



Capital Adequacy and its Relevance to the Indian Banking Sector: A Study of Four Indian Banks

V.K. Narasimhan and Mridula Goel

¹Dept. of Mechanical Engineering, BITS Pilani KK Birla Goa Campus NH 17B, Zuarinagar Goa, INDIA

¹Dept. of Economics, BITS PILANI KK Birla Goa, INDIA

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Abstract

The global financial system has not yet attained complete recovery post the financial crisis in the United States, the soft landing in China and the Euro zone crisis. The Indian banking sector has thus far been reasonably well shielded by central banking regulations, but in the current scenario of low growth, persistent inflation, asset quality concerns and increasing interest rates, the investment cycle has been fluctuating leading to a lot of worries. This report analyses the performance of the top Indian banks, both private and public sector for the period FY 2008 – 2012, the years since the last world recession. Our report attempts to demonstrate that the Indian banks exhibit stability in such times of crisis due to their capital structure and regulatory environment.

Keywords: Capital adequacy, leverage, capital structure, earnings per share.

Introduction

Indian regulatory responses to prevent the effects of the US financial crisis from reaching us were stringent and serious. This led to an increase in cost of borrowings, leading to an increase in cross selling of financial products such as credit cards, insurance policies and mutual funds to earn a net positive return¹. There was also a surge in the use of technology, with the increased use of ATMs, mobile and internet banking, etc. The financial slowdown in the US had affected and caused a transformation in India as well.

The banking sector in India is a very competitive one, with a lot of barriers to entry. Licensing requirements, heavy investment in technology, branch network, capital requirements and regulations are very strict in this country, and have been made

stricter after the recent global recession². There are a large number of banks in the country, both in public and private sector, catering to the credit and financial needs of a large number of people.

Significance: Banks today are an essential part of the economy for the services they provide. Today's banking sector serves a variety of sectors via loans, and in fact is necessary for any industry to keep moving ahead. In India, for the financial years 2009 – 2012, we see that almost half the credit from banks has been spent on manufacturing industries more than on agriculture, service industries, etc. Apart from this, the banking sector is also very essential for the import and export system of a country³.

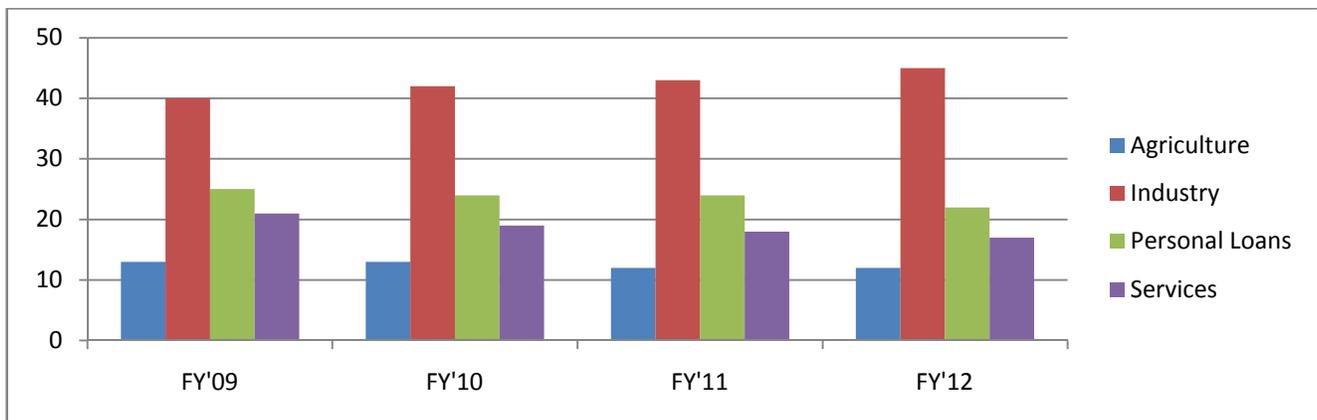


Figure-1

Data taken from www.rbi.org and compiled by the authors

Since Banks are an integral part of any economy, it is necessary to ensure that they have adequate strength to survive any financial downturns, while at the same time expanding their businesses to provide as much credit for growth as possible⁴.

Our study analyses 4 Indian banks – HDFC, Axis bank, SBI and ICICI bank. We study how these banks managed to balance risk and growth, leveraging enough to grow well, but not so high that any instability/losses cannot be absorbed.

Objectives: To analyze the capital adequacy and the leverage of the banks under study and correlate it with their growth. i. To understand how the Debt to Equity ratio has enhanced the advances and the overall business of banks. ii. To study the relationship between the nature and level of debt in a firm's capital structure and the economic performance of the firm.

