

# Derivatives on TV

A TALE OF TWO DERIVATIVES DEBACLES IN PRIME-TIME

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WHAT DO DERIVATIVES and television have in common? Most people think derivatives are complex,<sup>1</sup> but view television as simple. Our view is the opposite: derivatives are relatively straightforward, but television is multifaceted.<sup>2</sup> Because the average person's knowledge of derivatives is more likely acquired through television or other popular media than through formal training, the depiction of derivatives on television is extraordinarily important. If a juror learns

from television that derivatives cause large losses and provide few or no benefits, then her decision in a shareholders' lawsuit alleging that management violated its fiduciary duty by buying (or not buying<sup>3</sup>) derivatives may be affected by that coverage. Similarly, if a voter or shareholder learns from television that derivatives solve any financial problem, then she is less likely to monitor derivative usage by her county treasury or by corporations in which she owns stock.

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- 1 Derivatives are so named because their value is derived from or linked to some underlying asset, reference rate or index.
- 2 Peter H. Huang, *Law and Economics in Xena, Warrior Princess*, 2 Whoosh! (1996), available on-line at <http://whoosh.org/issue2/huang.html> (discussing implications for law and economics of a particular television show).
- 3 Although no cases hold there is a fiduciary duty to hedge using derivatives, some commentators interpret *Brane v. Roth*, 590 N.E.2d 587 (Ind. 1992), as doing so. This interpretation, however, is unwarranted. Kimberly D. Krawiec, *Derivatives, Corporate Hedging, and Shareholder Wealth: Modigliani-Miller Forty Years Later*, 1998 U. Ill. L. Rev. 1039, 1102-04; George Crawford, *A Fiduciary Duty to Use Derivatives?* 1 Stan. J.L. Bus. & Fin. 307, 329-30 (1995).

During Congressional debates, several legislators and witnesses cited media coverage of derivatives to support proposed legislation restricting derivatives use. For example, Representative Edward J. Markey of Massachusetts cited the coverage of Nick Leeson by *Newsweek* and *Fortune* magazines in proposing an amendment to the Private Securities Litigation Reform Act of 1995 that would have rendered the Act inapplicable to derivatives transactions.<sup>4</sup> In support of that amendment, John Dingell of Michigan quoted “a particularly chilling moment” in a *60 Minutes* “expose on” derivatives.<sup>5</sup> Similarly, Senator Byron L. Dorgan of North Dakota, in introducing the Derivatives Limitations Act of 1995, cited general newspaper coverage and television reports on derivatives.<sup>6</sup> He also cited media coverage of derivatives in proposing amendments to the Financial Services Modernization Act of 1999.<sup>7</sup> Finally, Brooksley Born, the Chairperson of the

Commodity Futures Trading Commission (CFTC), cited media coverage of derivatives during Congressional testimony.<sup>8</sup> There is also evidence that media coverage shapes the views that other people have about derivatives.<sup>9</sup>

Derivatives went largely unnoticed by television until the Federal Reserve unexpectedly raised interest rates in 1994, causing significant losses and even several bankruptcies by derivatives investors who had made large, leveraged bets that interest rates would not rise. Since then, however, derivatives have so infiltrated popular media that today nearly everyone has some experience with derivatives on television. In this article, we focus our discussion solely on two television programs that covered highly publicized derivative debacles: the March 5, 1995, *60 Minutes* coverage of the bankruptcy of Orange County, California, and the February 8, 2000, NOVA coverage of the near-collapse of Long-Term Capital Management (LTCM).

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4 141 Cong. Rec. H2818-01 (Mar. 8, 1995), H2826.

5 *Id.* at H2827.

6 Senator Dorgan stated that “[t]he term ‘derivative’ is not readily understood by most.” 141 Cong. Rec. S3889-01 (Mar. 14, 1995), S3889. He also specifically cited a “Washington Post op-ed piece on derivatives called ‘Lessons from Barings’ in support of his proposed legislation.” 141 Cong. Rec. S3964-01 (Mar. 15, 1995), S3964.

