Christian A. Conrad

# Morality and Economic Crisis

## Enron, Subprime & Co.

disserta
Verlag

Christian A. Conrad

# Morality and Economic Crisis

## Enron, Subprime & Co.

disserta
Verlag

**Conrad, Christian A.: Morality and Economic Crisis – Enron, Subprime & Co., Hamburg, disserta Verlag, 2010**

ISBN: 978-3-942109-21-5
Herstellung: disserta Verlag, Hamburg, 2010

**Bibliografische Information der Deutschen Nationalbibliothek**
Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.d-nb.de abrufbar.

Dieses eBook ist auch in einer deutschsprachigen Fassung erhältlich:
Moral und Wirtschaftskrisen – Enron, Subprime & Co., ISBN 978-3-942109-19-2, Hamburg, disserta Verlag

Dieses Werk ist urheberrechtlich geschützt. Die dadurch begründeten Rechte, insbesondere die der Übersetzung, des Nachdrucks, des Vortrags, der Entnahme von Abbildungen und Tabellen, der Funksendung, der Mikroverfilmung oder der Vervielfältigung auf anderen Wegen und der Speicherung in Datenverarbeitungsanlagen, bleiben, auch bei nur auszugsweiser Verwertung, vorbehalten. Eine Vervielfältigung dieses Werkes oder von Teilen dieses Werkes ist auch im Einzelfall nur in den Grenzen der gesetzlichen Bestimmungen des Urheberrechtsgesetzes der Bundesrepublik Deutschland in der jeweils geltenden Fassung zulässig. Sie ist grundsätzlich vergütungspflichtig. Zuwiderhandlungen unterliegen den Strafbestimmungen des Urheberrechtes.

Die Wiedergabe von Gebrauchsnamen, Handelsnamen, Warenbezeichnungen usw. in diesem Werk berechtigt auch ohne besondere Kennzeichnung nicht zu der Annahme, dass solche Namen im Sinne der Warenzeichen- und Markenschutz-Gesetzgebung als frei zu betrachten wären und daher von jedermann benutzt werden dürften.

Die Informationen in diesem Werk wurden mit Sorgfalt erarbeitet. Dennoch können Fehler nicht vollständig ausgeschlossen werden und der Verlag, die Autoren oder Übersetzer übernehmen keine juristische Verantwortung oder irgendeine Haftung für evtl. verbliebene fehlerhafte Angaben und deren Folgen.

© disserta Verlag, ein Imprint der Diplomica Verlag GmbH
http://www.disserta-verlag.de, Hamburg 2010
Hergestellt in Deutschland

