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LEHMAN BROTHER'S FAILURE – COULD CAMELS RATING BE USED BY WHISTLEBLOWER?

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ABSTRACT

Financial crisis that sparked out in the year 2008 resulted in the collapse of several banking institutions across the globe particularly in United States of America (USA). Perhaps Lehman Brothers was the first in the series of investment banks collapsing in USA. An analysis of financial statements of Lehman Brothers reveals that its financial credentials were very weak reaching an alarming level indicating failure/sickness. Leverage ratio was as high as 30:1 indicating high level of financial risk. Similarly, net income showed a wide fluctuation from year 2004 to 2007 and even it reported a net loss in the first quarter of 2008. The net loss of \$ 2.80 billion was reported for the first quarter of 2008, in a wide contrast to a net income of \$ 4.2 billion in the year 2007. Both of these indicators were sufficient in signaling fast approaching failure yet the rating agencies could not predict the failure in advance.

The study carried out by the researcher shows that in this kind of situation when financial parameters show a wide fluctuation the use of CAMELS methodology can help

in indicating the failure much in advance of the actual incidence of failure. Different ratios based on CAMELS methodology showed an adverse movement during the year 2006 and 2007 which were sufficient in signaling the failure. The findings suggest that had the rating agencies used CAMELS methodology then a 'WHISTLE' could have been blown before the actual incidence of failure of Lehman Brothers.

Keywords: CAMELS rating system, financial crisis, Rating agencies, Whistleblower, Bankruptcy.

JEL Classification Code: G21, G01, G21, G14, G33

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1. INTRODUCTION

1.1 Banking System

Banking system performs an important role in the country's economy by acting as an intermediary to all the activities – industrial production, agriculture, services, transportation, education, household activities and others. The banking sector has direct as well as indirect contribution to national income of the economy. A well developed and organized banking system can certainly have a positive contribution in the growth of the economy. With the advent of online business, net based business transactions, and technology intervened business activity's role of banking system in discharging business activities has become paramount. A well-developed banking system is necessity for an orderly growth of economy.

As the banking system has greater influence on the performance and growth of the economy therefore there must be a foolproof mechanism to evaluate the performance of banks and banking system. The monitoring of banking system and functioning of banks is essential for orderly growth and development of the economy particularly the industrial sector.

1.2 CAMELS Rating System

The CAMEL rating system is an internal supervisory tool for evaluating the soundness of banks and for identifying those banks which require special supervisory attention or concern. However, it is not the only technique through which a bank's performance can be assessed; banks are also evaluated on other performance evaluation techniques. Every country evaluates

banks according to the ratings undertaken by them and also by the system applicable worldwide. Indian banks have been rated from time to time to assess their performance. Ratings are designed to assess a bank's exposure to risks, appetite for risks, and management of risks; an adverse or inferior rating is an indication that it may run into difficulties and would require support. The public expects banks to anticipate changes, to recognize opportunities, to deal with and manage risks to limit losses, and to create wealth through lending.

An international bank-rating system with which bank supervisory authorities rate institutions according to six factors. The six areas examined are represented by the acronym "CAMELS." The six factors examined are as follows:

(a) Capital Adequacy: Capital adequacy is measured by the ratio of capital to risk-weighted assets (CRAR). A sound capital base strengthens confidence of depositors

(b) Asset Quality: One of the indicators for asset quality is the ratio of non-performing loans to total loans (GNPA). The gross non-performing loans to gross advances ratio is more indicative of the quality of credit decisions made by bankers. Higher GNPA is indicative of poor credit decision-making.

(c) Management: The ratio of non-interest expenditures to total assets (MGNT) can be one of the measures to assess the working of the management. This variable, which includes a variety of expenses, such as payroll, workers compensation and training investment, reflects the management policy stance.

(d) Earnings: It can be measured as the return on asset ratio.