7 Senator Dorgan cited a *Wall Street Journal* article on Long-Term Capital Management and the *Fortune* article titled “The Risk That Won’t Go Away, Financial Derivatives Tightening Their Grip on the World Economy, and No One Knows How to Control Them.” 145 Cong. Rec. S483-02 (May 6, 1999), S4840.

8 Brooksley Born stated that “many of the regulatory issues identified in the concept release [issued by the CFTC about over-the-counter derivatives] became front-page news last September when a very large hedge fund, Long-Term Capital Management L.P., nearly defaulted on \$1.25 trillion in notional value of exchange-traded and OTC derivative contracts.” Testimony before the House of Representatives on the Impact of Technology on Banking 1999 WL 170220 (F.D.C.H.) (Mar. 25, 1999); Testimony before the House of Representatives on Technological Trends in the Futures Industry 1999 WL 191046 (F.D.C.H.) (Mar. 25, 1999); and Testimony before the House of Representatives on Reauthorization of the Commodity Futures Trading Commission 1999 WL 313983 (F.D.C.H.) (May 18, 1999).

9 “Bob Whaley, a finance professor at Duke University’s Fuqua School of Business, changed the way he taught his derivatives course in 1995 – after seeing a ‘60 Minutes’ segment on derivatives. I was ‘absolutely dumbfounded at the misrepresentations and mischaracterizations’ about their supposed evils, he says. But after playing the video on the first day of class, he discovered that students bought into the news show’s views. Now at the end of the course, he says, students are ‘as dismayed as I was at the show’s lack of knowledge about derivatives and derivatives markets.’” Stephen Barr, *Incomplete Education*, CFO Mag. for Senior Fin. Executives, Apr. 1, 1997, at 30. The law students in one of our securities regulation courses had precisely the same reactions.

## WHAT HAPPENED?

Orange County and LTCM appear at opposite ends of the spectrum of recent derivatives losses. Orange County's Treasury was a one-man show, and its now-infamous treasurer, Robert L. Citron, was a seventy-year-old college dropout. In contrast, LTCM was a slick, sophisticated hedge fund,<sup>10</sup> led by John Meriwether, whose principals included two Nobel laureates and several "rocket scientists" recruited from the investment bank Salomon Brothers. Notwithstanding these differences, Orange County and LTCM had two things in common: each lost more than a billion dollars on derivatives and each shrouded the details of its operations in secrecy.

### Orange County

Citron dominated the Orange County Treasury in the 1980s and 90s.<sup>11</sup> He was one of the nation's best-known municipal treasurers, primarily because his investment strategies produced a very high average return of 9.3%. Yet before 1995, the public was largely unaware of how Citron was generating such high returns.

Citron's strategies consisted primarily of large, leveraged bets that short-term interest rates would not increase. Citron borrowed about \$13 billion from various securities firms through arrangements known as reverse repurchase agreements, using Orange County's \$7.4 billion investment pool as collateral. This gave him about \$20 billion to invest. Citron used these funds to purchase short-maturity,

highly-rated bonds, as Orange County's investment regulations required.

During the early 1990s, short-maturity, highly-rated bonds returned approximately 3%. How did Citron plan to increase his returns to above 9%? This is where derivatives entered the picture. Citron purchased a special type of bond, called a "structured note," whose payouts were not fixed, but rather were based on one or more formulae.

For example, Citron bought large amounts of "inverse floaters," bonds whose value declines rapidly when interest rates increase. An inverse floater might pay 13% minus a multiple of a short-term floating rate. If the short-term rate remained at 3%, the structured note would pay 10%. But if the short-term rate increased, the payout would decline, and the more it declined the less the notes would be worth. Citron also bought more complex structured notes.

Although these structured notes offered potentially high returns, they also carried the risk of large losses. Citron's strategy would succeed only if interest rates remained low. When asked how he knew rates would not increase, Citron replied, "I am one of the largest investors in America. I know these things."