# Contents

**0. Introduction ........ 7**

**1. Enron, Subprime & Co. – from crisis to crisis ........ 9**

1.1. Enron, Worldcom and Co. ........ 9

The consequences of Enron, Worldcom & Co. ........ 12

1.2. The Subprime crisis ........ 12

The causes of the crisis ........ 22

**2. Weaknesses of corporate control and guidance ........ 27**

2.1. From entrepreneur to manager in a capitalist society ........ 27

2.2. Watch who you trust: The Principal-Agent Issue ........ 29

2.3. Stock Options or bonus payments a Helpful Instrument of Control or a Tool for Self-enrichment? ........ 31

2.4. Manager's salary: What is appropriate? ........ 36

2.5. Lack of controls on company management ........ 40

2.6. Rating agencies, stock analysts and auditors: the overestimated capital market watchdogs ........ 43

2.7. The shareholder value concept: as alluring as it is dangerous ........ 47

Calamitous clarity ........ 48

The importance of equity capital costs ........ 49

Short-term focus of company policy ........ 51

One-sided maximization of shareholder value ........ 53

2.8. Exaggerated belief in figures ........ 56

2.9. An extreme free-market orthodoxy ........ 64

2.10. The Problem of Ethics ........ 67

Missing training of values ........ 71

Is there a loss of moral values in industrial countries? ........ 72

**3. Morality and economy – is it a crisis of capitalism? ........ 79**

3.1. The Russian transformation to an unethical market economy with an insufficient economic order ........ 79

3.2. How does the market economy system work? ........ 84

3.3. Market and morality – a contradiction? ..... 88
Moral goals and market economy: Economic ethics ..... 88
Moral property ..... 90
Misunderstood egotism ..... 92
Social goals and market economy ..... 94
Decisions at the cost of third persons ..... 98
3.4. Profit maximization and shareholder value as social goal? ..... 99
3.5. Moral values and their importance in a market economy and society ..... 101
Trust ..... 101
Moral behavior must be worth the effort ..... 105
Do companies have a social responsibility? ..... 108
3.6. Economy and freedom ..... 110
3.7. Missing value drivers: the underestimated soft facts ..... 113
3.8. The image of humans ..... 121
Human intelligence ..... 121
Homo Economicus ..... 125
**4. Reformstrategies ..... 129**
4.1. Cultural factors in economics ..... 129
4.2. How employees and society can improve: Economical and Society Culture Approach ..... 131
Reliability ..... 133
Loyalty ..... 133
Teamwork capability ..... 134
Willingness to perform ..... 135
Integrity ..... 136
System acceptance ..... 136
4.3. The management approach for qualitative leadership ..... 139
**Literature ..... 151**

# 0. Introduction

The first serious debate as to the infallibility of the capitalistic economic system arose in 2000 within the framework of the Enron crisis. By 2007, it was obvious that the world economy was in a fundamental crisis with the emergence of the subprime crisis. The subprime crisis was the epitome of the ethical failure of our modern economy. Everything came together and many saw in the crisis the final act of "turbo capitalism", the limitless enrichment of the few at the expense of society, which almost lead to a total collapse of the financial system. The lack of regulation and belief in the self-correcting power of the market was used by a few to take advantage of the situation. Considered historically, financial crises have increased significantly in recent years. This is not the result of simple coincidence, but rather much more an indication of a massive weakness in the present economic system. The market economy has always placed the individual at the forefront for the economic creation of value, which provided him with an ever-growing range of opportunity. Through the pursuit of individual interests, it was believed that this motivation would also create the most beneficial results for society and the greater good. This appears to not be the case. The absence of rules and the belief in the self-healing forces of the markets were exploited by individual to their advantage.

Several books were written about the Enron scandal and its ethical dimension but there was no book that analyses the underlying reasons. The scandals seem to repeat and repeat and no lessons have been learned nothing fundamental changed. Only the name of the crisis company changes to Citigroup, AIG etc.. Now we had with the subprime crisis a real historical crisis which should be the largest financial and world economic crisis since 1929. The book presented here seeks to clarify the reasons for this development. The point of departure for this book is the business crises and collapses that have shaken the global economy in the past few years. Starting with examples as the Enron bankruptcy and the subprime crisis in 2007, we search for explanations for the crises.

Several possible causes are examined and various questions from recent discussions of ethics on topics such as manager pay increases are answered. After discovering several weaknesses in the economic system and inappropriate behavioral stimuli we find two main causes for them: the neglect of measurable and non-calculable qualitative factors (also called soft facts) and an extreme greed in managers at the cost of their companies. A lack of ethics or moral behavior lead us to question the meaning of morality for the economy, and thus for society. This issue is examined not only from the view of individual companies, but also from national economic and general social context using the example of Russia. We found a very large influence from moral values and general qualitative factors of influence, which have not been considered up to now. The knowledge gained will be applied to develop a management approach to qualita-

tive leadership, which includes qualitative factors previously ignored, and brings human productive forces into the picture by including active employees as people in the business process.

