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Enron and the Derivatives World

Frank Partnoy^{*1}

I am submitting testimony in response to this Committee's request that I address potential problems associated with the unregulated status of derivatives used by Enron Corporation.

I am a law professor at the University of San Diego School of Law. I teach and do research in the areas of financial market regulation, derivatives, and structured finance. During the mid-1990s, I worked on Wall Street structuring and selling financial instruments and investment vehicles similar to those used by Enron. As a lawyer, I have represented clients with problems similar to Enron's, but on a much smaller scale. I have never received any payment from Enron or from any Enron officer or employee.

I. INTRODUCTION AND OVERVIEW

Enron has been compared to Long-Term Capital Management, the Greenwich, Connecticut, hedge fund that lost \$4.6 billion on more than \$1 trillion of derivatives and was rescued in September 1998 in a private bailout engineered by the New York Federal Reserve. For the past several weeks, I have conducted my own investigation into Enron, and I believe the comparison is inapt. Yes, there are similarities in both firms' use and abuse of financial derivatives. But the scope of Enron's problems and their effects on its investors and employees are far more sweeping.

According to Enron's most recent annual report, the firm made more money trading derivatives in the year 2000 alone than Long-Term Capital Management made in its entire history. Long-Term Capital Management generated losses of a few billion dollars; by contrast, Enron not only wiped out over \$70 billion of shareholder value, but also defaulted on tens of billions of dollars of debts. Long-Term Capital Manage-

^{*} Professor of Law, University of San Diego School of Law. FRANK PARTNOY, ENRON & THE DERIVATIVES WORLD (Jan. 24, 2002), *available at* http://www.senate.gov/-gov_affairs/012402partnoy.htm (last visited Sept. 4, 2003).

¹ The original testimony has been slightly edited for inclusion in this book.

ment employed only 200 people worldwide, many of whom simply went on to start new hedge funds after the bailout, while Enron employed 20,000 people, many of whom have been fired, and many more of whom lost their life savings as Enron's stock plummeted last fall. In short, Enron makes Long-Term Capital Management look like a lemonade stand.

It will surprise many investors to learn that Enron was, at its core, a derivatives trading firm. Nothing made this more clear than the layout of Enron's extravagant new building in which the top executives' offices on the seventh floor were designed to overlook the crown jewel of Enron's empire: a cavernous derivatives trading pit on the sixth floor.

I believe there are two answers to the question of why Enron collapsed, and both involve derivatives. One relates to the use of derivatives "outside" Enron, in transactions with some now-infamous special purpose entities. The other—which has not been publicized at all—relates to the use of derivatives "inside" Enron.

What are derivatives? They are complex financial instruments whose value is based on one or more underlying variables, such as the price of a stock or the cost of natural gas. Derivatives can be traded in two ways: on regulated exchanges or in unregulated over-the-counter ("OTC") markets. My testimony involves the OTC derivatives markets, the focus of Enron's activities.

Sometimes OTC derivatives can seem too esoteric to be relevant to average investors. Even the well-publicized OTC derivatives fiascos of a few years ago—Procter & Gamble or Orange County, for example—seem ages away. But the OTC derivatives markets are too important to ignore, and are critical to understanding Enron. The size of derivatives markets typically is measured in terms of the notional values of contracts. Recent estimates of the size of the exchange-traded derivatives market, which includes all contracts traded on the major options and futures exchanges, are in the range of \$13 to \$14 trillion in notional amount. By contrast, the estimated notional amount of outstanding OTC derivatives as of year-end 2000 was \$95.2 trillion. And that estimate is most likely an understatement. In other words, OTC derivatives markets, which for the most part did not exist twenty (or, in some cases, even ten) years ago, now comprise about 90 percent of the aggregate derivatives market, with trillions of dollars at risk every day. By those measures, OTC derivatives markets are bigger than the markets for U.S. stocks.