(e) Liquidity: Cash maintained by the banks and balances with central bank, to total asset ratio (LQD) is an indicator of bank's liquidity. In general, banks with a larger volume of liquid assets are perceived safe, since these assets would allow banks to meet unexpected withdrawals. Apart from this a ratio of loan to deposit is also calculated to indicate liquidity. It also indicates the availability of circulating assets held by a bank.

(f) Systems and Control: System of banking practices and mechanism of control being practiced in banks.

Each of the above six parameters are weighted on a scale of 1 to 100 and contains number of sub-parameters with individual weightage in the overall index of performance.

Rating Symbol in CAMELS Rating System

Rating Symbol	Rating symbol indicates
A	Bank is sound in every respect
B	Bank is fundamentally sound but with moderate weaknesses
C	Financial, operational or compliance weaknesses that give cause for supervisory concern.
D	Serious or immoderate finance, operational and managerial weaknesses that could impair future viability
E	Critical financial weaknesses and there is high possibility of failure in the near future.

The system of CAMELS can also be used using five-point Likert's scale bank supervisory authorities assign each bank a score on a scale of 1 (best) to 5 (worst) for each factor. If a bank has an average score less than 2 it is considered to be a high-quality institution while banks with scores greater than 3 are considered to be less-than-satisfactory establishments. The system helps the supervisory authority identify banks that are in need of attention. Banks with ratings of 1 or 2 require very less attention for, supervisory concerns, while banks with ratings of 3, 4, or 5 present moderate to extreme degrees of supervisory concern.

2. REVIEW OF LITERATURE

(i) Kenton Zumwalt¹ : In a study to assess the soundness of banks in Indonesia the researcher studies different parameters of Indonesian banks so as to arrive at the conclusion about the financial soundness of banks. In the study it was concluded that the banks faced systematic risk while operating in the country. The empirical results from the study showed that during Indonesia's stable economic periods four of the five traditional CAMELS components provide insight into the financial soundness of Indonesian banks. However, during Indonesia's crisis period the relationship between financial characteristics and CAMELS rating deteriorate and only one of the traditional CAMELS components – earning discriminated efficiently.

¹ Ketnton Zumwalt, Review of Quantitative Finance and Accounting, Bank Soundness – Camel Ratings – Indonesia, Springer Netherlands, Vol. 19, No. 3 November 2002.

(ii) Peltzman² : In a study on capital adequacy of banks in USA concluded that most of the US'S banks maintain sufficient capital adequacy. However, he further concluded that the fulfillment of sufficient capital adequacy norms was more influenced by the regulatory pressure and not voluntary. In the study it was further concluded that most of the banks managed the capital by inducing fresh capital from time to time so as to maintain sufficient capital adequacy.

(iii) Shacklock H. Arthur, Connors Carmel, Gorta Angela³ : The capacity of public and private sector managers to enhance integrity and control corruption is dependent not just on will, but skills and tools for engaging with workplace realities. This paper presents an initial overview of the empirical integrity and corruption measurement tools (IATs) in use by a selection of Australian organization, both public and private. It discusses tools in terms of their characteristics and methodology. These tools are described by way of an initial attempt at a categorization which needs further development.

(iv) Epictetus and Patalinghug E⁴ :This paper analyzes R & D expenditures in the Philippines and the institutional arrangement for R & D co-ordination between the government and the private sector. The proper role of government in the S & T sector is to foster co-operation between government, academe, and industry; establish competitive science research funding mechanisms; promote the development of S & T manpower, and establish a system to monitor, assess, and forecast technology.

