discounting transaction was supported by a bill or invoice arising from the company's supply of goods or services on credit. The receivables arising from the transactions were then sold to a bank at a discount. The transaction provided working capital to the company, and a profit for the bank once the bank collected on the full value of the accounts receivable.[9] When some of the bills discounted by one of the clients in Ahmedabad were dishonoured on maturity, the bank investigated the matter. It was found that the client had discounted 184 bills against which no export had taken place.

An unscrupulous customer could create bills or invoices without supplying any goods or providing any services. The fake bills were then sold to a bank. To prevent these problems, banks normally avoided bill discounting unless it was for a reputed client and the transactions met adequate checks and balances. A public sector bank official explained:

> When a bank takes an exposure on a particular customer, who is supplying goods to 10–15 buyers, there is a prescription that the exposure to each buyer should not exceed a particular limit. Thus, certain risk management practices are in place. The discounting facility should be given only to "good" customers and not just anybody. Similar frauds involving bills discounting facilities were also reported earlier by the Indian banks. A couple of years back, a large diamond exporter went on exporting to his sister concerns and relatives in Dubai and the [export] bills were discounted by banks in India.[10]

A few days after the bill discounting fraud was revealed, BoB was in the press again, this time with an alleged money-laundering scam involving ₹62 billion of foreign exchange at one of the bank's branches in New Delhi. Money laundering was a process of transferring money through several agents, banks, or countries to obscure the origins of the money. Money laundering was illegal—a "crime of moving money that [had] been obtained illegally through banks and other businesses to make it seem as if the money [had] been obtained legally."[11]

To prevent misuse of the banking system for money laundering, the RBI issued detailed guidelines for banks to follow. The guidelines required that banks have a customer acceptance policy, a customer identification procedure, and transaction monitoring. According to the policy, banks had to ensure that no accounts were opened in anonymous or fictitious names. The policy required banks to establish the identity of each new customer, as well as the purpose of the banking relationship. Customers were then to be classified as low, medium, or high risk, depending upon factors such as the nature and location of the customer's business and the business's clients, the mode of payment and volume of turnover, and the customer's social and financial status.

Regular transaction and account monitoring were also mandated by the policy. Large and complex transactions that involved a significant amount of cash or were otherwise inconsistent with the customer's profile were required to be monitored more closely. Account monitoring was expected to identify cases where the volume of transactions was not consistent with the balance maintained in the account. For example, transactions involving large amounts of cash were closely monitored if they were inconsistent with the client's normal activities. In addition, a high volume of transactions in an account compared to the

---

[9] "Bank of Baroda Detects Rs 350 Crore Bill Discounting Irregularity: Report," NDTV Profit, October 6, 2015, accessed October 17, 2015, http://profit.ndtv.com/news/industries/article-bank-of-baroda-detects-rs-350-crore-bill-discounting-irregularity-report-1228612.

[10] "RBI to Tighten Bill Discounting Norms," *Hindu Business Line*, October 6, 2015, accessed October 17, 2015, www.thehindubusinessline.com/money-and-banking/rbi-to-tighten-bill-discounting-norms/article7731216.ece.

[11] *Cambridge Dictionaries Online*, "Money Laundering," accessed October 27, 2015, http://dictionary.cambridge.org/us/dictionary/english/money-laundering.

balance maintained sometimes suggested money laundering. The policy required banks to set internal key indicators for monitoring.[12]

Internal investigations carried out by the bank in August 2015 revealed irregularities in remittances of foreign exchange at one of its branches in New Delhi. The branch had just commenced its foreign exchange business in 2013. Between May 13, 2014 and June 20, 2015, 59 new foreign exchange accounts were opened by perpetrators of fraud. During the same period, the branch remitted a total of 5,853 outward foreign exchanges made from those 59 new accounts. A total of US$546.10 million had been issued to various overseas parties in Hong Kong and Dubai. Around 10 per cent of the total amount had been deposited in cash; the rest came through transfers from 30 other banks.

