# One derivatives disaster after another; will they never learn?

by John Hoefle

On Sept. 23, senior representatives of some of the most powerful investment and commercial banks in the world gathered at the Federal Reserve Bank of New York, for an emergency meeting to plug the trillion-dollar-plus hole in the world derivatives market, caused by the failure of Long Term Capital Management, a Connecticut-based hedge fund. The Fed and the bankers were faced with a difficult choice: Either pump billions of dollars (money which the already bankrupt banks can't afford) into Long Term Capital (LTC), or let LTC default on its debts, an act which would likely trigger a chain-reaction disintegration of the world derivatives markets, and consequently of the entire global financial system.

There was, of course, another possible option, the New Bretton Woods policy of Lyndon LaRouche, in which the unpayable derivatives and related financial claims would be written off. But these Hamlets of Wall Street could not bring themselves to take the only step which could save them; rather than abandon their sinking ship, they chose to apply yet another dose of the poison which has led the world to the brink of the worst financial collapse in centuries. They chose a bailout, slapping yet another patch on the bubble. The Fed followed up on Sept. 29, at its regularly scheduled meeting of the Federal Open Market Committee, by cutting the federal funds interest rate 0.25%, to 5.25%, signalling its intent to pump more hot air into the bubble, at the risk of setting off hyperinflation.

In a rational world, a policy which leads to an unending string of disasters, each worse than the one before it, would be abandoned. But, the modern financial system is not rational: The high priests of this failed religion of money would rather watch the entire world explode, than give up their power and wealth. The irony, and the tragedy, is that by clinging so desperately to their failed dogma, they are ensuring their own doom, and that of the world they presume to rule. Natural law is paying them a visit, and it's not happy.

## 'The best and the brightest'

The failure of Long Term Capital is a classic example of why the current system is doomed. LTC was, by the distorted standards of Wall Street, a collection of the brightest minds in what is called the "financial services industry," a collection of Wall Street superstars, former regulators, and world-class mathematicians, who devised a betting system which made them billions of dollars of profits in the world casino. As a result of its competence at playing the system, LTC was able to borrow in excess of $100 billion—by some accounts, as much as $400 billion—from the world's largest and most sophisticated banks and investors, funds which they then used as collateral to make derivatives bets with a notional value well in excess of $1 trillion. But this entire edifice was built, as it were, on axioms of sand.

Among its pantheon of superstars, LTC had two Nobel laureates, Robert Merton and Myron Scholes, who jointly won the Nobel Prize for Economics in 1997, for developing the mathematical formulas upon which the derivatives trade is based. Executing that strategy, was John Meriwether, the former Salomon Brothers whiz, who had made bundles of money for Salomon, until he was forced out in the wake of the 1991 Treasury bond scandal; and a collection of other notables, including former Federal Reserve vice chairman David Mullins, and several former Salomon traders.

If they were so smart, why did they fail?

As usual, the spin doctors are working overtime, pushing the line that LTC was to blame, that the firm simply made some bad bets. This is a variation of the "loan assassin" theory which is always used to explain away financial disasters, including the high-profile cases of Barings, Kidder Peabody, and Orange County, California. The consistent theme is that whatever went wrong, is the result of rogue elements abusing the system, a system which itself is sound. In short, they're lying.

The problem is not so much that LTC placed bad bets, but that the world financial system is disintegrating out from under those bets. It was the systemic crisis which blew out LTC—which means that the damage goes far beyond LTC: There are lots of other bets out there that have gone awry, but have not yet been publicly admitted.

The derivatives bets placed by LTC, were wagers that, over the long run, the interest rates of the major industrial



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nations would converge upon their historical relationships, within parameters defined by Merton and Scholes's mathematical models. This assumption, that what has happened in the recent past, defines what will happen in the future, is the basis for the computer models used by virtually all of the players in the financial markets. But the world is nonlinear: Computer models based upon exhaustive analysis of past financial data, cannot predict events which lie outside of their linear, statistical universe. LTC's financial models were incapable of forecasting the systemic disruptions which broke out in Asia and Russia, throwing the financial world into panic, and sending investors into the perceived safety of U.S. and German government bonds. That rush to "safety" widened the interest rate spread, causing major losses for LTC.

When the Asian and Russian crises occurred, LTC lost heavily, its capital dropping from $4.8 billion at the beginning of the year, to just $600 million when the banks took it over; the firm lost some 44% of its capital in August alone.

That LTC placed bets which proved deadly, is inescapable, but the problem is much larger than a single fund. LTC blew up because it was operating under false assumptions, the same erroneous axioms which underlie the bubble as a whole. It was their lack of understanding of true economic science which produced the losses, not some unexpected movements in the markets. LTC failed because reality diverged from the virtual reality upon which the firm bet its future. As such, LTC is a metaphor for the derivatives bubble as a whole, and an omen of things to come for other hedge funds, and for the big U.S. and European derivatives banks. (U.S. financial institutions have some $40 trillion in derivatives, led by Chase Manhattan, with $8.5 trillion, and J.P. Morgan, with $7.5 trillion.) There is no "hedge" against natural law—all of these derivatives institutions are doomed.

## Seal of approval

The Nobel Prize in Economic Sciences was awarded to Merton and Scholes in 1997 by the Royal Swedish Academy of Sciences, in the Academy's words, "for a new method to determine the value of derivatives. . . . Their methodology has paved the way for economic valuations in many areas. It has also generated new types of financial instruments and facilitated for efficient risk management in society. . . . [The late Fischer] Black, Merton and Scholes thus laid the foundation for the rapid growth of markets for derivatives in the last ten years." One example of their "vital contribution" can be seen in the accompanying box, which is an example of the Black-Scholes calculation of a European call option.