Unfortunately for Orange County, Citron was wrong. The Federal Reserve increased short-term rates on February 4, 1994, and five times thereafter in 1994, and Orange County's investment pool began hemorrhaging. Amazingly, Citron was able to hide these losses during 1994 because of the way in which his

<sup>10</sup> A hedge fund is an investment vehicle typically restricted to a small number of wealthy or sophisticated investors and established outside of the U.S. For example, although LTCM was a U.S.-registered limited partnership, its positions were held by a Cayman Islands entity and administered by a Dutch company. Nicholas Dunbar, *Inventing Money: The Story of Long-Term Capital Management and the Legends Behind It* 126 (2000). See also Roger Lowenstein, *When Genius Failed: The Rise and Fall of Long-Term Capital Management* (2000) (providing an unauthorized history of LTCM).

<sup>11</sup> The details in this essay are drawn from Philippe Jorion, *Big Bets Gone Bad: Derivatives and Bankruptcy in Orange County* 7-18, 30-37, 47-51, 67-83 (1995) and Frank Partnoy, F.I.A.S.C.O.: *Blood in the Water on Wall Street* ch. 8 (1997).

derivative investments were structured, and because of the lack of oversight of his investment activities by both voters and county officials. Although the structured notes carried great market risks, they technically fit within Orange County's investment guidelines. They were short-term. They were issued by highly-rated entities, including federal agencies. As a result, any disclosure of one of Citron's investments would read, for example, "\$100 million AAA-rated, Federal Home Loan three-year maturity note."

Such limited disclosure masked the note's true risk, not unlike the proverbial wolf in sheep's clothing. The poor disclosure, and Orange County voters' increasing reliance on the funds generated by Citron as a substitute for increased taxes or cuts in county services, prevented a Costa Mesa accountant, John Moorlach, from credibly challenging Citron during his June 1994 reelection bid, although Moorlach was eerily accurate in predicting a \$1.2 billion loss as early as May 1994.

On December 1, 1994, Orange County officials held a press conference announcing losses of \$1.7 billion. The reason for the losses was simple: interest rates had increased, making the structured notes far less valuable. Orange County was unable to repay the money it had borrowed and filed the largest municipal bankruptcy petition in history on December 6, 1994. Citron was later found guilty of violating California investment law.

## LTCM

LTCM couldn't have been more different than Orange County. It employed about 200 people in London, Tokyo, and Greenwich, Connecticut, including many of the top minds in finance: Meriwether, former vice-chairman of Salomon Brothers; two of his finance professors, Robert C. Merton and Myron Scholes,

who won the 1997 Nobel Prize in Economics for their work in options theory; a former vice-chairman of the Federal Reserve, David Mullins; a former senior Italian treasury official; and a cadre of traders from Meriwether's "bond arbitrage" group at Salomon.<sup>12</sup>

At Salomon, Meriwether was a superstar. His traders engaged in complex trading strategies using derivatives, and were so successful that they generated 87% of Salomon's profits from 1990 to 1993. Meriwether made millions, but left Salomon after the firm became embroiled in a U.S. Treasury bond scandal in 1991. By October 1993, Meriwether had conceived of the LTCM idea, recruited several traders from Salomon, and was ready to begin shopping for investors.

The LTCM prospectus described its expected investment strategy as highly sophisticated, involving primarily "relative value" and "convergence" trades – essentially buying a temporarily cheap asset, selling a roughly equivalent temporarily expensive asset, and waiting for the two to converge in price. The prospectus cited a few examples of such trades from the Salomon bond arbitrage group, although it noted that new strategies were expected and could not be specified in advance. The prospectus also noted that LTCM intended to form "strategic relationships" with important organizations throughout the world.

LTCM was called the "Rolls Royce" of hedge funds, and its expenses justified the moniker. LTCM charged a 2% annual fee (double the going average) plus 25% of any profits, and the fund required a minimum investment of \$10 million. Moreover, investors would not be able to withdraw their money for three years. Notwithstanding these sky-high expenses, Meriwether raised \$1.5 billion by early 1994.

