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# The Fall of Long-Term Capital Management

**Xiaowei GUO**

## **Abstract**

Long-Term Capital Management (LTCM) was a very successful hedge fund in 1990s. However, it collapsed in 1998, which is only 4 years later after it was founded. This paper will focus on the causes and environment of the crisis of LTCM regarding the characteristics of hedge funds, government rescue and the regulation on both sides of banks and hedge funds. The aim for this paper is to provide useful lessons through analyzing the history of LTCM and to avoid the same kinds of tragedy.

## **Review of Long-Term Capital Management**

Long-Term Capital Management (LTCM) was formed in February 1994 with equity of \$1.25 billion. Slightly over \$100 million of this money was the contribution of the LTCM's general partners [1]. LTCM was a hedge fund and it was planned from the very start that it would leverage its capital twenty to thirty times. (The fund's leverage ratio ultimately soared to 40 to 1.)

LTCM required a minimum investment of \$10 million and no withdrawals for three years. In addition, its fees were an annual charge of 2 percent of assets, and 25 percent of new profits [2]. These fees were considerably higher than the industry average. But LTCM founders felt that these fees were necessary and justified.

LTCM was actually a very successful business since it was founded. The fund returned 19.9 percent after fees in 1994, 42.8 percent in 1995, 40.8 percent in 1996, and another 17.1 percent in 1997. By late 1997, the equity in LTCM had grown to over \$7 billion. For four years, Long-Term Capital Management had become the envy of Wall Street. The fund had racked up returns of more than 40 percent a year, with no losing stretches, steady performance, seemingly no risk at all. In December 1997, however, LTCM returned \$2.7 billion to its investors, claiming diminished investment opportunities, leaving equity of about \$4.8 billion at the start of 1998. [3]

For a time during the fall of 1998, hedge funds seemed to be on the front page of every newspaper in the world. Investors in some hedge funds had taken huge losses following the collapse of the Russian economy in August, and the Federal Reserve felt it necessary to organize a rescue of this once glorious hedge fund called Long-Term Capital Management. By mid-October 1998, all of Wall Street seemed to have caught 'Long-Term disease [4]'. One by one, Merrill Lynch, Bankers Trust, UBS, Credit Suisse First Boston, Goldman Sachs, and Salomon Smith Barney — the linchpins of the new consortium [5] — divulged large losses that in sum matched those of the Greenwich, Connecticut, based hedge fund..

### **Why it failed?**

Initially, LTCM's model appeared to be very powerful. At the same time, its expertise consisted of the most ideal combination of elites. Namely the founder John Meriwether, father of debt arbitrage of Wall Street; Robert Merton and Myron Scholes, Nobel Prize winners of 1997, as the founders, and David Mullins, the former associate chairman of the Federal Reserve; Eric Rosenfeld, the former director of credit department of Salomon Brothers as other team members. This combination was referred to at the time as the "Dream Team."

#### **1. Hedge fund**

The term of "hedge fund" is largely misleading. It seems that hedge funds can help investors to eliminate risks. But in fact, hedge funds are typically just the opposite of what their name implies: they speculate.

"Hedge funds are commonly structured as private partnerships and thus subject to only minimal SEC (the U.S. Securities and Exchange Commission) regulation. They typically are open only to wealthy or institutional investors. Because hedge funds are only lightly

regulated, their managers can pursue investment strategies involving, for example, heavy use of derivatives, short sales, and leverage.” [6]

Hedge funds have enjoyed great growth in the last several years, with assets under management ballooning from about \$50 billion in 1990 to around \$1.4 trillion in 2007 [7]. The term “hedge fund” was apparently first used in a 1966 *Fortune* magazine article named *The Jones Nobody Keeps Up With* [8] which describes the activities of a fund now commonly considered to be the first hedge fund. Initially founded by Alfred Winslow Jones in the year 1949, this investment form inspired the emergence of an age of hedge-style fund management that included Quantum (George Soros) and Steinhardt Partners (Michael Steinhardt), among numerous others. Although a hedge fund can be organized as a limited liability company, most are organized as limited liability partnerships, established for the purpose of investing the money of their partners. As speculative vehicles for high net-worth individuals and institutional investors, hedge funds are free to hold whatever financial instruments they wish and are free to pursue whatever investment or trading strategies they choose. They can also avoid the costs associated with regulatory oversight, and are free to use whatever fee structure they believe to be optimal. From table 1 of the appendix, we can see that hedge funds had generally better performance than mutual funds.

