

CCS Exhibit 6.3

Excerpt from the Feb 8, 2000 airing of Nova, on PBS

Derived by economists Myron Scholes, Robert Merton, and the late Fischer Black, the Black-Scholes Formula is a way to determine how much a call option is worth at any given time. The economist Zvi Bodie likens the impact of its discovery, which earned Scholes and Merton the 1997 Nobel Prize in Economics, to that of the discovery of the structure of DNA. Both gave birth to new fields of immense practical importance: genetic engineering on the one hand and, on the other, financial engineering. The latter relies on risk-management strategies, such as the use of the Black-Scholes formula, to reduce our vulnerability to the financial insecurity generated by a rapidly changing global economy.

At the very height of their careers, Merton and Scholes were already multi-millionaires. Five years earlier, John Meriwether, the legendary bond trader at Salomon Brothers, had enticed Scholes and Merton to join him and 13 other partners in a new company he was launching, Long Term Capital Management. In 1994, Business Week introduced the public to the "Dream Team" Meriwether had assembled.

Within months they had raised three billion dollars and were ready to start investing across the globe. They set up not on Wall Street but far away from ordinary traders, in Greenwich, Connecticut. From their headquarters they devised one of the most ambitious investment strategies in history. Its success depended on absolute secrecy. Not even their investors were allowed to know what they were doing. Analyzing historical data, they used probability to bet that key prices would move roughly as they had in the past. To protect themselves against unwanted risk, they relied on an insight of the Black-Scholes formula - dynamic hedging. In effect, offsetting risk by taking bets in the opposite direction. Supremely confident, LTCM placed vast sums of money on the markets.

"It was as though the world was behaving exactly the way it had been writ on the blackboard. Long Term Capital thought that they had discovered the path to Nirvana. Here they are doing their day-to-day activities, playing golf in lush Greenwich or attending hedge fund conferences in Bermuda, or raising funds in Cannes. And then slowly and totally unexpectedly, a change in the market dynamics began to become apparent."

In the summer of 1997, across Thailand, property prices plummeted. This sparked a panic that swept through Asia. As banks went bust from Japan to Indonesia, people took to the streets - events so improbable they had never been included in anyone's models.

"Everyone in the marketplace thought the sky was falling, and there was instant reaction. The market broke, then rallied, then broke, then rallied. We didn't know what to believe."

As prices leapt and plunged as never before, the models traders used began to give them strange results, so they relied instead on their instincts. In a

time of crisis, cash is king. Traders stopped borrowing and dropped risky investments.

"Models that they were using, not just Black-Scholes models, but other kinds of models, were based on normal behavior in the markets and when the behavior got wild, no models were able to put up with it."

"Although their models told them that they shouldn't expect to lose more than 50 million or so on any given day, they began to lose 100 million and more, day after day after day till finally there was one day, four days after Russia defaulted, when they dropped half a billion dollars, 500 million in a single day."

In Greenwich, LTCM faced bankruptcy, but if the company went down, it would also take with it the total value of the positions it held across the globe - by some accounts \$1.25 trillion, the same amount as the annual budget of the US government. The elite of Wall Street would suffer heavy losses. The Federal Reserve Bank called upon the world's top financial regulators to discuss the crisis.

Peter Fisher, a Federal Reserve Regulator said, "What really was the shock for me when we went up to Long Term Capital and the partners gave us an overview of their positions and the risks and the pressures they were under, was the extraordinary scope of the risks that they had taken on, the breadth of the portfolio, and yet how utterly their effort to diversify the portfolio had failed them, how - that this wide set of positions across all markets had all come in, were all behaving the same way. Everything had come up heads.

Math doesn't drive financial markets, people drive financial markets, and people are not predictable. We do not yet have a universal theory of human behavior or human motivation. Given that that's so, we're not likely to have robust models of financial market behavior that will always work, and I think the hubris of the mathematician is to ignore that fact. [emphasis added]"