It immediately was apparent that LTCM's

<sup>12</sup> The details about LTCM in this essay are drawn from Dunbar, *supra* note 10, at xi, 123-27, 190-92, 202-05.

“strategic relationships” would play an important role. In fact, many of its investment strategies seem designed to profit more from cozy relationships than from complex formulae. Several investment banks provided LTCM with previously unheard of zero-margin loans (i.e., a loan of 100% of the value of the collateral posted); not coincidentally, many senior officials at those banks were invested in LTCM. LTCM purchased a large stake in Bear Stearns; not coincidentally, the Bear Stearns CEO had invested \$10 million in LTCM. LTCM acquired valuable information for its trades from central bank officials; not coincidentally, both Meriwether and Mullins had close ties to numerous central banks.

For example, much of LTCM’s activity was in Italy, where it had extraordinary connections. LTCM employed a former Italian Treasury official responsible for debt management, with the Bank of Italy as a major (\$100 million) investor. Merton had near-deity status in Italy. It should not seem a coincidence that LTCM purchased an estimated \$50 billion of Italian government bonds and, at one point, used its zero-margin loans to capture 25% of one segment of the Italian bond market. LTCM also benefited from a tax loophole for foreign investors and from the prospect of Italy’s entry into the European monetary system, areas in which LTCM’s contacts gave the firm an obvious advantage.

It is ironic that these strategies were driven by connections more than complex formulae. Although LTCM’s reputation was as a sophisticated derivatives powerhouse, such brawn-over-brain strategies were less complex than Orange County’s structured notes, and hardly required Merton and Scholes.

However, plenty of LTCM’s trades were more

complex, as promised. By the end of 1997, LTCM had about \$4.7 billion of equity, which it used to borrow \$125 billion on its balance sheet (nearly 30-times leverage) and another \$1.25 trillion of off-balance sheet derivatives liabilities (a staggering amount of leverage, however measured).<sup>13</sup> LTCM’s positions were chock full of derivatives: sales of long-dated options, bets that stock in the same company sold in different markets would converge in price, bets that U.S. dollar swap rates were too high compared to U.S. treasury yields (a spread that, ironically, has increased even more in recent months), and even a bet in long-dated U.K. bonds that, because it was made using private derivatives, actually exceeded the size of the entire market.

LTCM’s initial success was astounding, also as promised. The fund returned 59% in 1995 and 44% in 1996. LTCM generated substantial returns in 1997, but returned a portion of its investors’ money that year, claiming it had grown so large that it was unable to profit from its bread-and-butter bets without moving the market.

Its bets began going bad in May and June 1998, when it lost money for the first time in its short history.<sup>14</sup> As LTCM continued to lose money its equity was reduced and, because its positions remained the same, its leverage was increased above even the previous high levels. Such leverage made LTCM’s returns very sensitive to small changes in markets. At the same time, its large and illiquid positions would be difficult to unload in a declining market.

It is difficult to pinpoint a particular trade or point in time that ruined LTCM. Several trades delivered near-knock-out punches in August 1998. Like many hedge funds and banks, LTCM had bet on emerging markets

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<sup>13</sup> One advantage to using derivatives for financing purposes is that the leverage supplied need not be included as a balance sheet liability.

<sup>14</sup> Interestingly, Salomon Brothers, which also was losing money on some of the same bets, closed its bond arbitrage desk in July 1998.

bonds – including a relatively small investment in Russian bonds – and in August those bonds plummeted. As investors rushed to sell these bonds, the markets were seized by the lack of liquidity and fell even lower. LTCM also made a large bet that Tellabs would complete its takeover of Ciena, and lost \$100 million on that trade on August 20 when analysts speculated the merger might be canceled.

Neither the bets on emerging markets bond purchases nor Tellabs-Ciena seemed to require the kind of complex, quantitative analysis that had earned Merton and Scholes the Nobel prize. In any event, by August 21, LTCM had lost more than half a billion dollars. Meriwether hurriedly sent a letter to investors blaming the collapse in Russia for the liquidity crisis and assuring investors that LTCM was alive, with capital of \$2.3 billion.