The Modigliani Miller idea and its implications: In 1958, Modigliani and Miller came up with an idea that suggested that the level of debt may not necessarily affect firm performance. This is how they went about reasoning their idea.

Consider two firms with equivalent cash flows, such that one has a capital structure that comprises completely of shareholder equity, while the other is a combination of equity and debt. Let us first assume that the firm that is leveraged is worth lesser than the other firm. So when we purchase a percentage of the leveraged firm's debt and equity, we can purchase the same percentage of the unleveraged firm for a lesser price. Since the cash flows in both cases are the same, this leads to an arbitrage possibility, hence leading to an increase in the price of the leveraged firm, and a decrease in the other, until they become equal. The same is true even if the unleveraged firm costs less.

The problem with this idea, was that it assumed that the valuations of companies were completely based on cash flows, which is not true in all cases. Another basic flaw is that the cash flows of leveraged and unleveraged firms need not be the same, as profitability and cash-flow generating ability depend on the capital structure. This is where the analysis of capital structure related ratios in relation with firm performance began⁵.

The performance of any economy is related to the performance of the banking sector, as this is the sector which forms the basis for social, economic and industrial growth of the nation.

Capital Adequacy: Post the financial crisis, there has been an increase in regulation and other steps taken to prevent the collapse of banks and make the Indian economy stronger to withstand slowdowns. Capital structure is also an important factor for determining imports and exports. Rating models based on a system called CAMELS⁶ (Capital adequacy, Asset quality, Management, Earnings, Liquidity, Systems and controls) was implemented to help the RBI identify the banks that needed

help. It is noteworthy, that here, Capital Adequacy was considered to be a top factor..

CAMEL is, basically, a ratio-based model for evaluating the performance of banks. It is a model for ranking/rating of the banks. The prime objective of the model is to measure the performance of banking sector by dividing banks into public and private sectors as explained earlier.

In capital adequacy, the four ratios used for rating are Capital Adequacy ratio, Debt to equity ratio, Assets to advances ratio and ratio of Govt. securities to total investments.

Capital adequacy ratio (car): It is the ratio of Total Capital (equity) to the risk weighted assets.

Debt to Equity: It is the ratio of net debt to shareholder's equity.

Assets to Advances: It is the ratio of the advances to assets of a bank, and is a measure of the aggressiveness of the bank's lending.

Government Securities to total investments: It is a very good measure of the bank's level of risk, since govt. securities are assumed to be the least risky assets one can hold.

Methodology

ICICI, Axis Bank, and HDFC are the three private sector banks under study. These banks have been able to handle the hit due to the recession really well, as seen by the data compiled below. SBI is the only public sector bank we have considered, and we can try to study the data below to try and understand the reasons.

The study analyzes the capital adequacy ratio and the Debt to Equity ratio of these 4 banks in the Indian scenario: ICICI, Axis Bank, HDFC and SBI.

The variables that have been considered as a measure of capital adequacy and structure are Debt to Equity and Capital Adequacy ratio. Earnings per share has been used as a measure of performance, while the interest spread has been used as a measure of the bank's margin.

The study tries to compare the capital adequacy ratios and debt to equity ratios of the banks, and see how the successful banks have managed to survive the recession with the help of their capital structure and reserves.

Results and Discussion

The 4 banks mentioned have been considered, and the various parameters mentioned have been taken into account and observations have been made.

**Table-1
 ICICI**

RATIO	March '12	March '11	March '10	March '09	March '08
CAR	18.52	19.54	19.41	15.53	13.97
Debt to Equity	4.23	4.1	3.91	4.42	5.27
Earnings/Share	56.09	44.73	36.1	33.76	37.37
Interest Spread	4.44	4.01	5.66	3.66	3.61

**Table-2
 Axis Bank**

RATIO	March '12	March '11	March '10	March '09	March '08
CAR	13.66	12.65	15.8	13.69	13.73
Debt to Equity	9.65	9.96	8.81	11.49	9.99
Earnings/Share	102.67	82.54	62.06	50.57	29.94
Interest Spread	3.91	3.73	3.95	4.24	3.77

