# Statistical Report Lehman Brothers

Financial Risk
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## Group nr 8

Linn Hantoft 910406-3749
Henrik Nel Jerkrot 920627-0499

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*The report has been written and analyzed mutually*

*by both group members.*

# Abstract

This report treats the reasons why Lehman Brothers, the fourth largest investment bank in America, filed for the biggest bankruptcy in history the 15th of September in 2008, less than a year after they've had their biggest profit ever. The impacts after the bankruptcy and why the American Government didn't save them is also brought up. The writers have examined the factors that were significant to the bankruptcy and after analyzing the data they discussed what Lehman Brothers did incorrectly and the impact on the financial market after the collapse.

## Table of contest

# 1. Introduction

The 15th of September in 2008 one of the world's biggest investment banks filed for bankruptcy with devastating consequences for the financial market. After a period of imprudent investments and loans the financial market was affected in a devastating way. In this report we will focus on the factors that contributed to Lehman Brothers collapse and what impact it had on the financial market.

At first we explain the purpose of this reading project and then the data is presented. The report then describes the versatile background of Lehman Brothers, a short presentation of their last CEO Richard Fuld and the results we concluded from gathering the facts. Finally the report sums up with a conclusion and discussion and the list of references.

## 1.1 Purpose

Our purpose with the report is to investigate the different factors that in combination caused the bankruptcy of Lehman Brothers the 15th of September in 2008 and the imminent consequences of it.

# 2. Lehman Brothers: A versatile company

For over 150 years, Lehman Brothers has had a big impact on the financial and commercial history of the United States [1]. Lehman Brothers focused on distinguishing the potential of promising industries and help these enterprises to expand by giving financial aid. The history of this firm follows the growth of American industry and the formation of the modern corporation [1].

Henry Lehman emigrated from Germany to Alabama in 1844. He established a grocery store and in 1850 his two brothers, Emanuel and Mayer, joined him and they changed the name into Lehman Brothers. Their policy was that only family members were permitted as partners, this continued until 1920 [1]. Lehman brothers progressed from a general merchandising business to a supplies broker that bought and sold cotton. They opened a New York office in 1858, which gave them a foothold in the financial community and a stronger presence in the supplies trading business. In 1870 Lehman Brothers led the formation of New York Cotton Exchange, it was the first supplies futures trading venture and Mayer Lehman was selected as its first board of directors. The firm evolved to include other goods and helped establish the Coffee Exchange and the Petroleum Exchange [1].

Because of the firm's southern heritage and their northern connections, they were designated to be the Alabama government's financial agent to help sell the state's bond, debts and other obligations in 1867. This was the start to the long tradition in municipal finance for Lehman Brothers. When the railroads developed it resulted in great activity on Wall Street since companies turned to financial markets to get money for expansion. Lehman Brothers expanded again to include sales and trading of securities. It became a member on New York Stock Exchange in 1887 and was now a merchant banking firm [1].

In the 1930s, Lehman Brothers helped fund business in the motion picture industry such as Paramount Pictures and 20th Century Fox. They were involved in the growth of communications industry, financing the first public televised company and the Radio Corporation of America. Lehman Brothers funded business in the oil and gas exploration industry [1]. During the Depression Lehman Brothers was one of the first firms to invent a new method of financing, called the private placement. It was a loan between first-rate borrowers and private lenders, allowing borrowers to increase capital and lenders to obtain an appropriate return with an acceptable level of risk. This is something we still use today but was innovative at the time [1].

In the 1950s Lehman Brothers invested in electronic and computer technology and in the 1960s the firm expanded their commercial paper. In 1970s they opened offices in Europe and Asia and in 1977 they merged with the investment bank Kuhn, Loeb & Co. The firm continued to expand and in the 1980s Lehman Brothers acted as an advisor on several U.S. and cross-border transactions, including Chrysler/American Motors and General foods/Philips [1].

### 2.1 The Gorilla Chairman

Richard "Dick" Severin Fuld Jr was born in April 26, 1946. He was the final Chairman and CEO of Lehman Brothers. On Wall Street he had the nickname "Gorilla" because of his competitiveness. In 1969 he began his career with Lehman Brothers. He started out as a commercial paper trader and advanced in a rapid pace. He operated as CEO from 1994 until the firms collapse in 2008 and he played a major role in expanding the company and making it one of the biggest companies on Wall Street [2].

## 3. The beginning of the end

The many causes for the Lehman Brothers bankruptcy are hard to describe. However it is possible to narrow it down into two major factors that together give an accurate insight.