The final blow appears to have come during September, when volatility in nearly every market spiked upward and LTCM sustained massive losses from earlier sales of equity index options. Selling options is a highly risky, but relatively simple strategy. The seller receives cash today and keeps the cash so long as markets do not move much. It seems that LTCM sold huge numbers of long-dated options, mostly on the French and German stock indices. As volatility increased in September, LTCM lost even more money on those positions.

In mid-September, LTCM clearly lacked the assets to repay those loans. Under the “gentle pressure” of the Federal Reserve, which was concerned that LTCM’s failure might lead to a system-wide collapse, LTCM’s lenders met in the offices of the New York Federal Reserve Bank to discuss how to save LTCM. On September 23, 1998, fourteen banks agreed to contribute \$3.5 billion, in return for most of LTCM’s equity. They didn’t have much of a choice.

Meriwether and his crew kept their jobs, but lost most of their personal stakes in LTCM.

LTCM’s total losses were \$4.6 billion. Although details remain scant, it appears that emerging markets accounted for less than 10% of the losses, while the equity index volatility bets (selling options) lost \$1.3 billion and fixed income arbitrage strategies (previously 87% of Salomon’s profits) lost \$1.6 billion.

## TELEVISION COVERAGE

### Orange County

On March 5, 1995, the CBS newsmagazine *60 Minutes* broadcast a story about derivatives, focusing on Orange County. Reporter Steve Kroft introduced derivatives as “too complicated to explain, but too important to ignore,” and described derivatives as “highly exotic, little understood, and virtually unregulated.” *60 Minutes* concluded its introduction to derivatives by noting that “some people believe they’re [derivatives] so unpredictable they could bring down the world banking system.” The show opened with aerial images of picturesque Orange County: birds flying over the blue Pacific, palm tree-lined homes with pools, yachts, a plush golf course, and sandy beaches, under the sun.

Throughout the program, Kroft and his guests likened derivatives to gambling, repeatedly emphasizing that derivatives are essentially bets. This analogy is misleading because buying certain derivatives is like buying insurance against an accident, while not buying those derivatives is essentially betting on the accident not happening. The interviewees (primarily private and public fund managers) also emphasized the complexity of derivatives. Kroft claimed that, no matter who they interviewed and no matter how hard they tried, viewers and investors were unlikely to understand derivatives. A Painesville, Ohio, councilman and two female treasurers from Ohio school districts corroborated this point by claiming that they had purchased derivatives without realizing that

they had done so and without understanding the risks involved. To emphasize this point, Kroft exhibited the coupon rate formula for one Orange county derivative contract, a formula that obviously would appear impossibly complex to a viewer unfamiliar with derivatives (but could have been explained step-by-step).

The program continued to liken derivatives investing to complex science by stating that Wall Street hired “rocket scientists” with mathematics or physics Ph.D.s, but no finance background, neglecting to note that Wall Street also hired many finance Ph.D.s (or even salesmen with little technical training). Kroft compared rocket scientists to genetic engineers and derivatives to Frankenstein’s monsters.<sup>15</sup>

*60 Minutes* concluded by suggesting ominously that viewers may already own derivatives in mutual funds or pension plans without realizing it. In the parting shot, Kroft queried the Ohio councilman as to where the money that his city treasury had lost in derivatives went. After several moments of embarrassed silence, the councilman was forced to admit that he had no idea. Unfortunately, neither did *60 Minutes*’ producers.

## LTCM

On February 8, 2000, the PBS show “NOVA: Trillion Dollar Bet” described the discovery of the Black-Scholes option pricing formula and its use by LTCM.<sup>16</sup> The show opened with aerial images of Chicago and trading in the pits of the Chicago Mercantile Exchange, while stating the golden rule of capitalism: “if you want to make money, you have to take risks.”