The media reported that the scheme involved opening several accounts and keeping the transaction size below US$100,000. Large transactions were usually noticed by the RBI or agencies like the Finance Intelligence Unit, or identified by automatic detection tools. Thus, to avoid attention, the funds were split into small transactions. Also, many of the accounts were opened using non-existent addresses. The transactions were not backed by genuine imports or exports, and no real movement of goods took place.[13]

The bank reported the irregularities revealed by the bank's internal investigations to the authorities.[14] According to the bank's own admission, the branch did not adhere to the guidelines issued under the *Foreign Exchange Management Act*.[15] Because the transactions took place in newly opened accounts with large cash receipts, the branch was expected to generate exceptional and suspicious transaction reports. However, the branch submitted only 79 regular cash transaction reports to the Financial Intelligence Unit during this period. Clearly, the branch had failed to adhere to what were commonly known as the "know your client" (KYC) norms when opening new accounts, and failed to follow the RBI's anti-money-laundering (AML) guidelines to identify suspicious transactions. Investigative agencies tried to establish whether this failure to comply was deliberate, in connivance with bank officials.

Both the bill discounting and foreign exchange matters were investigated by state agencies, and the investigations were closely monitored by the regulator. Raghuram Rajan, the governor of the RBI, stated,

> The matter will be pursued both by the central bank and investigative agencies to the ultimate conclusion to ensure that the guilty are made to pay the price for it. If not pursued quickly, such frauds create an atmosphere of impurity which then breeds more such practices. We have created a whole new system for fraud alerts [and] fraud awareness amongst the banks.[16]

The Central Bureau of Investigation arrested six people, including two senior officials at the bank in connection with the foreign exchange scam. The bank's stocks fell by over 3 per cent in just eight trading

---

[12] Reserve Bank of India, *Master Circular: Know Your Customer (KYC) Norms, Anti-Money Laundering (AML) Standards, Combating Financing of Terrorism (CFT), Obligation of Banks and Financial Institutions under PMLA, 2002*, July 1, 2015, accessed October 27, 2015, www.rbi.org.in/scripts/BS_ViewMasCirculardetails.aspx?id=9848.
[13] Dinesh Unnikrishnan, "The Black Money Black Hole: BoB Fraud Shows Our Banks Are Legit Route for Illegitimate Stash," *Firstpost*, October 15, 2015, accessed October 17, 2015, www.firstpost.com/business/the-black-money-blackhole-bob-fraud-shows-our-banks-are-legit-route-for-illegitimate-stash-2467962.html.
[14] Bank of Baroda, Letter to Bombay Stock Exchange, Letter no. BCC:ISD:107/16/529-A, October 12, 2015, accessed October 18, 2015, http://corporates.bseindia.com/xml-data/corpfiling/AttachHis/97B2912A_7C0D_4835_A1CB_A8A0D1E2AA4E_151548.pdf.
[15] Government of India, *The Foreign Exchange Management Act, 1999: No. 42 of 1999,* accessed June 13, 2016, http://finmin.nic.in/the_ministry/dept_eco_affairs/capital_market_div/FEMA_act_1999.pdf.
[16] "Bank of Baroda Fraud Will Be Pursued to Ultimate Conclusion—Raghuram Rajan," *Firstpost*, October 15, 2015, accessed October 17, 2015, www.firstpost.com/business/bank-of-baroda-fraud-will-be-pursued-to-ultimate-conclusion-raghuram-rajan-2470324.html.

sessions after the news broke on October 6, 2015. In comparison, the broad market increased 1 per cent during the same period. Citing the scams, IDFC Limited, an institutional stockbroker, downgraded the bank from "outperformer" to "neutral." Justifying the downgrade, IDFC reported:

> We believe with these series of negative events, the new CEO will have to spend a lot of time correcting past errors, especially cleaning up international operations and the SME book [loans to small- and medium-sized enterprises], both of which have grown strongly for BoB in the last few years. As such, we expect a huge jump in provisioning in the next few quarters starting [with the third quarter of FY2016]. . . . We believe the alleged scandal is negative for BoB and the entire state-owned banking pack.[17]

RISK MANAGEMENT AT BANK OF BARODA

The bank's board of directors was responsible for maintaining the bank's risk management framework. The board as a whole defined the risk limits and established the policies and framework for effective monitoring; managing the risks was coordinated and supervised by various sub-committees of the board. The objective of risk management was to ensure that the risks remained within the range defined by the board.