Enron may have been just an energy company when it was created in 1985, but by the end it had become a full-blown OTC derivatives trading firm. Its OTC derivatives-related assets and liabilities increased more than five-fold during 2000 alone.

And, let me repeat, the OTC derivatives markets are largely unregulated. Enron's trading operations were not regulated, or even recently audited, by U.S. securities regulators, and the OTC derivatives it traded are not deemed securities. OTC derivatives trading is beyond the purview of organized, regulated exchanges. Thus, Enron—like many firms that trade OTC derivatives—fell into a regulatory black hole.

After 360 customers lost \$11.4 billion on derivatives during the decade ending in March 1997, the Commodity Futures Trading Commission began considering whether

to regulate OTC derivatives. But its proposals were rejected, and in December 2000 Congress made the deregulated status of derivatives clear when it passed the Commodity Futures Modernization Act. As a result, the OTC derivatives markets have become a ticking time bomb, which Congress thus far has chosen not to defuse.

Many parties are to blame for Enron's collapse. But as this Committee and others take a hard look at Enron and its officers, directors, accountants, lawyers, bankers, and analysts, Congress also should take a hard look at the current state of OTC derivatives regulation. (In the remainder of this testimony, when I refer generally to "derivatives," I am referring to these OTC derivatives markets.)

II. DERIVATIVES "OUTSIDE" ENRON

The first answer to the question of why Enron collapsed relates to derivatives deals between Enron and several of its 3,000-plus off-balance sheet subsidiaries and partnerships. The names of these byzantine financial entities—such as JEDI, Raptor, and LJM—have been widely reported.

Special purpose entities might seem odd to most investors, but they actually are very common in modern financial markets. Structured finance is a significant part of the U.S. economy, and special purpose entities are involved in most investors' lives, even if they do not realize it. For example, most credit card and mortgage payments flow through special purpose entities, and financial services firms typically use such entities as well. Some special purpose entities generate great economic benefits; others—as I will describe below—are used to manipulate a company's financial reports to inflate assets, to understate liabilities, to create false profits, and to hide losses. In this way, special purpose entities are a lot like fire: they can be used for good or ill. Special purpose entities, like derivatives, are unregulated.

The key problem at Enron involved the confluence of derivatives and special purpose entities. Enron entered into derivatives transactions with these entities to shield volatile assets from quarterly financial reporting and to inflate artificially the value of certain Enron assets. These derivatives included price swap derivatives (described below), as well as call and put options.

Specifically, Enron used derivatives and special purpose vehicles to manipulate its financial statements in three ways. First, it hid speculator losses it suffered on technology stocks. Second, it hid huge debts incurred to finance unprofitable new businesses, including retail energy services for new customers. Third, it inflated the value of other troubled businesses, including its new ventures in fiber-optic bandwidth. Although Enron was founded as an energy company, many of these derivatives transactions did not involve energy at all.

A. Using Derivatives to Hide Losses on Technology Stocks

First, Enron hid hundreds of millions of dollars of losses on its speculative investments in various technology-oriented firms, such as Rhythms NetConnections, Inc., a

start-up telecommunications company. A subsidiary of Enron (along with other investors such as Microsoft and Stanford University) invested a relatively small amount of venture capital, on the order of \$10 million, in Rhythms NetConnections. Enron also invested in other technology companies.

Rhythms NetConnections issued stock to the public in an initial public offering on April 6, 1999, during the heyday of the Internet boom, at a price of about \$70 per share. Enron's stake was suddenly worth hundreds of millions of dollars. Enron's other venture capital investments in technology companies also rocketed at first, alongside the widespread run-up in the value of dot.com stocks. As is typical in IPOs, Enron was prohibited from selling its stock for six months.

Next, Enron entered into a series of transactions with a special purpose entity—apparently a limited partnership called Raptor, one of a several of similarly-named entities created by Enron, which was owned by another Enron special purpose entity called LJM1—in which Enron essentially exchanged its shares in these technology companies for a loan, ultimately, from Raptor. Raptor then issued its own securities to investors and held the cash proceeds from those investors.