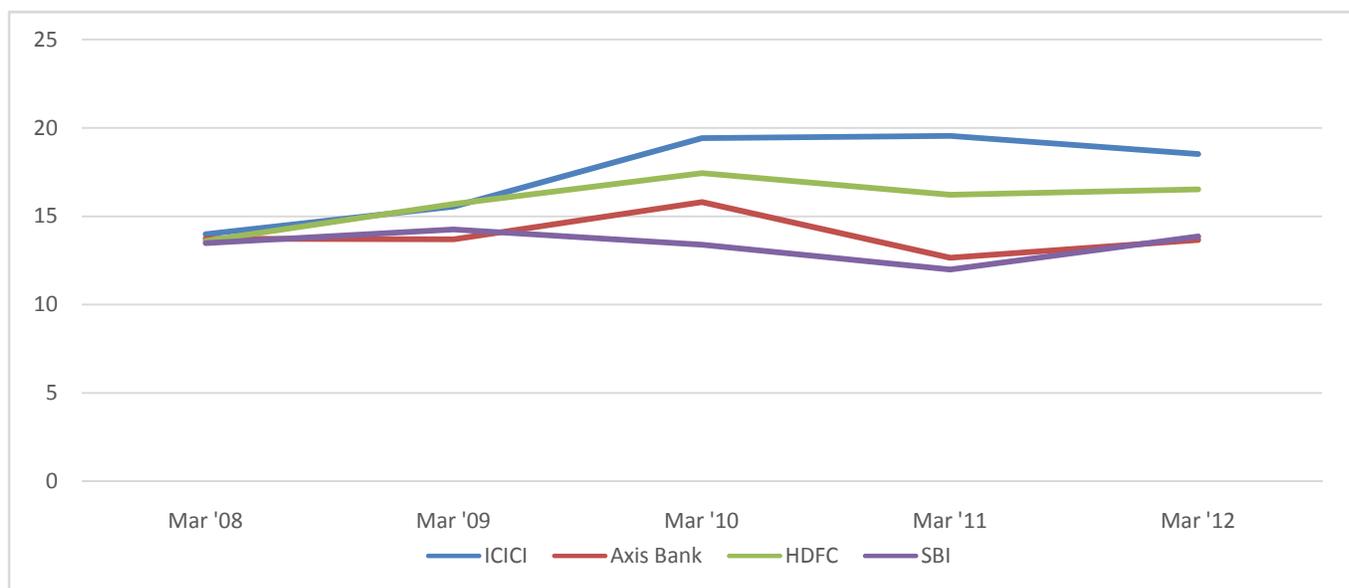
**Table-3
 HDFC Bank**

RATIO	March '12	March '11	March '10	March '09	March '08
CAR	16.52	16.22	17.44	15.69	13.6
Debt to Equity	8.24	8.22	7.78	9.75	8.76
Earnings/Share	22.02	84.4	64.42	52.77	44.87
Interest Spread	5.8	5.95	5.89	6.98	7.08

**Table-4
 SBI**

RATIO	March '12	March '11	March '10	March '09	March '08
CAR	13.86	11.98	13.39	14.25	13.47
Debt to Equity	12.43	14.37	12.19	12.81	10.96
Earnings/Share	174.15	116.07	144.37	143.67	106.56
Interest Spread	5.04	4.12	3.82	4.34	4.32

Data compiled by authors, using information presented in official bank balance-sheets. The data calculated for the banks for the past five years show how these bank's capital structures have helped them fight back and grow in spite of the economic recession.