## 2. High leverage

By the end of 1997, it appears that the fund’s assets had grown to about \$120 billion and its capital to about \$7.3 billion with a high leverage of 16 to 1 [9]. This is of course the result of the requirement of high return. If LTCM defaulted, all of the banks in the room would be left holding one side of a contract for which the other side no longer existed. In other words, they would be exposed to tremendous — and untenable — risks, including liquidity risks, asset risks, payments risks and off-balance-sheet risks. Undoubtedly, there would be a frenzy as every bank rushed to escape the bank’s now one-sided obligations and tried to sell its collateral from LTCM.

Through the computer model analysts, LTCM can speculate the extraordinary profitable opportunities that normally can not be detected by ordinary people. The elites in LTCM downloaded into their computers all of the past bond prices they could get their hands on. They distilled the bond’s historical relationships, and they modeled how these prices should behave in the future. And then, when a market price somewhere, somehow got out of line, the computer models told them. The models were nearly perfect and had been very successful. The experts of LTCM believed spreads between riskier and less risky bonds would tend to narrow. This is logically feasible. But the experts ignored the small probability events and assumed they would not happen.

However, by spring 1998, the unlikely events began to occur. The Asian financial collapse lingered on and the real nightmare happened when Russia devalued the ruble and declared a moratorium on 281 billion rubles (\$13.5 billion) of its Treasury debt. As fear spread of what the breakdowns might be, investors everywhere tried to unload high-risk, illiquid securities and replace these with low-risk, liquid securities. Yields on US B-rated bonds rose to almost 11 percent, a spread of 5.7 percentage points above high-rated corporate bonds, up from a spread of about 2 percentage points. And similar yield-widening happened to several kinds of securities. These sharp widening of yield spreads caused by a large demand for liquidity and quality was just the opposite of what LTCM was betting on. By mid-September 1998, LTCM’s equity had dropped to \$600 million, a loss of more than \$4 billion. [10]

The lack of liquidity caused by high leverage put LTCM to the cliff of the crisis. Actually, if they could have kept enough liquidity until the crisis ended, they could be safe. Because, although the unusual crisis happened, the market after the crisis was still the same as they had predicted. Their prediction was right, but LTCM did not have enough liquidity to wait for that day.

The experience of LTCM once again offered support to the popular, often over-referenced, and convenient consensus that ‘cash is the king [11]’.

### 3. Why did the bankers lend?

Usually, it was the case that the bankers who lent money to LTCM did not even know how much money they had lent. In a public symposium early in 1999, Walter Weiner, the former chairman of Republic National Bank, maintained that the banks had had no choice: “To enter the club, you had to play by LTCM’s rules. The terms were non-negotiable — take it or leave it. [12]” The banks took it.

The banks, too, were greedy, and they were awed by LTCM’s performance and dazzled by the partners’ reputations, degrees, and celebrity. “Unique in Wall Street history, the fund had blazed across the financial skies like luminous fireworks, a half-man, half-machine that seemingly reduced an uncertain world to rigorous, cold-blooded odds. Like visitors from a remote future, the professors seemed to have superseded the random luck and ill fate that had ever lurked in the shadows of markets.” [13]

The second reason may be that there are interest connections between banks and hedge funds. Providing derivatives to their customers had become an attractive source of profits for banks. And furthermore, by doing business with hedge funds, banks are in a position to gain – via objective and subjective information spillover – information regarding the contents and strategies of the hedge funds. This is in conjunction with and supplementary to the overhead view that is made available to banks simply as a result of their counterparty relationship with a customer or correspondent. Perhaps, in at least the case of LTCM, this created a somewhat expected, yet false, sense of security. Even the central bank of Italy had invested \$100 million into LTCM, and lent \$100 million to it at the same time.