# 1. Enron, Subprime & Co. – from crisis to crisis

## 1.1. Enron, Worldcom and Co.

At the beginning of the 21st century the global economy was shaken by a series of company crises in the USA. In order to improve their share prices, many companies in the USA had manipulated their records and touched up their numbers. In 2000 alone, 233 companies had to correct their accounts after coming under pressure from the SEC (Securities Exchange Commission), which incurred a corresponding drop in the share prices. For example, the second largest American telecommunications company, Worldcom, had manipulated its accounts by $7.15 billion, and the well-known copier manufacturer Xerox had falsely claimed billions in profits for 1998 and 1999, as well as pre-tax profits for 2000 that were $845 million too high. The most flagrant case was the model company Enron. The seventh largest US company was the darling of the stock analysts and the economic press for years. The press named Enron as the most innovative and admired American company and selected its board as one of the five best in 2000. Enron had increasing profits every quarter for five years in a row. Its profits were originally derived from gas pipelines, but it then developed into an innovative trade company. Enron dealt in everything in and around energy, especially with derivatives such as futures on weather development. From the CEO Jeff Skilling (as of 2001), who had a Harvard degree and came from the famous consulting firm Mc Kinsey, to the renown auditing firm Arthur Andersen, Enron had the reputation of representing the best that America's economic elite had to offer. Coming straight from Mc Kinsey, Skilling[1] in particular determined the strategic direction and the company culture at Enron. He wanted to get the very most he possibly could out of his employees. He demanded the highest level of commitment and quality in order to live up to the company slogan "The world's leading company." He implemented special incentive mechanisms, and traders were paid according to their success based on their contract volume. That wasn't enough, however. True to the Mc Kinsey motto of "Up or out," he organized employee rankings in which the bottom 20% would most likely be dismissed. In accordance with the "survival of the fittest" principle, he was always assured that his employees were performing to the top of their abilities. This incentive system was coupled with a strict hierarchical subordination; "If you didn't act like a light bulb came on pretty quick, Skilling would dismiss you" (a portfolio manager quoted in Fortune)[2]. The CEO of

---

[1] Skillings was and is considered very intelligent, but arrogant as well. Just like Lay, he was charged with fraud, money laundering and conspiracy. The accusations proved difficult to prove however, since Skillings had given all instructions verbally. See Handelsblatt dated January 27/28/29 2006, p. 15.

[2] Mclean, Bethany (2001).

Lehman is said to have had a similar style of leadership. His employees were to afraid to report their losses. And employees like Mike Gelband, Manager of the real estate department was made redundant because he warned about the rising risks of Lehmans real estate investments.[3]

How did the employees react? They did everything they could to make Skilling happy. The volumes of trade contracts were inflated. Supervisors were not notified of mistakes. No mistakes were allowed… at Enron. Apparently employees worked constantly and perfectly. As a whole there was an atmosphere of fear and mistrust and mutual cheating. The traders were afraid to use the restroom, because they feared that their colleagues could get information from their computer about positions that had come in, in order to bet on the market and thus devalue their positions. In the end the employees neither made Skilling happy, nor did they give him the productivity he wanted. He didn't reach them. His system of hardness and fear created the opposite of what he wanted. The productive forces of the employees were not directed in such a way that they achieved the company goals, which is why Enron was not able to be the "World's leading company."

In the end everything was exposed. Enron had claimed around $1 billion in nonexistent profits and the renowned auditor Arthur Andersen certified the manipulated balances, which not only spelled the end for both firms, but also shook the entire finance branch. How could something like that happen? How could the famous rating agencies, banks, investment banks and stock analysts all be mistaken? More precisely, why did no one notice anything? We will address this question later. First we must be aware that the balance sheets were faked, which made it very difficult for the finance market institutes to discover what Enron was up to.

The honor of having uncovered the deceptions belongs to two short-sellers named Jim Chanos and Doug Millet[4], who worked for the as yet relatively unknown company Kynikos Associates. They did not have any more information that other market participants, but they were apparently more attentive, because a lucrative short-selling business was in the air at Enron, thus the sale of borrowed Enron stocks, which creates profit from the return of stocks bought at a lower price. They pointed out that Enron's operating margin of 5% in 2000 had fallen to below 2% at the beginning of 2001, and that they still couldn't figure out how Enron really earned all its money. The cash flow seemed to have

[3] See Der Spiegel 11/2009, S. 43f.