**Figure-2
 Capital Adequacy Ratio graph**

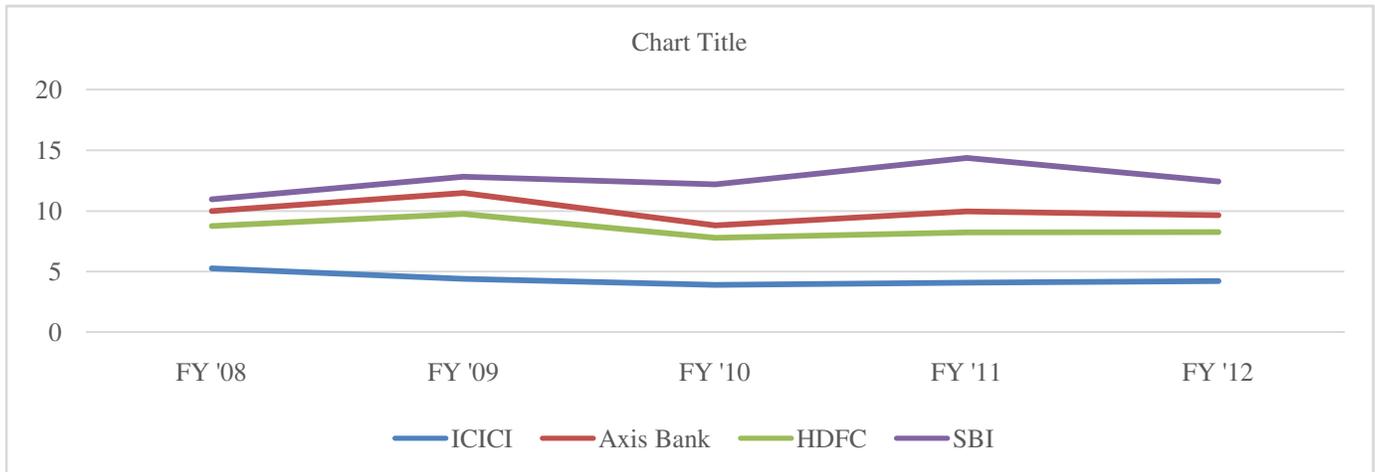


Figure-3(a)
Debt to Equity Ratios

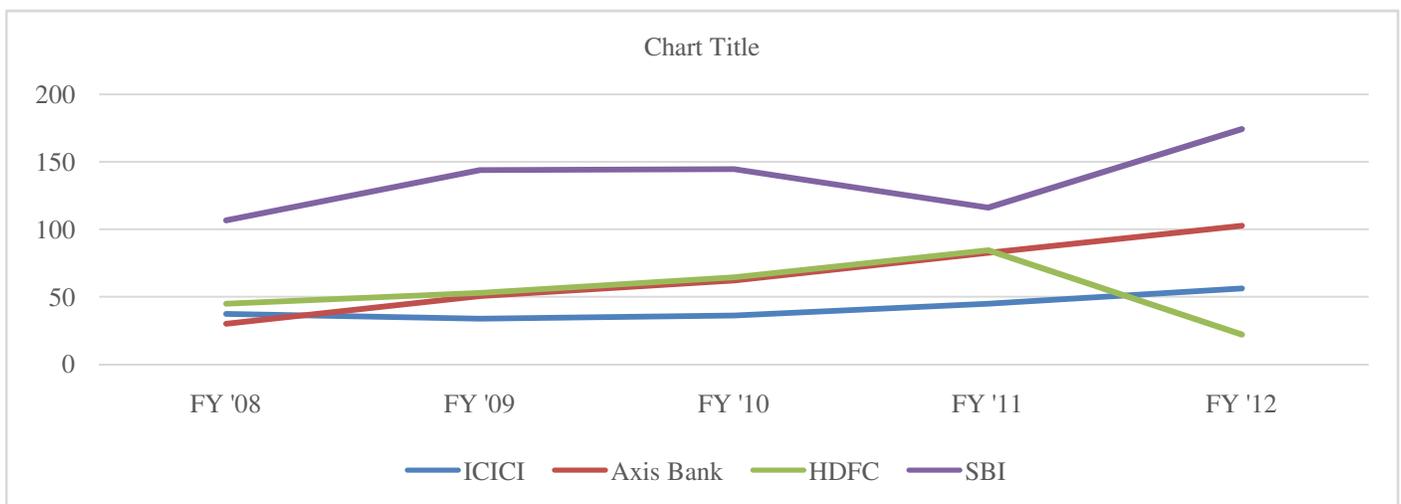


Figure-3(b)
Earnings Per Share Graph

Conclusion

Capital Adequacy: We see that the Capital adequacy of these banks has been between 10 and 20 percent most of the time. A capital adequacy in this range seems to be a safe and optimum bet, neither being so low that there is a problem in case of a recession, and not being so high as to hamper growth. We also see an increasing trend in the capital adequacy moving forward in the years 2008-2012. This can be explained by the regulatory measures taken by the authorities..

Debt to Equity Ratio: We see that there is a wide range of fluctuation in the Debt to equity ratios of the banks. ICICI bank has the lowest debt to equity with a value of around four, while the other private sector banks have kept it at around 8 or 9. SBI has one of the highest debts to equity ratios of around 12, showing that it leverages the most to expand business. In

general, the banking sector as such is known to have a higher Debt to equity ratio than the manufacturing sector companies.

Earnings Per Share: We can see a good correlation between the earnings per share of a bank and its debt to equity ratio. ICICI, with one of the lowest debt to equity ratios, has relatively lower earnings per share as compared to the rest. Axis bank and HDFC have moderately good earnings with a moderate debt to equity ratio. SBI, in contrast has leveraged a lot with a debt to equity ratio of around 12, since they have the support of government reserves. Their earnings per share is correspondingly high.

In general, we see banks with higher Debt to equity able to obtain higher earnings per share. The sudden drop in the earnings per share of HDFC in FY '12 is because of the issuance of bonus shares. The number of shares went up by 4 times.