### **The government rescue**

On the Wednesday afternoon of September 23, 1998, on account of a crisis of LTCM, the Federal Reserve (Fed) “invited” the heads of every major Wall Street bank for a special meeting. It will be far more than big trouble if LTCM was rescued by a single bank as the problem by that point was too large for one bank to handle. If financial institutions acted in concert, perhaps a catastrophe could be avoided. For the first time, the chiefs of Bankers Trust, Bear Stearns, Merrill Lynch, Morgan Stanley Dean Witter, and Salomon Smith Barney gathered in the Fed’s boardroom not to bail out a Latin American nation but to consider their own rescue.

Alan Greenspan, chief of the Fed, freely admitted that by the rescue of LTCM, the Fed had encouraged future risk takers and perhaps increased the odds of a future disaster. “To be sure, some moral hazard, however slight, may have been created by the Federal Reserve’s involvement. [14]”

If we look at the LTCM episode in isolation, we would tend to agree that the Fed was right to intervene. The risks of a breakdown are immediate; the risks of addiction are lasting. But the LTCM case must be seen for what it is: not an isolated instance but the latest in a series in which an agency of the government has come to the rescue of private speculators. It is true that the Fed's involvement was limited and that no government money was used. But the banks would not have come together without the enormous power and influence of the Fed behind them. Without a joint effort, LTCM surely would have collapsed.

The government's emphasis should always be on prevention, not on active intervention. It is altogether proper that the government set rules in advance for regulated bodies such as banks; crisis intervention on behalf of unregulated hedge funds is another matter.

### **Regulation -- with respect to both banks and hedge funds**

Banks have loaned too much money to LTCM without knowing enough information for effectively evaluating their exposures. The banks did not know the details of LTCM's trading strategies and they appear not to have had a complete picture of the extent of LTCM's borrowings and derivatives positions. Indeed, the one thing the banks did know about LTCM was that it was a hedge fund whose sole activity was speculation and that the purpose of the credit made available to LTCM was to facilitate LTCM's speculative bets.

At least we need to enhance the ability and the incentives of bank depositors, creditors and shareholders to discipline banks and securities firms for taking imprudent risks. The LTCM episode certainly suggests that bank disclosure practices concerning their arrangements with hedge funds and their derivatives and proprietary trading activities are inadequate.

To regulate hedge funds, controls or restrictions upon leverage rates may be the most prudent ways to deal with the risks. This requires banks to have strict controls on credit extended to hedge funds' and also on how much money they should lend to hedge funds. Hedge funds can not have a large impact on financial markets without having the leverage backed. At the same time, this can make sure the deposit institutions with government guarantees would not share the risks faced with hedge funds. Leverage control also can eliminate exogenousness at the largest extent.

The disclosure of hedge funds' information seems effective. However, there are some problems here. First, the complexities of derivatives go far beyond investors' understandable level. Usually it is the case that investors can only understand the information imperfectly. Second, contracts are very different from one another because derivatives are traded "one to one". So the unified disclosure of information can not express the true risks. Most importantly, the disclosure of portfolios will be a model to the whole financial market and will increase volatility. Hence, major banks are all making improvements on credit risks management.

### **Conclusions**

It is hard to say whether the government should rescue large companies like Long-term Capital Management. Although there will be moral hazard due to the rescue, the collapse of confidence may be even more destructive to the whole economy if there is no rescue from the government.

To prevent a crisis like this from recurring, further improvements in regulation may be helpful. Focusing on both the regulations of banks and hedge funds decreases the probability of risks and can serve to lower the probability of big crises.

### **End Notes**

[1] Michael Siconolfi, Anita Raghavan and Mitchell Pacelle. All Bets Are Off: How the Salesmanship and Brainpower Failed at Long-Term Capital --- Investors Clamored to Get In, While Partners Debated Their Ever – Greater Risks --- On the payroll, 25 Ph.D.s. Wall Street Journal (Eastern Edition). New York, Nov 16, 1998. Page A. 1.