The critical piece of this puzzle, the element that made it all work, was a derivatives transaction—called a “price swap derivative”—between Enron and Raptor. In this price swap, Enron committed to give stock to Raptor if Raptor's assets declined in value. The more Raptor's assets declined, the more of its own stock Enron was required to post. Because Enron had committed to maintain Raptor's value at \$1.2 billion, if Enron's stock declined in value, Enron would need to give Raptor even more stock. This derivatives transaction carried the risk of diluting the ownership of Enron's shareholders if either Enron's stock or the technology stocks Raptor held declined in price. Enron also apparently entered into options transactions with Raptor and/or LJM1.

Because the securities Raptor issued were backed by Enron's promise to deliver more shares, investors in Raptor essentially were buying Enron's debt, not the stock of a start-up telecommunications company. In fact, the performance of Rhythms NetConnections was irrelevant to these investors in Raptor. Enron got the best of both worlds in accounting terms: it recognized its gain on the technology stocks by recognizing the value of the Raptor loan right away, and it avoided recognizing on an interim basis any future losses on the technology stocks, were such losses to occur.

It is painfully obvious how this story ends: the dot.com bubble burst and by 2001 shares of Rhythms NetConnections were worthless. Enron had to deliver more shares to “make whole” the investors in Raptor and other similar deals. In all, Enron had derivative instruments on 54.8 million shares of Enron common stock at an average price of \$67.92 per share, or \$3.7 billion in all. In other words, at the start of these deals, Enron's obligation amounted to seven percent of all of its outstanding shares. As Enron's share price declined, that obligation increased and Enron's shareholders were substantially diluted. And here is the key point: even as Raptor's assets and Enron's shares declined in value, Enron did not reflect those declines in its quarterly financial statements.

B. Using Derivatives to Hide Debts Incurred by Unprofitable Businesses

A second example involved Enron using derivatives with two special purpose entities to hide huge debts incurred to finance unprofitable new businesses. Essentially, some very complicated and confusing accounting rules allowed Enron to avoid disclosing certain assets and liabilities.

These two special purpose entities were Joint Energy Development Investments Limited Partnership (“JEDI”) and Chewco Investments, L.P. (“Chewco”). Enron owned only 50 percent of JEDI, and therefore—under then-applicable accounting rules—could (and did) report JEDI as an unconsolidated equity affiliate. If Enron had owned 51 percent of JEDI, accounting rules would have required Enron to include all of JEDI’s financial results in its financial statements. But at 50 percent, Enron did not have to.

JEDI, in turn, was subject to the same rules. JEDI could issue equity and debt securities, and as long as there was an outside investor with at least 50 percent of the equity—in other words, with real economic exposure to the risks of Chewco—JEDI would not need to consolidate Chewco.

One way to minimize the applicability of this “50 percent rule” would be for a company to create a special purpose entity with mostly debt and only a tiny sliver of equity for which the company easily could find an outside investor. Such a transaction would be an obvious sham, and one might expect to find a pronouncement by the accounting regulators that it would not conform to Generally Acceptable Accounting Principles. Unfortunately, there are no such accounting regulators, and there was no such pronouncement. The Financial Accounting Standards Board, a private entity that sets most accounting rules and advises the Securities and Exchange Commission, had not given a satisfactory answer to the key accounting question: what constitutes sufficient capital from an independent source, so that a special purpose entity need not be consolidated?

Since 1982, Financial Accounting Standard No. 57, Related Party Disclosures, has contained a general requirement that companies disclose the nature of relationships they have with related parties, and describe transactions with them. Accountants might debate whether Enron’s impenetrable footnote disclosure satisfies FAS No. 57, but clearly the disclosures currently made are not optimal. In 1998, FASB adopted FAS No. 133, which includes new accounting rules for derivatives. Now at 800-plus pages, FAS No. 133’s instructions are an incredibly detailed—but ultimately unhelpful—attempt to rationalize other accounting rules for derivatives.