Contrast this gobbledygook with Lyndon LaRouche's Typical Collapse Function Triple Curve (**Figure 1**), which compares the growth of financial and monetary aggregates,

## The Black-Scholes formula for valuing derivatives

In 1997, the Nobel Prize for economics was awarded for imputed success in devising "a new method to determine the value of derivatives." In announcing the prizewinners, the Royal Swedish Academy of Sciences stated: "Robert C. Merton and Myron S. Scholes have, in collaboration with the late Fischer Black, developed a pioneering formula for the valuation of stock options. . . . It has . . . generated new types of financial instruments and facilitated more efficient risk management in society."

A year later, in September 1998, Long Term Capital Management, the firm co-founded in 1994 by these Nobel laureates, had failed spectacularly. Here is the derivatives equation that won the Nobel Prize, but clashed with reality, taken from the Royal Swedish Academy of Sciences 1997 press release announcing the Nobel economics award to Merton and Scholes:

Black and Scholes' formula for a European call option can be written as

$$C = SN(d) - Le^{-rt}N(d - \sigma\sqrt{t})$$

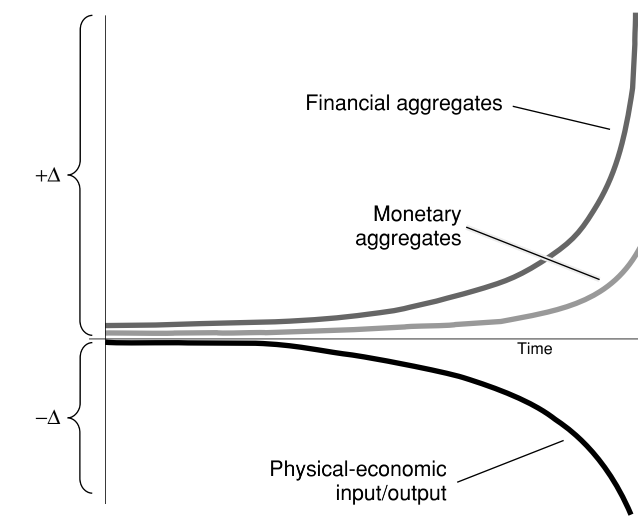
where the variable $d$ is defined by

$$d = \frac{tn\frac{S}{L} + \left(r + \frac{\sigma^2}{2}\right)t}{\sigma\sqrt{t}}$$

According to this formula, the value of the call option $C$, is given by the difference between the expected share value—the first term on the right-hand side—and the expected cost—the second term—if the option right is exercised at maturity. The formula says that the option value is higher the higher the share price today $S$, the higher the volatility of the share price (measured by its standard deviation) sigma, the higher the risk-free interest rate $r$, the longer the time to maturity $t$, the lower the strike price $L$, and the higher the probability that the option will be exercised (the probability is evaluated by the normal distribution function $N$).

*—John Hoefle*

FIGURE 1
**A typical collapse function**




against the productive capacity of the physical economy. Were the Royal Academy serious about the science of economics, they would recall all of the Nobel Economics Prizes ever issued—with the exception of the one issued in 1988 to economist Maurice Allais—and award one to LaRouche for his Triple Curve and LaRouche-Riemann econometric model. But the Royal Academy is a political, not scientific, body—in fact, it is decidedly anti-science—which allocates its prizes to those who serve the interests of the Academy's sponsors, the financial oligarchy. Thus, the prizes go to those who further the goals of the oligarchy, by promoting the bubble, fascist economics, and slavery.

By awarding the Nobel Prize to Merton and Scholes (who had been practicing their theories at LTC since 1994), the oligarchy was in effect putting its stamp of approval on the derivatives market in general, and LTC in particular. Far from being a rogue operation, LTC was a celebrated model for the derivatives market.

## The system is the problem

To understand why these disasters occur, one must look beyond the individual crises, to the process which generates them. These crises are not, as the spokesmen of the bubble would have us believe, anomalies within the system, but are in fact *characteristic of the system*. The current global financial and monetary system, is based upon the belief that money is primary, and that all economic activity ultimately flows from the manipulation of money. The real world, to these money-changers, is just a vehicle for their financial games.

The system these high priests of money have created, is the one described by LaRouche's Triple Curve: Financial aggregates—derivatives, debts, equities—are growing at hyperbolic rates, creating claims which must at some point be paid. To provide the money to service these claims, governments and the banks have been pumping money into the system, causing the level of monetary aggregates to rise. But as these claims upon the physical economy have been growing, the productive sector of the economy—which produces the wealth upon which all financial activity ultimately depends—has been declining steadily since 1967-70, as money and activity that should have gone into increasing productivity, has instead been diverted to feed the bubble.

In mathematical terms, this mutually hyperbolic relationship between the three curves, defines a discontinuity in the process—a boundary condition has been reached, from which the present system cannot survive. The shocks in Asia and Russia, and the far bigger shocks to come, are the result of this system breaking apart.

By attempting to save the bets of LTC, and by lowering interest rates, the bankers are attempting to save their speculative system—to save the value of their money—by applying more of the same poison which created the bubble in the first place. But, their attempt to pump up the bubble only increases the instability of the system, making its inevitable disintegration even worse. The harder they try to save it, the more certain is its doom.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