[2] Same as the above.

[3] Data from: Hedge funds and the collapse of Long-Term Capital Management. The Journal of Economic Perspectives, Vol. 13, No. 2 (Spring,1999), Page 197.

[4] Roger Lowenstein. When genius failed --- the rise and fall of Long-Term Capital Management. 09 October, 2001 Page 221.

[5] The consortium included Goldman Sachs, Merrill Lynch, J.P. Morgan, Morgan Stanley, Dean Witter, the Travelers Group, Union Bank of Switzerland, Barclays, Bankers Trust, Chase Manhattan, Credit Suisse First Boston, Deutsche Bank, Lehman Brothers, Paribas, and Societe Generale.

[6] Investments. Zvi bodie, Alex Kane, Alan J, Marcus. Page92.

[7] Data source: Van Hedge Fund Advisors International.

[8] Carol Loomis, 1966

[9] Figures are derived from those given on page 4 of the testimony of David Lindsey, director of the Securities and Exchange Commission's Division of Market Regulation.

[10] Data from: Hedge Funds and the Collapse of Long-Term Capital Management. The journal of economic perspectives, Vol. 13, No. 2 (Spring, 1999), Page 197.

[11] Estelle Maxwell. This Year Cash Is King. The Estates Gazette, Feb 14, 2009. Page 59, 2 pages.

[12] Derivatives and Risk Management Symposium on Stability in World Financial Markets, Fordham University School of Law, January 28, 1999, as reprinted in Fordham: Finance, Securities & Tax Law Forum, IV, No. I (1999), 21.

[13] Roger Lowenstein. When genius failed --- the rise and fall of Long-Term Capital Management. 09 October, 2001 Page 233.

[14] Alan Greenspan, letter to Senator Alfonse M. D' Amato, October 20,1998, Page 230.

## Appendix

**Table 1**

Comparison of the Best and Worst Performing U.S. Hedge Funds and Mutual Funds <sup>1</sup> Five Year Net Compound Annual Returns, 4Q93 to 3Q98		
	Hedge Funds	Mutual Funds
Top 10	29.4%	25.7%
Top 10%	25.4%	18.4%
Top 25%	21.4%	15.9%
Bottom 25%	2.2%	2.8%
Bottom 10%	-2.4%	-0.6%
Bottom 20	-3.0%	-16.8%

Resource from: [http://www.Vanhedge\\_Fund.com/](http://www.Vanhedge_Fund.com/)

### Exhibit:

#### **Compare Long-Term's losses from various categories of trades from January 1, 1998, to the bailout [14]:**

Russia and other emerging markets: \$430 million

Directional trades in developed countries (such as shorting Japanese bonds): \$371 million

Equity pairs (such as Volkswagen and Shell): \$286 million

Yield-curve arbitrage: \$215 million

Standard & Poor's 500 stocks: \$203 million

High-yield (junk bond) arbitrage: \$100 million

Merger arbitrage: Roughly even

These seven categories accounted for \$1.6 billion in losses—a catastrophic result. However, Long-Term could have survived them.

Now consider the losses in its two biggest trades:

Swaps: \$1.6 billion

Equity volatility: \$1.3 billion

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**Roger Lowenstein.** When genius failed ----- The rise and fall of Long-Term Capital Management. 09 October, 2001

**Franklin R. Edwards.** Hedge funds and the collapse of Long-term Capital Management. The journal of economic perspectives, Vol. 13, No. 2 (Spring, 1999), Page 189-210

**Michael Siconolfi, Anita Raghavan and Mitchell Pacelle.** All Bets Are Off: How the Salesmanship And Brainpower Failed At Long-Term Capital ---Investors Clamored to Get In, While Partners Debated Their Ever-Greater Risks --- On the payroll, 25 Ph.D.s. Wall Street Journal(Eastern Edition). New York, Nov 16, 1998.