As a result, even after two decades, there is no clear answer to the question about disclosures on related parties. Instead, some early guidance (developed in the context of leases) has been grafted onto modern special purpose entities. This guidance is a 1991 letter from the Acting Chief Accountant of the SEC in 1991, stating:

The initial substantive residual equity investment should be comparable to that expected for a substantive business involved in similar [leasing] transactions with similar risks and rewards. The SEC staff understands from

discussions with Working Group members that those members believe that 3 percent is the minimum acceptable investment. The SEC staff believes a greater investment may be necessary depending on the facts and circumstances, including the credit risk associated with the lessee and the market risk factors associated with the leased property.

Based on this letter, and on opinions from auditors and lawyers, companies started pushing debt off their balance sheets into unconsolidated special purpose entities so long as (1) the company did not have more than 50 percent of the equity of the special purpose entity, and (2) the equity of the special purpose entity was at least 3 percent of its total capital. As more companies have done such deals, more debt has moved off balance-sheet, to the point that, today, it is difficult for investors to know if they have an accurate picture of a company's debts. Even if Enron had not tripped up and violated the letter of these rules, it still would have been able to borrow 97 percent of the capital of its special purpose entities without recognizing those debts on its balance sheet.

Transactions designed to exploit these accounting rules have polluted the financial statements of many U.S. companies. Enron is not alone. For example, Kmart Corporation—which was on the verge of bankruptcy as of January 21, 2002, and clearly was affected by Enron's collapse—held 49 percent interests in several unconsolidated equity affiliates. I believe this Committee should take a hard look at these widespread practices.

In short, derivatives enabled Enron to avoid consolidating these special purpose entities. Enron entered into a derivatives transaction with Chewco similar to the one it entered into with Raptor, effectively guaranteeing repayment to Chewco's outside investor. (The investor's sliver of equity ownership in Chewco was not really equity from an economic perspective, because the investor had nothing—other than Enron's credit—at risk.) In its financial statements, Enron took the position that, although it provided guarantees to unconsolidated subsidiaries, those guarantees did not have a readily determinable fair value, and management did not consider it likely that Enron would be required to perform or otherwise incur losses associated with guarantees. That position enabled Enron to avoid recording its guarantees. Even the guarantees listed in the footnotes were recorded at only 10 percent of their nominal value. (At least this amount is closer to the truth than the amount listed as debt for unconsolidated subsidiaries: zero.)

Apparently, Arthur Andersen either did not discover this derivatives transaction or decided that the transaction did not require a finding that Enron controlled Chewco. In any event, the Enron derivatives transaction meant that Enron—not the 50 percent “investor” in Chewco—had the real exposure to Chewco's assets. The ownership daisy chain unraveled once Enron was deemed to own Chewco. JEDI was forced to consolidate Chewco, and Enron was forced to consolidate both limited partnerships—and all of their losses—in its financial statements.

All of this complicated analysis will seem absurd to the average investor. If the assets and liabilities are Enron's in economic terms, shouldn't they be reported that way in accounting terms? The answer, of course, is yes. Unfortunately, current rules allow

companies to employ derivatives and special purpose entities to make accounting standards diverge from economic reality. Enron used financial engineering as a kind of plastic surgery, to make itself look better than it really was. Many other companies do the same.

Of course, it is possible to detect the flaws in plastic surgery, or financial engineering, if you look hard enough and in the right places. In 2000, Enron disclosed about \$2.1 billion of such derivatives transactions with related entities, and recognized gains of about \$500 million related to those transactions. The disclosure related to these staggering numbers is less than conspicuous, buried at page 48, footnote 16 of Enron's annual report, deep in the related party disclosures for which Enron was notorious. Still, the disclosure is there. A few sophisticated analysts understood Enron's finances based on that disclosure; they bet against Enron's stock. Other securities analysts likely understood the disclosures, but apparently chose not to speak for fear of losing Enron's banking business. An argument even can be made—although not a good one, in my view—that Enron satisfied its disclosure obligations with its opaque language. In any event, the result of Enron's method of disclosure was that investors did not get a full picture of the firm's finances.