(v) Sumon K. Bhaumik and Piesse Jenifer⁵ : Using bank-level data from India, for six years (1995-96 to 2000-01), researchers examined banks' behavior in the context of emerging credit markets. The results indicate that the credit market behaviour of banks in emerging markets is largely determined by past trends. Researchers also find evidence to support the hypothesis that prudential regulations have a significant impact on the banks' behaviour with respect to credit disbursal. Finally, Researchers find evidence that suggest that credit expansion

² Peltzman Junior: Adequacy of Capital and Risk – An Empirical Study in USA

³ Shacklock H. Arthur, Connors Carmel, Gorta Angela: Exploring the Public – Private Banks: An Initial Comparison of Some Integrity Assessment tools

⁴ Epictetus and Patalinghug E.: An Institutional Analysis of R & D Expenditures in the Public and Private Sectors

⁵ Sumon K. Bhaumik and Piesse Jenifer: A Closer Look at Banks' Behaviour in Emerging Credit Markets: Evidence from the Indian Banking Industry

by banks in emerging markets may be significantly constrained by the inability of the banks to reduce the liquidity risk associated with non-securitized loans.

(vi) Chakrabarti Rajesh ⁶ :The banking industry in India was undergoing a transformation since the beginning of liberalization. Interest rates had declined considerably but there was evidence of under-lending by the banks. The “social” objectives of banking measured in terms of rural credit were, expectedly, taking a back seat. The performance of the banks improved slightly over time with the public sector banks doing the worst among all banks. The banking sector as a whole and particularly the public sector banks still suffered from considerable NPAs, but the situation improved over time. New legal developments like the SARFAESI Act provided new options to banks in their struggle against NPAs. The adoption of Basel-II norms however implied new challenges for Indian banks as well as regulators. Over time, the Indian banking industry became more competitive and less concentrated. The new private sector banks had been the most efficient though the recent collapse of Global Trust bank had raised issues about efficiency and regulatory effectiveness.

(vii) Anand Manoj and Singh Jagandeep⁷ : The study analyzed five mergers in the Indian banking sector to capture the returns to shareholders as a result of the merger announcements using the event study methodology (Brown & Warner, 1980, 1985; and MacKinlay, 1997). These were merger of Times Bank with the HDFC Bank, Bank of Madura with the ICICI Bank, ICICI with the ICICI Bank, Global Trust Bank with the Oriental Bank of Commerce, and Bank of Punjab with the Centurion Bank. The Fama and Miller (1972) market model and Cox and Portes (1998) two-factor model formed the theoretical framework of this study. The aim was to understand the shareholder wealth effects of bank mergers. Using the single-factor model the study found that the average cumulative abnormal return (CAR) of the bidder banks was positive and substantial. These results were statistically significant also. Thus, the bidder banks got significant positive abnormal returns.

⁶ Chakrabarti Rajesh: Banking in India – Reforms and Reorganization.

⁷ Anand Manoj and Singh Jagandeep: Impact of Merger Announcements on Shareholders' Wealth: Evidence from Indian Private Sector Banks, IIM, Lucknow

(viii) Vallabh Gourav and Bhatia Anoop⁸ : This paper explored an empirical approach to the analysis of Non-Performing Assets (NPAs) of public, private, and foreign sector banks in India. The NPAs are considered as an important parameter to judge the performance and financial health of banks. The level of NPAs is one of the drivers of financial stability and growth of the banking sector. This paper aimed to find the fundamental factors which impacted NPAs of banks. A model consisting of two types of factors, viz., macroeconomic factors and bank-specific parameters, was developed and the behaviour of NPAs of the three categories of banks was observed. This model tried to extend the methodology of widely-known Altman model. The empirical analysis assessed how macroeconomic factors and bank-specific parameters affect NPAs of a particular category of banks. The macroeconomic factors of the model included were GDP growth rate and excise duty, and the bank-specific parameters were Credit Deposit Ratio (CDR), loan exposure to priority sector, Capital Adequacy Ratio (CAR), and liquidity risk. The results shown that movement in NPAs over the years could be explained well by the factors considered in the model for the public and private sector banks.