- Lehman Brothers risky trading with CDO: s (Collateralized Debt Obligations).
- The other large investment banks summoned by Henry Paulson failed to reach an agreement in how to save Lehman Brothers.

Dominating the American financial industry in the mid 2000 were the investment banking companies Goldman Sachs, Morgan Stanley, Lehman Brothers, Merrill Lynch and Bear Stearns, two financial conglomerates, Citigroup and JP Morgan, three insurance companies containing of AIG, MBIA and AMBAC. Also the three rating agencies Moody's, Standard & Poor's and Fitch played a part in the industry [5]. The interaction they all had with each other and the homebuyers is described below.

Home buyers → Lenders → Investment Banks → Investors [12]

Before the time of investment banking the interaction between a loaner and a lender could be described as that the loaner asked the lender for financial aid. The loaner required financial security to ensure the lender into lending the requested money. Without any securitization he/she/it would endanger the possibility of retaining future mortgages. Due to this system, the lenders made sure of the loaners financial ability to repay.

## 3.1 A recipe for disaster

Since the market has changed with investment banks and financial conglomerates playing a bigger part, the old system has vanished and been replaced. Compared to the old system, the new system allowed the lenders to sell the homebuyers/loaners debt to investment banks, making the loaner pay the home mortgage directly to them. The investment banks then gathered several of these mortgages together with other debts, such as car loans, student loans, and credit card loans. The investment banks then sold the bundle of debts as a complex derivative called CDO: s (Collateralized Debt Obligations) to the investors. This meant that the home buyers paid their mortgages directly to the investors and not to the original lender itself. The investment banks also paid the rating agencies to divide the CDO: s into different ratings, often the CDO: s received a triple A rating which is the highest rating possible. The triple A rating is a indication that the CDO is of good security. A higher grade made the CDO: s more attractive to the investors [5]. The most common mathematical formula used was David Li's formula Gaussian Copula which made the trading of CDO: s possible [13]. Due to the fact that Li's formula made a positive impact on the financial markets its risks were widely ignored. With both investment banks and credit institutes foolishly trusting Li, this formula would however turn out to be a recipe for disaster on Wall Street.

Together this caused a vicious circle which was doomed to fail. Since the investment banks bought all the debt from the lenders, the lenders had no cause to worry about the home buyers' ability to repay. Evidently the lenders decided to loan money to home owners with less and less security until they actually did so without any financial security at all. The investment banks didn't care either because the higher the interest rates the more money they earned. Those particular loans with a high credit risk and high interest rates were called Sub-prime loans. The only reason for this system to work was if the house prices kept inclining each year, something that is clearly impossible. The political influence regarding this matter also played a major part. Both the Clinton and Bush administration encouraged the American citizens, both wealthy and poor to home ownership. In 2003 Bush declared "Our government is supporting home ownership because it's good for America, it is good for our families and it's good for our economy" [7]. Not surprisingly the number of loans increased and during a ten year period, the sub-prime loans went from 30 million dollars a year to over 600 million, jeopardizing a house bubble [5]. This also resulted in an incline of house prices [14].

## 3.2 Increased leverage

Often to maximize the investment banks profits, many of them borrowed money which allowed them to invest more in CDO: s. Before 2004 there was however certain regulations stopping the banks from getting to much leverage, as a precaution for what could happen if the country went in a recession. The allowed ratio was 12 to 1. In 2004, the allowed leverage was sharply increased making it possible for the investment banks to higher their leverage. This meant that they could earn bigger profits. The downside of this is stated above; if the country went into a recession the fall would be much bigger for the banks than with the previous regulations. Compared to their four major competitors, Goldman Sachs, Morgan Stanley, Merrill Lynch and Bear Stearns, Lehman Brothers had a much higher leverage level. For every dollar Lehman Brothers earned their leverage was over 30 dollars [4]. The other companies had mid-twenties. Supposedly it was a part of Lehman strategic plan to be more aggressive compared to their competitors in order to conquer market shares. Lehman Brothers had invested in CDO: s with their borrowed money and due to the fact that they lost all value in 2008, it's not hard to understand why Lehman Brothers went bankrupt. This is the main reason why Lehman Brothers and not the other banks was the first investment bank to collapse. Lehman Brothers total assets were estimated to 691 billion US-dollars. 668.5 billion of which were liabilities, meaning that with a leverage ratio of 30 to 1, only 22.5 of those 691 billion were the shareholders equity. After performing continuous record-breaking results each year, the company lost almost 5 billion dollars during the worst six months, making their previous profits relatively insignificant [9].