[4] This is another example to show that not all information is included in the market prices, otherwise long term there would be no short sellers, or speculators. The majority of market participants can be mistake, they are only human. The market can be outperformed through better information and analyses.

no relation to the profits recorded, being much too low. It also seemed amazing that Skilling was selling his stock at a price of $80, while he maintained publicly that they were actually worth $126. Skilling's predecessor as CEO, Kenneth Lay, also sold $70 million worth of Enron stocks in 2001, while he was busy recommending Enron employees to buy Enron stocks as a secure investment. Enron was unable to refute the accusations in public. When the stock value landed at $40, Skilling left the company and Lay became CEO again. Lay also refuted the rumors about Enron's problems, saying there were neither "accounting" nor "trading issues," nor "reserve issues." Finally Enron registered a loss of $618 million on October 16, 2001, and wrote off $1.6 billion of assets. Lay still insisted on October 23 that Enron's business was doing well. The downgrade of the invest grade from S&P caused them to declare bankruptcy, due to the repayment requirement for outsourced debts of $4 billion in the related party company.

Chanos had pointed to the related party issue as well. Enron had not consolidated its debts in the balance sheets, rather it shoveled them onto the company managed by Enron employees and booked paper profit. Only a few people knew there was a fallback clause for the credit in case Enron's rating should fall under the investment grade. The bankruptcy assets destroyed were valued at around $65 billion (maximum market value), which is somewhere around the gross domestic product of Libya or Syria, just to have an idea. In addition, there were damages from the failure of Enron as the contracting party for derivatives, which had also functioned as a security mechanism against risks for other companies.[5] From 1989 to 2001 Lay had sold Enron stocks for $300 million, mostly in stock options.[6]

In order to try and limit the loss of trust, the Business Round Table, a coalition of the CEOs from the 500 largest American stock companies wrote the following in February, 2002:

> "The United States has the best corporate governance, financial reporting, and securities market systems in the world. These systems work because of the adoption of the best practices by public companies with a framework of laws and regulations. The collapse of the Enron Corporation is a profound and troubling exception to the overall record of success."[7]

Unfortunately Enron was not an isolated case. The next large failure was Worldcom due to manipulated balance sheets. Many similar cases followed, and not just in the USA.

---

[5] See Mclean, Bethany (2001), p. 53-58; Collin, Denis (2006), Fox, Loren (2006) and Markham, Jerry W. (2006).

[6] See "Enron," http://en.wikipedia.org/wiki/Kenneth_Lay dated October 8, 2006.

[7] See Schwarz, Gunter Christian/Holland, Björn (2002), p. 1662.

**The consequences of Enron, Worldcom & Co.**

Enron heads Jeff Skilling and Keneth Lay, as well as the head of Worldcom Bernie Ebbers, received prison sentences of several years for balance sheet tampering. In light of the numerous fraud scandals, the US government tightened reporting obligations and prison sentences for fraud with the Sarbane-Oxley Law. Alone Citygroup and J P Morgan Chase paid out around $9 billion in damage compensation to the victims of the Enron and Worldcom fraud. They accepted the compensation to avoid a lawsuit in which the plaintiffs could have accused them of complicity in balance sheet tampering. In addition, two managers of the US investment firm Merill Lynch were sentenced to several years in jail for complicity in Enron's fraud. They had signed a contract with Enron that served to cover up Enron's financial situation.[8]

The auditor Arthur Anderson was accused of improper accounting for the companies Sunbeam Products, Waste Management, Asia Pulp and Paper, the Baptist Foundation of Arizona and Enron. In 2002 Arthur Andersen was convicted of obstructing justice and lost their auditing license. Andersen employees had destroyed many Enron records that would have served as evidence. Arthur Andersen was then liquidated and left behind more than 100 civil claims and lawsuits.[9]

All in all the opportunity to improve the economic system out of the Enron, Worldcom & Co. scandals was missed, however. Politicians tend to react, not to act, which is why reforms were discussed after pressure from the outraged public, yet very little was implemented. Corporate liability from the top managers was quickly dropped, for example, and the public moved on. Most managers liked to see the Sarban-Oxley Act repealed already.[10] Thus the next scandal had to come with the subprime crisis.

## 1.2. The Subprime crisis

In 2003, Warren Buffet stated of the credit derivatives market that they were "financial weapons of mass destruction, carrying dangers that, while now latent are potentially lethal." Others also warned that credit based derivatives coupled with a lack of transparency were leading to a significant concentration of risk. Unfortunately, they were right.