(ix) Singla Harish Kumar⁹ : The study was undertaken to examine and understand how financial management played a crucial role in the growth of banking. It was concerned with examining the profitability position of the selected sixteen banks (BANKEX-based) for a period of five years (2000-01 to 2006-2007). The study revealed that the profitability position was reasonable during the period of study when compared with the previous years. Return on Investment proved that the overall profitability and the position of selected banks were sustained at a moderate rate. With respect to debt equity position, it was evident that the companies were maintaining 1:1 ratio, though at one point of time it was very high. Interest coverage ratio was continuously increasing, which indicated the company's ability to meet the interest obligations. Capital adequacy ratio was constant over a period of time. During the study period, it was observed that the return on net worth had a negative correlation with the debt equity ratio. Interest income to working funds also had a negative association with interest coverage ratio and the Non-Performing Assets (NPA) to net advances was negatively correlated with interest coverage ratio.

⁸ Vallabh Gourav and Bhatia Anoop: Non-Performing Assets of Indian Public, Private and Foreign Sector Banks: An Empirical Assessment. School of Business and Human Resources, XLRI, Jamshedpur

⁹ Singla Harish Kumar: Financial Performance of Banks in India

(x) Gupta S. L. and Jha Brajendra K¹⁰ : Technology played a vital role in the evolution of Indian banking sector through speed creation, accuracy and efficiency of operation, and reduction in the transaction cost. Banking services oriented to "anyhow, anywhere, and any type" banking. This paper aimed at studying awareness, expectation and acceptance levels of the customers with respect to the use and effectiveness of the new technologies in banking sector in India. It also aimed at studying the different technologies used in the Indian banking sector as well as the advantages and disadvantages of the adoption of new technologies and their applications. Technology access, up gradations and innovations in various functional areas of banking were of the highest level in India. One of the fastest growing sectors of the Indian economy, where technology was customer-oriented service, was banking. Over the years, Indian banking moved from a traditional model of customer service to a modern one, where banks could reach the customers at any point with their services. Banks were luring the customers by visiting them. The banking sector was in the process of undergoing revolutionary changes in the way it functions and delivered its services to the customers. Banks were depending more and more on technology and were gradually moving towards an age of high-tech banking.

3. RESEARCH METHODOLOGY

Usually, financial performance of any organization is carried out using convention system of ratio analysis. In the ensuing research paper case of Lehman Brothers' bankruptcy has been analyzed using conventional system of ratios and methodology of CAMELS rating system.

1. Type of Research: Cash Study Approach
2. Data Type: Secondary in nature
3. Data Source: Annul reports of Lehman Brothers
4. Tools for Analysis: Conventional ratio analysis and methodology of CAMELS rating system.
5. Scope of the study: The research has been carried out using financial results of Lehman Brothers for the year 2004 to 2007.

¹⁰ Gupta S. L. and Jha Brajendra K.: Use and Effectiveness of New Technologies in Indian Banking: A Case Study, BITS, Ranchi

6. Limitations: The findings of the research are based on the data as disclosed in the financial statements therefore these are subject to the limitations of these statements. The results have been derived using conventional system of performance evaluation i.e. ratio analysis and CAMELS methodology therefore findings of the research are subject to the limitations of these methodologies.

4. ANALYSIS OF LEHMAN BROTHER'S BANKRUPTCY USING CONVENTIONAL APPROACH

It was September 16, 2008 when 158-year-old investment bank succumbed to the injuries of the global financial crisis i.e. Lehman Brothers, it was the same bank which stood straight and fought against the ill-effects of great depression of 1929-30. After the sale of Bear Sterns to JP Morgan in the month of March 2008, there were only four major investment banks in the U S financial market the Lehman Brothers occupied the fourth place in terms of value of assets. Although at the time of failure of Bear Sterns there were enough evidence to identify the early sickness of Lehman Brothers but it was the cognitive bias of the economists and experts and they failed in identify the problem. It was apparent from the slow growth of assets of Lehman Brother that some undercurrent was passing through.