### 3.3 Credit Default Swaps, earning money on losses

At the same time the financial conglomerate the American Investment Group, AIG, offered their customers a service called Credit Default Swaps. This service meant that both investors and speculators could bet against the CDO: s, actually making money when the CDO: s lost value. Effectively it was possible for the investment banks to create riskier CDO: s where the risk of a default was high and then insures them against that specific CDO. During the economy peak AIG made a lot of profit with this derivate since most CDO: s generated winnings.  However during the financial collapse when most CDO:s became worthless, AIG had to pay massive amounts of money to the investors and speculators betting against the CDO:s. AIG were in so much trouble the American government had to bail them out, something they didn't do with Lehman Brothers [5].

### 3.4 On the brink of bankruptcy

During the weekend of 12-14 September 2008 The Secretary of Treasury, Henry Paulson, summoned the CEO: s of Citigroup, Morgan Stanley, JP Morgan, Goldman Sachs and Merrill Lynch into a meeting to resolve the Lehman Brothers issue. Richard Fuld, CEO of Lehman Brothers was not invited to participate in the meeting. Henry Paulson declared that the government wouldn't bail out Lehman Brothers and that the other companies would have to come up with a solution [4].

There were two potential buyers ready to acquire Lehman. Bank of America and the British bank Barclays. For Lehman Brothers, Bank of America was their preferred buyer because of their investment division that Barclays lacked, however when Bank of America investigated the accounts of Lehman Brothers they aborted. Merrill Lynch was also on the brink of collapse and Bank of America chose to attain them ahead of Lehman Brothers. This meant that the only prospector left was Barclays. There were issues with the British government that had to be sorted out between Barclays and Lehman Brothers. If the deal were to go through the British needed confirmation from Henry Paulson that there would be guaranteed financial support from the Americans, something that couldn't be promised. Chief Executive John Varley of Barclays stated "We were quite prescriptive about what was going to work and what wasn't and what we wanted wasn't available so we walked, end of story".  Barclays walked out of the deal letting Richard Fuld and the rest of Lehman Brothers to their destiny [4].

Lehman Brothers was out of options, on Sunday afternoon they summoned bankruptcy lawyers to their headquarters in New York. The following morning the world's largest bankruptcy became official, Lehman Brothers had $639 billion in assets at that time [10].

# 4. Analyse & Discussion

In the next part we will analyse the impact on the financial market and discuss the reasons why Lehman Brothers collapsed.

## 4.1 Impact on the financial markets

Due to the fact that the collapse of Lehman Brothers marked the start of the global financial recession there have been some regulation changes to provide a risk reduction of something similar happening again. Among some of the changes, the regulation concerning the leverage ratio has been tightened, meaning that the banks can no longer invest the enormous amount of lent money into risky investments, which they did previously. The major global initiative is however the Basel III which will regulate the financial markets into improving both their risk management and strengthen their transparency and disclosures among other things [11].

We believe that Basel III is necessary for the financial world as a whole to bring some stability in periods that are unstable. It would also decrease the risk of another global crisis in that extent as the one we are currently in. However only the future will tell if these regulations are enough to provide the financial sectors the stability it desperately needs. Furthermore we believe that the public and the financial market nowadays are more cautious and even though the financial market has tried to be restrained by Basel I and Basel II, we feel that the public has gained knowledge about the risk in the financial sector compared to before the financial crises in 2008.

## 4.2 Discussion about the reasons for the collapse

The reason why Lehman Brothers filed for bankruptcy the 15$^{th}$ of September in 2008 was mainly because of two major factors; the risky trading with CDO: s and that the large investment banks together with Henry Paulson didn't reach a solution for how to save Lehman Brothers.

With the unreasonable trust to David Li's formula among others, more and more risk for defaults were added together which eventually caused the whole system to collapse. The fact that the American government eased the regulations concerning the maximum leverage in 2004 didn't exactly minimize the risk for a financial collapse. The enormous sum of capital eventually led to the fact that a certain number of banks and conglomerates became immune to bankruptcy, they were too big to fail. The American government would bail them out due to the fact that the markets wouldn't recover for a long time. Bear Stearns were the first bank to be bailed out and AIG became the next. Speculations have been raised in why Lehman was the bank to be sacrificed and why none of the other. Bernanke and Paulson claimed that they had no legal authority to do it. The question then raised is how Bear Stearns could be bailed out. Why couldn't they do it the same way with Lehman Brothers? One possible theory is that the government set Lehman as an example of what could happen to the banks if they didn't invest their money wisely. If the government indeed did bail both Lehman and Bear Stearns it would be hard to do otherwise with a third company. It is also possible the government felt certain mistrust with Lehman and how they handled their liabilities.