---

[8] See Handelsblatt dated July 11, 2005, p. 21.

[9] See "Arthur Andersen," http://en.wikipedia.org/wiki/Arthur_Andersen, dated October 8, 2006.

[10] According to 3nd. Annual Board of Directors Study, Korn/Ferry International dated February 23, 2006, http://news.onvista.de/alle.html?ID_NEWS=20584380.

Derivative products such as CDOs (Collateralized Debt Obligations) can be directly traced as being one of the major factors leading to the subprime crisis and the greatest financial crisis since the Wall Street crash of 1929. CDOs are structured financial products comprised of a variety of loans, bonds, mortgages and credit derivatives such as Credit Default Swaps or CDSs. For the most part, CDOs were put together using home mortgages and then resold as investment products by the major Wall Street investment banks. These CDOs were structured to meet the requirements of the major US rating agencies which based their risk calculations on complicated economic models and statistical analysis. Two apparently ingenious combinations of factors made it possible to create an innovative financial product with a combined calculated risk in the portfolio lesser than the sum of the individual risk associated with each element in the portfolio.

The basis for the evaluation of risk associated with these financial products as calculated by the rating agencies was based upon the historical default rate of US mortgages. As this data was not always available, it was necessary to draw upon estimates that fit within established portfolio theories and expectations and which would produce the desired reduction of risk between two comparative portfolios. Part of this process was to investigate the relationships and correlations between the individual elements of these portfolios to determine the probability that both or more elements could be eliminated from risk calculations. The complex statistical financial models used by the rating agencies were not always understood or even available to those in the market place as investors. This situation was not considered to be an issue at the time, as the capital markets had a great deal of trust and confidence in the ratings provided by the rating agencies. For decades, the ratings provided by the rating agencies concerning potential risk had been used to determine the terms for credit and loans to borrowers in the capital markets. As a consequence of the subprime crisis, the objectivity of these ratings agencies has now been called into question, most notably due to their previous relationships with the investment banks for which they provided the CDO ratings.

The second situation by which a portfolio rating could be improved was through the use and subordination of various “risk tranches”. In the event of a default or failure of one of the elements or “tranches” in the portfolio, the most subordinated tranche (junior note) would be affected. This process would continue on up the scale to the tranches with AA to BB ratings, (mezzanine notes) and in the extreme case on up to the most senior tranches with AAA ratings.

For decades, the value of American real estate has steadily increased. After all, the USA has been a country of considerable growth both in terms of population and economic expansion. This growth has also been the basis for a historically low level of home mortgage defaults. For the most part, home values have been

sufficient to cover outstanding mortgage balances in the event of a default. As a consequence, lenders were encouraged to offer ever-increasing mortgage loans based on the projected future value of homes in an ever-expanding market. As home values rose, lenders would offer homeowners access to their equity through refinancing or home equity lines of credit which would support even further consumption. Much of the mortgage financing made available to borrowers by Freddie Mac and Fannie Mae was also supported by political incentives to encourage home ownership among socially and economically disadvantaged minority groups. This initiative originated in the mid-1990s with the Clinton administration as lending criteria were relaxed[11] and continued under the Bush administration. In 2003, Congressman Ron Paul warned that this relaxed lending policy would eventually lead to individuals borrowing to buy homes that they could ill-afford and eventually require financial intervention on the part of government. In 1994, the market for subprime mortgages made up only 5% of the total mortgage market and amounted to $35 billion dollars, and by 2006 it had increased to become 20% of the mortgage market for a total of approximately $600 billion dollars. This increase in lending volume was only made possible by ever more relaxed lending standards. Borrowers were able to obtain mortgage loans without showing any proof of income or employment or assets, the so-called "ninja loans" meaning "No Income, No Job, and No Assets". This situation was further encouraged by ever-falling interest rates as initiated by the Federal Reserve under the leadership of Alan Greenspan, with short-term rates reaching a low of 1% in 2004. Subprime borrowers were also offered ARMs, or Adjustable Rate Mortgages with low, interest-only payments required, as well as "teaser loans" with initial interest rates well below market rates that would dramatically increase or reset at a later date. Also available were payment option loans which made it possible for borrowers to set their own repayment schedule and thereby postpone repayment for as long as possible. Altogether, US mortgage borrowing rose from $680 billion in 1974 to $14 trillion in 2001. From a total of 8.8 million homeowners with mortgages, about 10.8% had no actual equity in their property or, in fact, owed more than their home was worth.