4.1 Symptoms of Failure

The developments at Lehman Brothers were sufficient to identify the fast-approaching failure well in time, but it why these could not be identified it is beyond the comprehension of the investors. The following symptoms could act as forewarning signals

- Swing in Net Income
- Excessive Leverage and Inadequacy of Capital
- Diversion in Business Activity
- Rising Recurring Expenses
- Rising Size of Level 3 Assets

4.1.1 Swing in Net Income

The net income of Lehman Brothers initially rose very fast and it was the signal of good performance and good times ahead. But in the beginning of the financial year 2008 the decline was so sharp that even it entered into losses in the first quarter itself.

The interpretation from the table 4.1.1 is evident that the sum total of losses of two quarters of 2008 were larger than the net income of the full year 2007. This could have been

identified as soon as bank had declared the results of the first quarter and a corrective action could have been initiated at that time only.

4.1.2 Excessive Leverage and Inadequacy of Capital

Lehman Brothers was very aggressive in adding securities in its portfolio, as it was evident from the facts that it added securities to the tune of \$ 300 bn. from 2004 to 2007 but majority of the securities were backed by the mortgage on real estate or house property. But during this time, it added only \$6 bn. in its equity capital which indicates that it relied heavily on the borrowed capital and capital adequacy was very low. The leverage ratio of bank had risen to 30:1 in the first quarter of 2008.

4.1.3 Diversion in Business Activities

The revenue generation model of Lehman changed very fast previously it had a larger proportion of the income from investment banking but from 2004 to 2007 the proportion of income from investment banking had fallen down to 22% as compared to around 72% previously. Now the majority of the income was generated from trading business. This diversion was very risky in nature and it really proved dangerous resulting into death of the bank.

4.1.4 Rising Recurring Expenses

The recurring expenses of the Lehman Brothers kept on rising mainly on account of heavy pay package to its employees. It paid very high pay to CEO and General Counsel as high as \$ 80 million in a year. This was not noticed when income was rising but it became a nail in the crown when losses were mounting.

4.1.5 Rising Size of Level 3 Assets

In United States assets are classified into three levels, level 1 assets are the one for which the degree of certainty of the underlying collateral is very high and its valuation is possible. Level 2 assets have comparatively less degree of certainty with regards to valuation and realization of value in case of default. Level 3 assets are the one for which a fair valuation is difficult and it is difficult to realize the value at the time of default or crisis. This happens because of improper market for the level 3 assets. In the first quarter of 2008 for Lehman Brothers level 3 assets accounted for 23% of the total financial instruments and these were 146% of the tangible net worth of the bank. Both of these were sufficient to signal the under current of fast approaching failure.

All these factors were sufficient in itself indicating fast approaching sick and death but something went wrong in the identification of these. Obviously, the management of the bank, regulators as well as rating agencies are also the party to it as they could not identify the failure.

5. ANALYSIS OF LEHMAN BROTHER'S BANKRUPTCY USING METHODOLOGY OF CAMELS RATING SYSTEM

Using the financial statements for the year 2004 to 2007 different ratios as applicable in CAMELS methodology were calculated. These ratios were used to develop the index as suggest in CAMELS rating methodology. The findings are as follows

5.1 Analysis of Capital Adequacy Ratio (CAR)

An analysis of capital adequacy ratio of Lehman Brothers reveals that year after year its CAR was declining indicating insufficiency of TIER I and TIER II capital. This indicates an increased level of risk.

An analysis of table 5.1 reveals that year after year CAR of Lehman Brothers were showing an inadequacy of capital signaling high risk against regular and extraordinary risk, making it more vulnerable to bankruptcy.

5.2 Analysis of Asset Ratio

Asset ratio helps in evaluating asset quality of the organization under study. Asset quality ratio is a ratio of net non-performing assets (NPA) to total loan portfolio of the bank. Therefore, a low ratio signals better quality of assets and a high ratio indicates poor quality of assets. For Lehman Brothers this ratio kept on increasing year after year from 2004 to 2007 indicating a larger proportion of NPA in the total loan portfolio of the bank.