The board of directors also had an audit committee of six directors. The committee was headed by a non-executive director and was responsible for developing and coordinating internal audits, concurrent audits, and information system audits. The committee also reviewed the adequacy of the internal control systems in the bank. The Central Internal Audit Division of the bank was responsible for ensuring that the systems, policies, and procedures established by the board and its committees were followed. During the year ended March 31, 2015, the division inspected 4,291 branches under risk-based internal audit.

BoB had a comprehensive risk management policy that covered KYC and AML standards, the country's Combating Financing of Terrorism measures,[18] and the bank's obligations under the *Prevention of Money Laundering Act*.[19] The policy was duly approved by the bank's board of directors. The policy was intended to help the bank manage its risk prudently by ensuring that its facilities were not being used by criminal elements for money laundering or terrorist financing activities.

According to the policy, BoB generated cash transaction reports electronically for submission to the Finance Intelligence Unit. System-based alerts and detecting and reporting suspicious transactions to the Finance Intelligence Unit were key measures that the bank claimed to have implemented. BoB was also in the process of assigning a unique customer identification code to all its existing customers. Regular training sessions for staff were conducted, covering all of the risk management guidelines. Any deficiencies spotted through on- and off-site test checking were promptly rectified.[20]

---

[17] IDFC Institutional Securities, "Downgrade Bank of Baroda on Alleged Scam: IDFC Institutional Securities," *Financial Express*, October 15, 2015, accessed October 16, 2015, www.financialexpress.com/article/markets/indian-markets/downgrade-bob-on-alleged-scam-idfc-institutional-securities/151343.
[18] Ramanand Garge, *Combating Financing of Terror: An Indian Perspective* (New Delhi: Vivekananda International Foundation, October 2015).
[19] *The Prevention of Money-Laundering Act, 2002*, No. 15 of 2003, Central Government, accessed June 13, 2016, www.imolin.org/doc/amlid2/India%20PMA02.pdf.
[20] Bank of Baroda, *Racing Together—Racing Ahead: Annual Report 2014–15*, op. cit.

When BoB completed the Wolfsberg Group's[21] AML questionnaire on January 14, 2015, it confirmed that it had appropriate policies in place, which had been applied to all branches. The bank also confirmed that it had implemented processes for identifying customers who maintained or operated accounts at the bank. The questionnaire also established that BoB had policies and procedures for identifying and reporting suspicious transactions to the authorities, and that the bank provided AML training to relevant employees.[22]

However, it appeared that these policies and procedures were ignored by bank officials in both Ahmedabad and New Delhi, resulting in the two scandals. Though in both cases the irregularities were spotted and reported by the bank's internal teams, there were long delays in catching the problems, resulting in significant damage to the bank. Whether or not BoB officials acted wilfully, their failure to adhere to these guidelines indicated that there was a serious gap between the policies and their implementation, and this was not the first time: over the previous two years, the bank had been penalized twice by the RBI for failing to adhere to KYC and AML norms.

BANKING FRAUD IN INDIA

There had also been cases of irregularities and fraud earlier in India's banking industry. Banks were required to report all fraud cases involving more than ₹100,000 to the RBI. Public sector banks reported 2,100 fraud cases, involving a total of ₹110 billion, between April and December of 2014.[23]

The most commonly observed violation appeared to be related to KYC and AML norms. In 2013, the RBI imposed a total of ₹500 million in fines on 22 banks, and issued warnings to seven other banks for violation of the norms. BoB was among that group, having been fined ₹30 million.[24] In 2014, the RBI imposed a penalty of ₹5 million on ICICI Bank, the largest private sector bank in India, and again fined BoB, this time for ₹2.5 million.[25] In April 2015, more fines were imposed on three public sector banks, and eight other public sector banks were asked to ensure strict compliance with the norms. The banks failed to appropriately identify customers or monitor transactions. There were also problems with funds received through real-time gross settlement[26] systems.[27]