There is also a conflict of interest regarding the credit institutes grading the different CDO: s. The investment banks pay the credit institutes to grade their CDO: s. Therefore there is a subtle understanding that the CDO: s should receive a high rating. If the credit institutes marked some CDO: s as low it wouldn't be too difficult for the investment bank to change rating institute to one with a more liberal view and give the CDO: s a more satisfying grade. Another contributing factor is the financial insurance Credit Default Swaps which encouraged the investment banks to develop riskier CDO: s. This had an impact on the financial markets as well.

The main reason however is still the banks urge to earn quick money in a market without considering the consequences. It's not hard to imagine that the skeptics raising fingers on Wall Street were not popular in the expanding market. Lehman Brothers aggressive strategy was a success, however it became unsustainable to have the enormous liabilities they had and in the end Richard Fuld transformed from a fearsome gorilla into a mere monkey.

## 5. Recommended extra reading

For readers interested in learning more about general knowledge about the financial crisis, we highly suggest two documentaries. Inside Job from 2010 [5] describes the financial bubble in a very accurate way, both the pre- and after stages of the crisis. We also recommend "The fall of Lehman Brothers" [4] which gives an insight of the last weekend before the bankruptcy was declared, what happened and also speculation about why Lehman were the first investment bank to fall. If you're interested in more history about Lehman Brothers and their contribution in developing the industry of America, visit the library for Harvard Business School [1].

Some interesting thoughts about why the government let Lehman Brothers collapse you can find on PBS newshours website [7]. For more insight about David X. Li's formula Gaussian Copula view website wired [6]. And finally if you want to read more about George W. Bush's statements take a look at our reference [8].

## 6. List of references


[1] http://www.library.hbs.edu/hc/lehman/history.html

[2] http://topics.nytimes.com/top/reference/timestopics/people/f/richard_s_fuld_jr/index.html

[3] http://www.youtube.com/watch?v=RLWIPyQXcRE
Movie "The Last Days of Lehman Brothers"

[4] Part 1: http://www.youtube.com/watch?v=aPOtQkSiCk8
Then continue to click until the last part, Part 6.
Documentary "Fall of Lehman Brothers"

[5] Documentary on DVD "Inside Job"

[6] http://www.wired.com/techbiz/it/magazine/17-03/wp_quant?currentPage=all

[7] http://www.pbs.org/newshour/bb/business/july-dec10/lehman2_09-13.html

[8] http://georgewbush-whitehouse.archives.gov/news/releases/2003/12/20031216-9.html

[9] Lehman Brothers (2008), Lehman Brothers 2007 Annual Report

[10] Lehman Brothers First Quarter Report, 2008

[11] http://www.bis.org/bcbs/basel3.htm


## 7. Appendix

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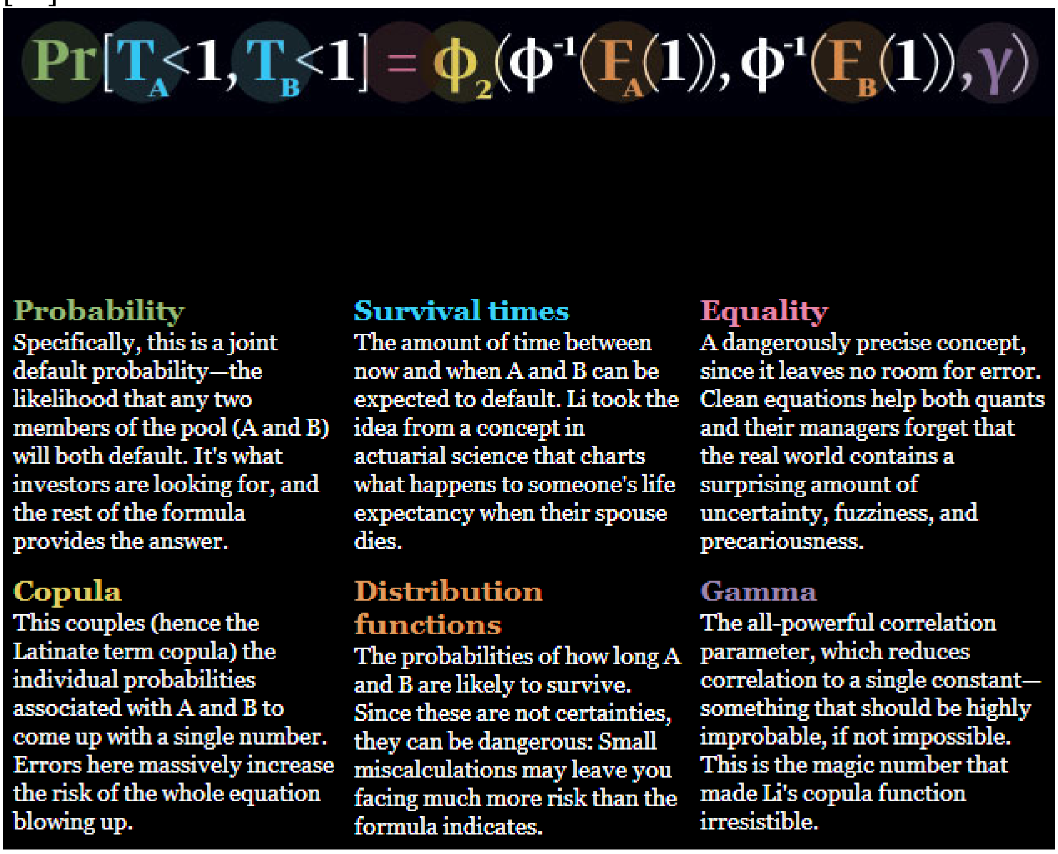