NOVA explored the tension between much modern financial theory, exemplified by econ-

omist Merton Miller’s explanation of the random walk theory of stock prices and the efficient markets hypothesis, and the views held by many professional traders that it is possible to predict market prices and thus “beat the market.” This view was stressed by one trader’s explanation of the importance of fear, human judgment, intuition, and psychology. Financial economist Zvi Bodie articulated the view that traders may succeed due more to luck than skill.

NOVA provided a good overview of the history of options pricing and the development of modern options pricing models. Paul Samuelson, for example, discussed early attempts to price options, referring to a precise option pricing formula as the “Holy Grail.” The NOVA commentators described the shortcomings of early financial models, which attempted to capture mathematically a typical investor’s risk preferences, emotions, and guesses about other investors’ expectations. The problem with such models, as Bodie explained, is that they required unobservable inputs.

Scholes described the great contribution to the field made by Fisher Black and Scholes: eliminating all unobservable variables from the model except one: the riskiness of the underlying stock. By depicting synchronized moving colored graphs, the show clearly explained and illustrated the crucial ideas of dynamic hedging and portfolio replication.

Robert Merton then explained his continuous-time version of the Black-Scholes model. NOVA successfully countered the fearful reactions television viewers often have to mathematical formulae by devoting significant time to the formula itself. The show depicted Merton writing the stock call option pricing formula, while Samuelson and Miller explained

<sup>15</sup> Some print coverage of derivatives was equally alarmist. See Bernard Baumohl, *The Banks’ Nuclear Secrets*, *Time*, May 25, 1998, at 46, 50 (likening derivatives to time bombs).

<sup>16</sup> Nova’s related website <<http://www.pbs.org/wgbh/nova/transcripts/2704stockmarket.html>> provided a transcript.

the formula's importance. To illustrate the formula's impact on financial markets, NOVA depicted traders using the formula to price options and hedge risks. The program concluded its historical overview of options pricing by describing how Scholes and Merton won the Nobel Prize in economics for their option pricing models.

NOVA, unlike *60 Minutes*, emphasized the use of options for hedging purposes, rather than painting derivatives as risky vehicles used only for speculation. The commentators described options as a form of insurance that effectively controls risk and explained the risk transfer and risk allocation effects of derivatives.<sup>17</sup>

NOVA then detailed the circumstances surrounding the creation of LTCM, emphasizing the role that the founders' reputations played in attracting investors to the fund. For example, Wall Street Journal reporter Roger Lowenstein described the awe LTCM's founding members inspired on Wall Street, and other commentators explained that the most prestigious investors, banks, and institutions competed to invest in LTCM. Lowenstein noted that many institutional managers felt honored to meet and invest with Merton and Scholes, modern finance's high priests, whose models they had studied in business school.

NOVA succinctly and clearly educated viewers about both LTCM's investment strategy and the secrecy it employed in its operations. The program described LTCM's search for deviations from historical pricing relationships across global markets and emphasized LTCM's

phenomenal early returns (while showing Scholes golfing on lush courses). The show then described the Asian crisis while explaining that LTCM's many bets diverged instead of converging, causing large losses.

NOVA introduced the issue of systemic risk by having Lowenstein explain the great fear that markets would seize up if LTCM attempted to dump or unwind its huge positions. The show then revisited the financial models versus human judgment debate by describing the Federal Reserve-brokered private bailout of LTCM. A question posed by Fed Chairman Alan Greenspan – “How much dependence should be placed on financial modeling, which for all its sophistication, can get too far ahead of human judgment?” – and statements by Peter Fisher, Greenspan's deputy, indicated that models do not always work. In contrast, Scholes asserted that many things, including bad luck, could be responsible for LTCM's difficulties and that the models themselves were not necessarily to blame.

NOVA concluded that the Black-Scholes model continues to be used in complex financial markets as a powerful tool for managing risk, but that the model assumes functioning markets and is not a crystal ball. The piece ended with Samuelson observing that there always is room for judgment.

## EVALUATION

Overall, coverage of LTCM was more accurate than coverage of Orange County.<sup>18</sup> There are several possible reasons for this difference.