An analysis of asset ratio shown in table 5.2 indicates that the proportion of NPS in each rupee of loan portfolio of Lehman Brothers increased from 2004 to 2007, it became 0.064: 1 in 2007 as against 0.025 :1 in the year 2004. This indicates that NPA of the bank reached to an alarming level of 6.40% in the year 2007. The level of rising NPA indicates fast approaching failure.

5.3 Analysis of Management Ratio

Management ratio indicates efficiency of managerial team in managing affairs of the bank. It shows the efficiency with which a bank executes its policies and manages its operations. An analysis of this ratio shows the efficiency of bank in handling risk and exercising control over banks' activities. This is a ratio of operating expenses and total turnover. Usually, a low ratio indicates better efficiency, but sometimes a low ratio can be achieved if turnover i.e. total loan portfolio comprises of bad loans, hence a micro level analysis is to be carried out when this ratio shows a continuous decline.

An analysis of management ratios of Lehman Brothers depicted in table 5.3 reveals that year after year operating expenses of the bank were rising these became almost double in the year 2007 as compared to the level of 2004. This indicates that management was having a large

proportion of operating expenses (expenses other than interest) in managing its operations. The primary reason was the payment of heavy compensation to its employees. In the year operating expense ratio was 30% as compared to 16% in 2007 indicating inefficiency of management in managing its affairs.

5.4 Analysis of Earning Ratio

The prominent earning ratio is ROA (return on assets) An analysis of Lehman Brothers earning ratios reveals that its profits were very low and insufficient to provide a coverage to its operating expenses. Normally in banking industry ROA 2.50% plus is considered better, but in case of Lehman Brothers it kept of receding below this industry benchmark.

An analysis of ROA shown in table 5.4 reveals that ROA never increased above 1% whereas industry parameter is 2.50 % indicating poor profitability of the bank. This could have been used as an early warning signal to predict fast approaching failure of Lehman Brothers.

5.5 Analysis of Liquidity Ratios

This ratio represents ratio of cash maintained by bank in its chest plus balance with RBI to total assets. Higher liquidity ratio indicates safety. The best indicator of liquidity is a ratio of circulating assets to deposits. A higher ratio indicates easy and quick availability of cash reserves to meet the emergency. In case of Lehman Brothers, it was in the range of 0.40 to 0.45 indicating that bank had blocked about 55% to 60% of its deposits in the lending i.e. loan portfolio, indicating poor liquidity position.

The 5.5 table reveals that bank had used about 55% to 60% of its deposits in lending activities. This implied that bank had insufficient liquidity to meet the emergency requirement of funds.

5.6 Analysis of Sensitivity Ratio

An analysis of sensitivity ratio and quality of control exercised by Lehman Brothers reveals that bank was not having an efficient system for risk management. The ratio of sensitive assets to total assets fluctuated widely as it is evident from the facts that it was as high as 50% in 2004 which rose to 56% in 2007. The sensitive assets are the one the value of which fluctuates with the fluctuation in the parameters like interest rate, foreign exchange rate, prices in the stock market and prices of real estate in case of housing loan portfolio. As the loan portfolio of Lehman Brothers comprised high volume of housing loans and foreign currency loans hence this was subject to high degree of fluctuation on account of foreign exchange rate fluctuation and volatility of property prices.

An analysis of the table 5.6 reveals that the loan portfolio of Lehman Brothers comprised of high volume of rate sensitive assets indicating poor risk management practices adopted by the bank.

5.7 Combined Rating Score of Lehman Brothers

The methodology of CAMELS rating aims at assigning a combined (overall) rating score to the bank being analyzed. The combined score is the sum total of rating assigned to each of the ratio as calculated under CAMELS rating system. Each of the ratio is given a score on five-point scale and then score of these six ratios of CAMELS is summed up to indicate overall CAMELS rating score. On the basis of CAMELS ratios following rating was assigned to each of the ratio for the year 2007. Rating score was assigned individually to all the years but year 2007 was one of the crucial years, hence rating score of year 2007 has been presented here.