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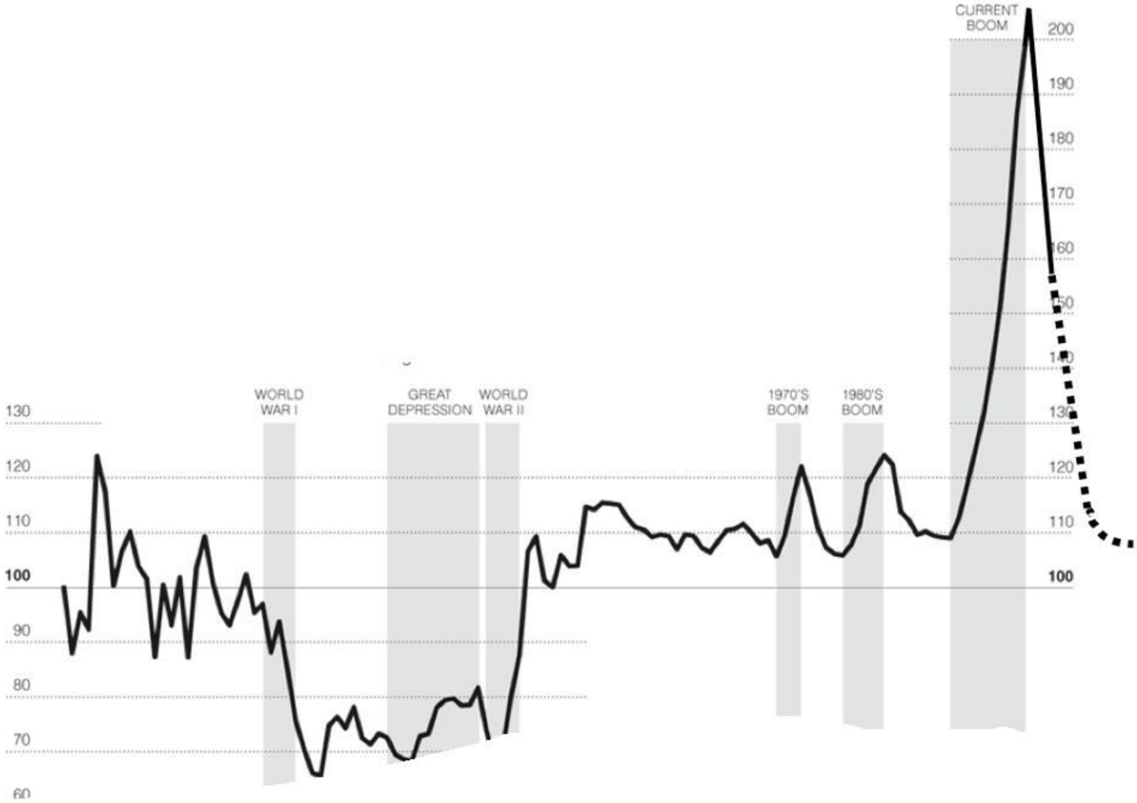
CURRENT BOOM
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WORLD WAR I
GREAT DEPRESSION
WORLD WAR II
1970'S BOOM
1980'S BOOM