Enron is not the only example of such abuse; accounting subterfuge using derivatives is widespread. I believe Congress should seriously consider legislation explicitly requiring that financial statements describe the economic reality of a company's transactions. Such a broad standard—backed by rigorous enforcement—would go a long way towards eradicating the schemes companies currently use to dress up their financial statements.

Enron's risk management manual stated the following: "Reported earnings follow the rules and principles of accounting. The results do not always create measures consistent with underlying economics. However, corporate management's performance is generally measured by accounting income, not underlying economics. Risk management strategies are therefore directed at accounting rather than economic performance." This alarming statement is representative of the accounting-driven focus of U.S. managers generally, who all too frequently have little interest in maintaining controls to monitor their firm's economic realities.

C. Using Derivatives to Inflate the Value of Troubled Businesses

A third example is even more troubling. It appears that Enron inflated the value of certain assets it held by selling a small portion of those assets to a special purpose entity at an inflated price, and then revaluing the lion's share of those assets it still held at that higher price.

Consider the following sentence disclosed from the infamous footnote 16 of Enron's 2000 annual report, on page 49: "In 2000, Enron sold a portion of its dark fiber inventory to the Related Party in exchange for \$30 million cash and a \$70 million note receivable that was subsequently repaid. Enron recognized gross margin of \$67 million on the sale." What does this sentence mean?

It is possible to understand the sentence today, but only after reading a January 7, 2002, article about the sale by Daniel Fisher of *Forbes* magazine, together with an August 2001 memorandum describing the transaction (and others) from one Enron employee, Sherron Watkins, to Enron Chairman Kenneth Lay.

Here is my best understanding of what this sentence means.

First, the “Related Party” is LJM2, an Enron partnership run by Enron’s Chief Financial Officer, Andrew Fastow. (Fastow reportedly received \$30 million from the LJM1 and LJM2 partnerships pursuant to compensation arrangements Enron’s board of directors approved.)

Second, dark fiber refers to a type of bandwidth Enron traded as part of its broadband business. In this business, Enron traded the right to transmit data through various fiber-optic cables, more than 40 million miles of which various Internet-related companies had installed in the United States. Only a small percentage of these cables were “lit”—meaning they could transmit the light waves required to carry Internet data; the vast majority of cables were still awaiting upgrades and were “dark.” As one might expect, the rights to transmit over dark fiber are very difficult to value.

Third, Enron sold dark fiber it apparently valued at only \$33 million for triple that value: \$100 million in all—\$30 million in cash plus \$70 million in a note receivable. It appears that this sale was at an inflated price, thereby enabling Enron to record a \$67 million profit on that trade. LJM2 apparently obtained cash from investors by issuing securities and used some of these proceeds to repay the note receivable issued to Enron.

What the sentence in footnote 16 does not make plain is that the investor in LJM2 was persuaded to pay what appears to be an inflated price, because Enron entered into a “make whole” derivatives contract with LJM2 (of the same type it used with Raptor). Essentially, the investor was buying Enron’s debt. The investor was willing to buy securities in LJM2, because if the dark fiber declined in price—as it almost certainly would, from its inflated value—Enron would make the investor whole.

In these transactions, Enron retained the economic risk associated with the dark fiber. Yet as the value of dark fiber plunged during 2000, Enron nevertheless was able to record a gain on its sale, and avoid recognizing any losses on assets held by LJM2, which was an unconsolidated affiliate of Enron, just like JEDI.

As if all of this were not complicated enough, Enron’s sale of dark fiber to LJM2 also magically generated an inflated price, which Enron then could use in valuing any remaining dark fiber it held. The third-party investor in LJM2 had, in a sense, “validated” the value of the dark fiber at the higher price, and Enron then arguably could use that inflated price in valuing other dark fiber assets it held. I do not have any direct knowledge of this, although public reports and Sherron Watkins’s letter indicate that this is probably what happened.