In a 2015 survey of officials from financial institutions in India, conducted by an international audit firm, 93 per cent of the respondents indicated that the incidence of fraud in the banking industry had increased over the past two years.[28] The survey also identified the two major reasons for the increase in fraud

---

[21] The Wolfsberg Group was an association of global banks consisting of Banco Santander, Bank of Tokyo-Mitsubishi, Barclays Group, Credit Suisse, Deutsche Bank, Goldman Sachs, JP Morgan Chase, Societe-Generale, and UBS. The group develops industry standards for KYC and AML norms, and counter-terrorist financing policies.
[22] Bank of Baroda to the Wolfsberg Group, *Anti-Money Laundering Questionnaire*, January 14, 2015, accessed October 18, 2015, www.bankofbaroda.co.in/download/Bank_of_Baroda_Standard_AML_Questionnaire.pdf.
[23] Bandyopadhyay, op. cit.
[24] "RBI Fines 22 Banks, Warns 7 for KYC Violations," Moneycontrol, July 16, 2013, accessed October 20, 2015, www.moneycontrol.com/news/business/rbi-fines-22-banks-warns-7-for-kyc-violations_917614.html.
[25] Anita Bhoir, "Violation of KYC Norms: RBI Slaps Rs 50 Lakh Penalty on ICICI Bank, Rs 25 Lakh on Bank of Baroda," *Economic Times*, December 18, 2014, accessed October 20, 2015, http://articles.economictimes.indiatimes.com/2014-12-18/news/57196411_1_kyc-norms-12-banks-cobrapost.
[26] Real-time gross settlements were special transfers of funds involving the transfer of money or securities from one bank to another in "real time," meaning without any waiting period. The transactions were settled on a one-to-one basis, not bundled with other transactions. Once processed, real-time gross settlements were final and irrevocable.
[27] "RBI Fines Three Government-Run Banks for Violating KYC Norms," *Business Standard*, April 30, 2015, accessed October 20, 2015, www.business-standard.com/article/finance/rbi-fines-three-govt-run-banks-for-violating-kyc-norms-115043000029_1.html.
[28] Deloitte Touche Tohmatsu Limited, *Indian Banking Fraud Survey: Edition II*, April 2015, accessed October 19, 2015, www2.deloitte.com/content/dam/Deloitte/in/Documents/finance/in-fa-banking-fraud-survey-noexp.pdf.

incidents: lack of oversight by line managers and deviations from the existing processes by top management. Increased pressure to meet unreasonable targets, unavailability of tools for identifying potential red flags, and collusion between employees and external parties were identified as the next three reasons for an increase in fraud cases.

THE WAY FORWARD

BoB was facing problems with declining profitability, an increase in non-performing assets, and higher provisioning. The two recent fraud scandals indicated that the bank was also failing to implement its own risk management policies. The fraud incidents were likely to attract regulatory sanctions, and would necessitate higher provisioning. The adverse publicity would impact the confidence of depositors and bank investors. There was an urgent need to review the policies and procedures, and the way they were being implemented across a bank of more than 5,000 branches and nearly 50,000 employees. Jayakumar made a public commitment to address the problem:

> We may be appointing an external accounting firm to see what escaped our eyes, such as the KYC issue. In the next week, we will submit a proper plan to the audit committee on the matter. We have to make appropriate changes to the processes, structure, and training so that a repeat of such instances doesn't happen.[29]

Jayakumar did not give himself a lot of time. The newly appointed CEO needed to set his priorities and take concrete action promptly.

Sanjay Dhamija is a professor at International Management Institute, New Delhi

[29] "Rs 6,000-Crores Forex Scam: Bank of Baroda to Hire External Accounting Agency," *Economic Times*, October 14, 2015, accessed October 16, 2015, http://economictimes.indiatimes.com/news/economy/policy/rs-6000-crore-forex-scam-bank-of-baroda-to-hire-external-accounting-agency/articleshow/49345179.cms.