The Debt to equity ratio must be structured to a particular range, and must not involve the imbalance of too much equity, nor must it leverage the firm's assets so much as to handicap the firm⁷.

When two firms have different prospects, sometimes known to the management but not to the investors, the debt to equity ratio can be used as a good signal to decide an investment. The firm with higher prospects can issue higher debts, because the issue of a higher debt by the other would mean a higher probability of bankruptcy due to debt servicing costs⁸.

Most modern corporations have separation of ownership and control. In this case, the incentive effect of debt is to avoid bankruptcy, since management owns very little equity. The issuance of debt in such cases allows the market to make inferences about a firm's strategies, qualities of its projects, and its performance. Since there is an external funding, the management is exposed to monitoring which is again good for the firm. A firm may, therefore, issue debt to persuade the market that the management will pursue profits, which will generate the necessary cash so as to service the debt, rather than indulge in managerial discretionary behavior.

But sometimes, when the debt is too high and the reserves are too low, the banks become unstable and are unable to cope with slowdowns or non-repayment of loans. Hence, Debt to Equity is a very important factor not just in a general industry, but also in the Banking sector¹⁰.

For institutions in the financial services sector, there is a high debt to equity ratio, depending on the scale of operations and previous year profits of the banks. While this is a good sign, there must be sufficient reserve as per the RBI regulations¹¹.

The maintained capital adequacy ratio should be above 10, but need not be above 20. Out of the top ten banks in the private sector, almost all of them have such range of CAR¹².

Banks must be transparent while submitted data to the RBI for CAMEL or CACS measurements, since this is important to detect any problems that might grow and manifest later.

The financial services sector has faced a lot of blame for the recent economic recession. Actions of greed and irresponsibility by a few individuals were the major reasons for this. There is already a certain level of uncertainty and risk embedded in the stock markets¹³, and there should be no manipulation of any kind by individuals. Since this is the sector that fuels the entire economic engine, it is important that beyond everything, there is a sense of integrity and ethics in everyone who is involved here; otherwise it will be the lower strata of society that are most affected.¹⁴

References

1. Sumit K. Majumdar and Pradeep Chhibber, Capital structure and performance, Evidence from a transition economy on an aspect of corporate governance, *Public Choice* **98**, 287-305 (1999)
2. Susan E. Moyer Capital Adequacy ratio regulations and accounting choices in Commercial Banks, *Journal of Accounting and Economics*, **13(2)**, 123-154 (1990)
3. Pathania Rajni, Linkages between exports, imports and Capital formation, *International Research Journal of Social Sciences*, **2(3)**, 16-19 (2013)
4. Richard H. Pettway, Market Tests of Capital Adequacy of large Commercial Banks, *The Journal of Finance*, **XXXI(3)**, 1976
5. Jurg Blum, Do Capital adequacy requirements reduce risks in banking?, *Journal of Banking and Finance*, **23(5)**, 755-771 (1999)
6. Edward Altman, Anthony Saunders, An analysis and Critique of the BIS proposal on capital adequacy and ratings, **25(1)**, 25-46 (2001)
7. V. Sundararajan, The Debt to Equity ratio of firms and the effectiveness of the interest rate policy: Analysis with a dynamic model of saving, investment, and growth in Korea, *IMF staff Papers*, **34**, 260-310 (1987)
8. Jurg Blum, Martin Hellwig, The Macroeconomic implications of Capital Adequacy for banks, *European Economic Review*, **39(3-4)**, 739-749 (1995)
9. Ehud I Ronn and Avinash Verma, Risk-based capital adequacy standards for a sample of 43 major banks, *Journal of Banking and Finance*, **13(1)** 21-29 (1989)
10. Safdari Mehdi and Ramzan Gholami Avati, Investigating the Asymmetric Effects of Government Spending on Economic Growth, *Research Journal of Recent Sciences*, **1(5)**, 51-58 (2012)
11. Rizvi Syed Kumail Abbas et al, Inflation Targeting as a Plausible Monetary Framework for India, *Research Journal of Recent Sciences*, **1(12)**, 74-78 (2012)
12. Rifaat Ahmed Abdel Karim, The impact of the Basle capital adequacy ratio regulation on the financial and marketing strategies of Islamic banks, *International Journal of Bank Marketing*, **14(7)**, 32-44 (1996)
13. Mirza Nawazish and Saeed Mawal Sara, Time Varying Stock Market Volatility: The Case of an Emerging Market, *Research Journal of Recent Sciences*, **1(11)**, 41-46 (2012)
14. Aggarwal Vijender et al, Micro Finance and Risk Management for Poor in India, *Research Journal of Recent Sciences*, **1(2)**, 104-107 (2012)