An analysis of the table 5.7 reveals that Lehman Brothers did not score a rating of less than 2 on any of the ratios of CAMELS rating system. A high score indicates poor performance whereas low score indicates better performance. Asset ratio had a high score of 3.50 out of 5 whereas sensitivity ratio had a score of 2 out of 5. None of the ratios was assigned a score less than 2 therefore the results indicate that bank was not performing well on all the fronts. By using these scores, the rating agencies could have predicted the failure much in advance before the actual incidence of failure.

6. CONCLUSIONS

The financial crisis of 2008 has greatly stirred the economies like USA. Although the incidences of failure of banks could have either been avoided or signaled much earlier than the actual incidence of failure had the rating agencies and regulators used appropriated tools like CAMELS rating system in evaluating performance of banks and financial institutions. The conventional method of ratio analysis can only indicate about efficiency and profit earning capabilities but the methods like CAMELS not only indicate profitability but help in evaluating the overall status of a bank or financial institution. CAMELS method focuses on profitability as well as risk parameters also, it puts stress on quality of assets as well as risk management practices adopted by the bank.

The findings of research study indicate that Lehman Brothers failed on all the constituent ratios of CAMELS indicating not only poor financial performance but rising level of risk if

investment is made in the bank. (Apostolos G. Christopoulos)¹¹ For the year 2007 Lehman Brothers could not score less than 2 on any of the six ratios of CAMELS, hence by looking at these scores rating agencies could have cautioned expected failure of Lehman Brothers before the actual incidence of failure. Thus, it is concluded that CAMELS rating system could have been used by Whistleblower of Lehman Brothers in predicting fast approaching failure of Lehman Brothers failure much before the actual incidence of failure.

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TABLES

4.1.1 - Table Showing Net Income/(Loss) of Lehman Brothers

Year	Net Income /(Loss) (in \$ Billion)
2004	2.40
2005	3.26
2006	4.07
2007	4.20
First Quarter of 2008	(2.80)
Second Quarter of 2008	(3.93)

5.1 - Table Showing CAR (Capital/ Risk weighted assets) of Lehman Brothers

Year	CAR
2004	9.50%
2005	9.10 %
2006	8.69%
2007	6.90%

5.2 - Table Showing Asset Ratio (NPA/Loan Portfolio) of Lehman Brothers

Year	Asset Ratio	NPA (%)
2004	0.025 :1	2.50
2005	0.031 :1	3.10
2006	0.045 :1	4.50
2007	0.064 :1	6.40

5.3 - Table Showing Management Ratio of Lehman Brothers

Year	Management Ratio (Operating Expenses/Total Assets)
2004	0.16
2005	0.19
2006	0.25
2007	0.30

5.4 - Table Showing Earning Ratios of Lehman Brothers

Year	ROE (Net profit/Total Assets)	ROA (Net profit/Own Assets)
2004	0.11	0.005
2005	0.14	0.006
2006	0.18	0.007
2007	0.20	0.006

5.5 - Table Showing Liquidity Ratio of Lehman Brothers

Year	Liquidity Ratio (Circulating assets /Total deposits)
2004	0.40
2005	0.42
2006	0.44
2007	0.45

5.6 - Table Showing Sensitivity Ratio of Lehman Brothers

Year	Sensitivity Ratio (Price sensitive assets /Total assets)
2004	0.50
2005	0.46
2006	0.51
2007	0.56

5.7 - Table Showing Rating of CAMELS Ratios for The Year 2007

CAMELS Ratio	Rating Score
CAR (C)	3.00
Asset ratio (A)	3.50
Management ratio (M)	2.50
Earning ratio (E)	2.50
Sensitivity ratio (S)	2.00

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