[11] "… the Fannie Mae Corporation is easing the credit requirements on loans … The action … will encourage those banks to extend home mortgages to individuals whose credit is generally not good enough… Fannie Mae… has been under increasing pressure from the Clinton Administration to expand mortgage loans among low and moderate income people and felt pressure from stock holders to maintain its phenomenal growth in profits. In addition, banks, thrift institutions and mortgage companies have been pressing Fannie Mae to help them make more loans to so-called subprime borrowers whose incomes, credit ratings and savings are not good enough for conventional loans… Fannie Mae is taking on significantly more risk… the government subsidized corporation may run into trouble… prompting a government rescue… the move is intended in part to increase the number of… home owners who tend to have worse credit ratings… September 30, 1999 New York Times.

Average home values in the USA increased 126% from 1997 to 2006, while the relationship between home values and annual income changed from a ratio of 2.9 in 2001 to 4.6 in 2006. This dramatic change in home values, as compared with annual income, was not considered a problem as long as borrowers were able to service their debt and maintain their mortgage payments. The crisis only came about as a consequence of changing interest rates and the payment structures built into these loans.

Banks can, but in a limited manner, restructure loan intervals as needed to meet business requirements but if they require refinancing at a later date, then it will be necessary for them to draw upon their own liquidity. Therefore every banking student is taught the golden rule of lending, which is to restructure loans through refinancing at appropriate coverage intervals.

When restructuring loans, the risks associated with changing interest rates and refinancing are to be carried and collateralized by the banks themselves. These fundamental rules of finance were unfortunately ignored when it came to the issuance of CDOs by investment banks, which finally amounted to a market value of over $2 trillion dollars. Long-term mortgages were repackaged and sold by the investment banks as special purpose vehicles (Conduits) and collateralized at fairly low capital ratios through the use of short-term commercial paper or CPs. In this way, the CDOs could be refinanced at lower interest rates which created more profitable margins for the banks. The CDOs in these “special purpose entities” did not surface on the bank’s balance sheet. As was the case with Enron, these obligations were not listed as consolidated third party liabilities and therefore not readily apparent at first glance. On bank balance sheets these obligations were simply listed as possible liabilities in the comments section and often escaped notice. In the unlikely event that banks were unable to sell these securities on the market, they would be required to provide adequate liquidity to cover these obligations. High leveraging of stock purchases was also a reason for the financial crisis in 1929.

Deregulation further encouraged the direct and indirect use of leverage by investment banks. For example, in 2004 the SEC allowed investment banks to expand their use of leverage by lowering their capital margin requirement from 8% to 6%. By 2007, the five largest US investment banks had increased their borrowing for investment purposes to $4.1 trillion dollars, which equalled approximately 30% of the US gross domestic product. What motivated the investment banks to take on this level of risk? This was the era of “shareholder value”, of short-term gain and exceptional bonuses. The simplest way to increase shareholder value and therefore also stock value was to use leverage to boost returns on investment. Finally, in order for a bank to receive a rating of “excellent” from the rating agencies, they were required to show a 25% return on investment of capital and therefore a favourable rating for future refinancing. An attractive

aspect of CDOs was that it was not required that they be rated as loans, but could be rated as a security product. This classification allowed the investment banks to realize additional profits by selling them on to other investors and not hold bank funds in reserve as collateral.