EXHIBIT 1: FINANCIAL PERFORMANCE OF BANK OF BARODA FOR THE YEARS ENDED MARCH 31 (₹ MILLIONS)

Balance Sheet

DESCRIPTION	2011	2012	2013	2014	2015
Share Capital	3,928	4,124	4,225	4,307	4,436
Reserves and Surplus	214,338	281,039	328,593	374,161	415,741
Minority Interest	729	912	1,101	1,584	1,867
Deposits	3,116,032	3,926,159	4,826,389	5,799,971	6,299,813
Borrowings	223,783	235,981	265,529	369,763	355,015
Other Liabilities and Provisions	103,327	125,905	168,047	211,355	262,902
Total Liabilities	3,662,138	4,574,120	5,593,883	6,761,141	7,339,774
Cash and Balance with RBI	203,944	222,683	141,512	194,447	235,569
Balances with Banks and Call Money	310,293	435,420	735,509	1,149,109	1,280,742
Investments	741,544	866,970	1,256,171	1,221,129	1,302,464
Advances	2,320,851	2,920,771	3,336,252	4,037,154	4,354,155
Other Assets	85,505	128,275	124,440	159,302	166,842
Total Assets	3,662,138	4,574,120	5,593,883	6,761,141	7,339,774

Profit and Loss Statement

	2011	2012	2013	2014	2015
I. INCOME					
Interest Earned	225,133	304,885	364,421	404,629	449,150
Other Income	32,871	41,004	45,106	55,552	54,493
Total Income	258,004	345,889	409,527	460,180	503,642
II. EXPENDITURE					
Interest Expended	133,496	197,243	244,864	276,044	305,466
Operating Expenses	48,506	54,555	63,064	75,923	86,044
Provisions and Contingencies	17,038	31,048	49,653	48,249	52,300
Profit before Tax	58,964	63,043	51,946	59,964	59,832
Taxes	14,772	10,880	4,441	10,652	21,505
Profit after Tax	44,192	52,163	47,505	49,312	38,327
Minority Interest	(202)	(208)	(248)	(357)	(387)
Share of Earnings in Associates	347	531	785	1,052	1,177
Consolidated Net Profit	44,337	52,486	48,042	50,007	39,117

Source: Authors' calculations based upon Bank of Baroda, *Annual Reports*, accessed October 18, 2015, www.bankofbaroda.co.in/fin/AnnualReport.asp.

EXHIBIT 2: KEY PERFORMANCE INDICATORS OF BANK OF BARODA FOR THE YEARS ENDED MARCH 31 (%)

	2011	2012	2013	2014	2015
Net Interest Margin	3.12	2.97	2.66	2.36	2.31
Cost Income Ratio	39.87	37.55	39.79	43.44	43.63
Return on Assets	1.18	1.12	0.82	0.69	0.48
Return on Net Worth	21.42	19.11	14.59	13.00	9.21
Gross Non-Performing Assets	1.36	1.53	2.40	2.94	3.71
Net Non-Performing Assets	0.35	0.54	1.28	1.52	1.89

Notes:

Net Interest Margin = $\frac{Total\ Interest\ Income}{Average\ Working\ Funds} - \frac{Total\ Interest\ Expenses}{Average\ Working\ Funds}$

Cost Income Ratio = $\frac{Total\ Operating\ Expenses}{Non\text{–}Interest\ Income + (Interest\ Income - Interest\ Expenses)}$

Return on Assets = $\frac{Net\ Profit}{Total\ Assets}$

Return on Net Worth = $\frac{Net\ Profit}{Net\ Worth}$

Gross Non-Performing Assets = $\frac{Gross\ NPA}{Total\ Advancess}$

Net Non-Performing Assets = $\frac{Net\ NPA}{Total\ Advancess}$

Source: Bank of Baroda, *Racing Together—Racing Ahead: Annual Report 2014–15*, 175–176, May 11, 2015, accessed October 18, 2015, www.bankofbaroda.co.in/download/Annual_Report_2014_15.pdf.