17 New derivatives typically have normatively indeterminate consequences. Peter H. Huang, *A Normative Analysis of New Financially Engineered Derivatives*, 73 S. Cal. L. Rev. 471, 498-500 (2000).

18 A newspaper review of the *60 Minutes* derivatives coverage was justifiably negative. G. Bruce Knecht, TV: Derivatives on *60 Minutes*, Wall St. J., Mar. 8, 1995, at A18. Another newspaper review reported that Jim Grant and Jim Rogers, who were interviewed on the *60 Minutes* program, “stress that their disapproval of derivatives and other risky moves pertains to price and suitability in specific situations, qualifications that of course didn't make the air on *60 Minutes*.” It also stated that “[a]ll repackaged interviews, including this one, omit helpful explanation.” Tim W. Ferguson, *Business World: Allure of the Contrarians*, Wall St. J., May 9, 1995, at A21.

First, *60 Minutes* and *NOVA* have different target audiences. Because *60 Minutes* is a popular show that reaches a wide audience with divergent backgrounds and educations, its producers necessarily strive for non-technical stories appealing to most viewers. Alarmist stories painting derivatives as dangerous, incomprehensible and capable of mass destruction are more likely to attract viewers' attention (and win ratings) than are more balanced stories accurately educating the public about derivatives. *NOVA*, on the other hand, is a PBS program aimed at more sophisticated viewers with an interest in the sciences.

The intervening five years between the two shows may also account for the differential coverage. Both the size of derivative markets and media coverage of derivatives increased substantially during that period. Consequently, derivatives were less foreign to most people in 2000 than they were in 1995, and the general public may have had the interest and the ability to understand more sophisticated coverage by 2000.

It is important to emphasize the dangers of one-sided, inaccurate television reporting like that in the *60 Minutes* show on derivatives. A *60 Minutes* viewer without prior knowledge of derivatives would necessarily view derivatives as risky gambles capable of wreaking havoc on both individual investors and the financial system as a whole, while providing few or no social benefits. Because these viewers can also be voters, jurors, shareholders, legislators or judges, their inaccurate, negative opinions can greatly impact derivatives use and regulation. A simple description on television of a derivative in a context familiar to most consumers (for example, a homeowner's option to prepay her mortgage without penalty and thus

reduce her total borrowing costs) would be far more educational, though certainly less entertaining.

*60 Minutes* focused exclusively on speculation and failed to mention the many beneficial uses of derivatives, including hedging for improved risk management.<sup>19</sup> Nor did it discuss "regulatory arbitrage," the use of derivatives to avoid taxes or other regulations.<sup>20</sup>

In addition, by failing to distinguish OTC (Over-the-Counter) derivatives which are not traded on exchanges from exchange-traded derivatives, *60 Minutes* implied that the dangers highlighted in the show applied equally to all derivatives, a patently false conclusion. These two markets differ in ways that are difficult to overemphasize. In fact, nearly all of the derivatives characteristics discussed in the show apply only to OTC derivatives, and not to exchange-traded derivatives. OTC derivatives represent a relatively new market that is largely unregulated. Because there is often no active market for a particular OTC derivative, there is less liquidity and less transparency in that market. Consequently, OTC derivatives end-users must perform their own pricing and marking-to-market, a fairly costly function that requires relatively sophisticated programming and investment skills. Additionally, OTC derivatives present credit-risk problems that exchange-traded derivatives do not, because the exchange clearinghouse acts as the counterparty in all exchange trades. Many OTC derivatives end-users, however, feel that the many benefits of custom-tailored derivatives outweigh these costs.

*60 Minutes'* closing segment suggesting that money lost in derivatives transactions had somehow mysteriously disappeared revealed that the show's producers failed to understand

19 Krawiec, *supra* note 3 at 1058-78; Kimberly D. Krawiec, *More Than Just "New Financial Bingo": A Risk-Based Approach to Understanding Derivatives*, 23 J. Corp. L. 1, 14-16 (1997).