Using CDOs, investment banks were therefore able to boost their profitability on invested capital as well as their internal rate of return. Loans would be classified as CDO securities and therefore positively influence the banks balance sheet. As securities, these CDOs would appear to be without risk. In addition, the rating agencies would assign them AAA status, indicating that these "securities" were without risk. As securities, the CDOs were not subject to the strict federal regulations required for debt products nor would they have to be evaluated as debt obligations on the books of the already highly leveraged banks. Free from complying with external financial requirements and internal lending limits, investment bankers were able to secure profitable sources of revenue and therefore substantial bonuses as well. By repackaging US mortgages as investment products, bankers were able to realize approximately $23.9 billion dollars in bonus payments in 2006. In 2007, Swiss bank UBS paid out $10 billion Swiss Francs in bonus payments alone. The availability and easy access to credit for home mortgages encouraged not only dealers but also lenders who provided loans to ever less qualified borrowers. In the end, these lenders were selling these loans on to other investors and therefore did not have to contend with the risk. The relationship between the lenders issuance of credit and mortgages and the associated risk of default were distinctly separated from one another, which lead to a fundamental violation of the market (order) principles of accountability and transparency. The exceptionally complex structure of the CDOs also contributed to this lack of transparency. It only became clear later that it was all but impossible to separate the various problem loans within the CDOs from the total in the portfolio, and impossible to trace them back to the original borrowers. Also, the system of bonus payments made to bankers selling the CDOs appears to be in contradiction to accepted principles of accountability, as their bonuses were based on short-term profitability while the potential long-term negative consequences of their actions were ignored.

The bubble in the US housing market burst in 2006. A contributing factor was the dramatic rise in short-term interest rates which made it impossible for many mortgage borrowers to maintain their payments. This rise in interest rates lead to ever greater defaults and bank repossessions and home prices fell. The consequences for the financial sector first became apparent in February 2007 as HSBC was compelled to write off loans repackaged as CDOs valued $10.5 billion dollars. While serious, the crisis seemed to be limited to the banking sector and did not pose a threat to the real economy. In November 2007, the volume of subprime mortgages was valued at $148 billion dollars. At this point, the extreme difficulty in placing an accurate value on the CDOs became all too

apparent. The lack of transparency associated with the CDOs and the high level of risk they carried due to the subprime mortgages they contained made them all but impossible to sell or accurately value. The market for CDOs collapsed entirely, leading to a crisis of capital liquidity for those banks carrying them on their books. This issue lead to an unexpected reduction of liquidity at the banks. In December, the amount of subprime debt was corrected from $200 billion to $300 billion, and then finally in March 2008 from $350 billion to $600 billion dollars.

A rating of AAA was now considered worthless and all trust in the rating agencies had been lost. Without accurate and reliable ratings from the agencies, the capital markets were crippled. It soon became obvious that the crisis was not limited to just the US. As CDOs had been sold on the international market, the risk that they carried was now also an international problem. Swiss banks such as UBS, and German banks IKB and Sachsen Landes Bank had built up considerable portfolios filled with CDOs and as a consequence experienced severe liquidity problems. In addition, these banks required ever increasing amounts of fresh capital to cover the write-offs associated with CDOs and to support lines of liquidity. The banks which had invested too much of their client's capital were in danger of going bankrupt. US investment banks and larger banks such as UBS were able to raise additional capital on their own, while banks such as Germany's IKB and Sachsen Landes Bank had to be rescued by the German federal government. British mortgage lender Northern Rock experienced a run on the bank and had to be nationalized.

The crisis continued to expand. Two basic issues became apparent: increasing suspicion and mistrust between banks and ever further write-offs due to CDOs, which served to accelerate the crisis of liquidity and available capital. Banks felt that they could no longer trust one another and therefore stopped lending to each other. Without transparency and trust between banks, no one could be sure which banks were solvent and how much remaining debt had to be written off. Ratings given to the banks by the ratings agencies could no longer be relied upon. The inter-banking market collapsed. Banks without branch offices and therefore without access to investors found themselves short of liquidity. Central banks were compelled to provide infusions of capital into the marketplace and to lower interest rates. The quarterly reports by banks concerning their ever-increasing CDO related write-offs only served to further depress the already discouraged mood in the marketplace. As European banks primarily followed US-GAAP for accounting purposes as well as the internationally accepted IFRS standards, this lead to an even greater difficulty in accurately assigning a value to the CDOs. Following US accounting standards which tend to favour shareholder interests, securities and other financial products such as the CDOs must be "mark to market" to assign a current market value. In contrast to European accounting standards, the costs of acquisition are not included if a reduction in