20 Frank Partnoy, *Financial Derivatives and the Costs of Regulatory Arbitrage*, 22 J. Corp. L. 211, 231-35 (1997).

that derivatives investment is a zero-sum game. Every dollar one party loses trading derivatives is gained by the counterparty. The wealth lost by the Ohio municipality did not disappear; it was redistributed to a smarter or luckier counterparty.

In contrast to *60 Minutes*, NOVA's derivatives coverage was educational and raised many controversial issues. First, it raised the issue of whether LTCM had unwisely accepted too much risk, ensuring a disaster if markets did not behave as predicted, or whether the market behavior was so unforeseeable that none of the carefully constructed market risk models could anticipate its occurrence. An analysis of this issue has implications reaching far beyond the problems LTCM faced. The capital-at-risk model most market participants use to evaluate their positions' riskiness does not account for very low probability events that might disrupt capital markets, a criticism often raised by those who argue for greater regulation of derivative markets.<sup>21</sup>

NOVA also raised the issue of whether derivatives implicate systemic risk concerns. The Federal Reserve's involvement in LTCM's "bailout" was precipitated by fears that attempts to unwind LTCM's positions in an already illiquid market would cause or contribute to an illiquidity driven crash.<sup>22</sup> Although no federal funds were used in LTCM's private bailout, a

taxpayer bailout, like that of the U.S. Savings and Loan industry, implicates difficult policy questions. The whole economy may suffer if the government doesn't prevent a systemic crisis. A government bailout, however, presents a definite moral hazard problem because the benefits of more risk-seeking accrue only to private parties, while the costs are shared by society generally.<sup>23</sup>

Finally, NOVA raised important questions about professional investors' increasing reliance on mathematical models to predict market prices. If market prices reflect unpredictable human behaviors and attitudes far more than they reflect any evidence of intrinsic value, then computer-generated trading may ignore some of the most important determinants of market prices. NOVA thus concluded by raising a debate with important implications regarding the roles of specialists, market makers, floor traders, and physical exchanges generally – a debate further intensified by major technological innovations changing how capital markets operate.

## CONCLUSION

Many derivatives are not nearly as complicated as people think.<sup>24</sup> Orange County and LTCM lost billions on trading that seemed complex,

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21 The Derivative Policy Group (a voluntary organization of the largest non-bank derivatives dealers) defines capital at risk as "the maximum loss expected to be exceeded with a probability of one percent over a two-week period." Derivatives Policy Group, *A Framework For Voluntary Oversight of the OTC Derivatives Activities of Securities Firms Affiliates to Promote Confidence and Stability in Financial Markets* 28 (1995).

22 There are two basic scenarios involving systemic risk. First, the "domino effect" posits that the failure of one large financial institution may cause it to default on its obligations, causing successive failures of other institutions in a domino-like chain. Second, the illiquidity driven crash envisions a general lack of confidence in an already depressed market, leading to such illiquidity that investors can't trade.

23 John Eatwell & Lance Taylor, *Global Finance at Risk: The Case for International Regulation* 46-49 (2000).

24 Examples of straightforward derivatives in the movies include the orange juice futures in *Trading Places* and the stock options the villain in *Mission Impossible 2* wanted instead of cash from the CEO of a biotech company.

but in reality was much simpler. In contrast, television is multifarious, as many viewers know.<sup>25</sup> Of course, television programs require audiences, so popular coverage may not depict reality. The producers of *60 Minutes* strayed from reality, hoping to attract audiences with a sensationalized version of the Orange County story. In contrast, NOVA's LTCM program presented a straightforward, accurate version of

the facts, and therefore offers some hope.

Our society's key decision-makers watch television, perhaps as much as we do, and it is inevitable that they will learn about derivatives from television. We want those depictions to be accurate, and believe they can be accurate. Television, when done properly, is more than capable of keeping pace with derivatives markets. ~~GB~~

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<sup>25</sup> Contrast the quality and complexity of programs such as *Beverly Hills 90210*, *Buffy the Vampire Slayer*, *Popular*, and *The Simpsons* with, for example, *Touched by an Angel*.