For example, suppose Enron started with ten units of dark fiber, worth \$100, and sold one to a special purpose entity for \$20—double its actual value—using the above scheme. Now, Enron had an argument that each of its remaining nine units of dark fiber also were worth \$20 each, for a total of \$180. Enron then could revalue its remaining nine units of dark fiber at a total of \$180. If the assets used in the transac-

tion were difficult to value—as dark fiber clearly was—Enron’s inflated valuation might not generate much suspicion, at least initially. But ultimately the valuations would be indefensible, and Enron would need to recognize the associated losses.

It is an open question for this Committee and others whether this transaction was unique, or whether Enron engaged in other, similar deals. It seems likely that the dark fiber deal was not the only one of its kind. There are many sentences in footnote 16 regarding other related party transactions.

D. The “Gatekeepers”

These are but three examples of how Enron’s derivatives dealings with outside parties resulted in material information not being reflected in market prices. There are others, many within JEDI alone. I have attempted to summarize this information for the Committee. Clearly it is important that investigators question the Enron employees who were directly involved in these transactions to get a sense of whether my summaries are complete.

Moreover, a thorough inquiry into these dealings also should include the major financial market “gatekeepers” involved with Enron: accounting firms, banks, law firms, and credit rating agencies. Employees of these firms are likely to have knowledge of these transactions. Moreover, these firms have a responsibility to come forward with information relevant to these transactions. They benefit directly and indirectly from the existence of U.S. securities regulation, which in many instances both forces companies to use the services of gatekeepers and protects gatekeepers from liability.

Recent cases against accounting firms—including Arthur Andersen—are eroding that protection, but the other gatekeepers remain well insulated. Gatekeepers are kept honest—at least in theory—by the threat of legal liability, but this threat is virtually non-existent for some gatekeepers. The capital markets would be more efficient if companies were not required by law to use particular gatekeepers (which only gives those firms market power), and if gatekeepers were subject to a credible threat of liability for their involvement in fraudulent transactions. Congress should consider expanding the scope of securities fraud liability by making it clear that these gatekeepers will be liable for assisting companies in transactions designed to distort the economic reality of financial statements.

With respect to Enron, all of these gatekeepers have questions to answer about the money they received, the quality of their work, and the extent of their conflicts of interest. It has been reported that Enron paid \$52 million in 2000 to its audit firm, Arthur Andersen, the majority of which was for non-audit related consulting services, yet Arthur Andersen failed to spot many of Enron’s losses. It also seems that at least one of the other “Big 5” accounting firms was involved in at least one of Enron’s special purpose entities.

Enron also paid several hundred million dollars in fees to investment and commercial banks for work on various financial aspects of its business, including fees for derivatives transactions, and yet none of those firms pointed out to investors any of the

derivatives problems at Enron. Instead, as late as October 2001, sixteen of seventeen securities analysts covering Enron rated it a “strong buy” or “buy.”

Enron paid substantial fees to its outside law firm, which previously had employed Enron’s general counsel, yet that firm failed to correct or disclose the problems related to derivatives and special purpose entities. Other law firms also may have been involved in these transactions; if so, they should be questioned, too.

Finally, and perhaps most importantly, the three major credit rating agencies—Moody’s, Standard & Poor’s, and Fitch/IBCA—received substantial, but as yet undisclosed, fees from Enron. Yet just weeks prior to Enron’s bankruptcy filing—after most of the negative news was out and Enron’s stock was trading at just \$3 per share—all three agencies still gave investment grade ratings to Enron’s debt. The credit rating agencies in particular have benefited greatly from a web of legal rules that essentially requires securities issuers to obtain ratings from them (and them only), and at the same time protects those agencies from outside competition and liability under the securities laws. They are at least partially to blame for the Enron mess.

An investment-grade credit rating was necessary to make Enron’s special purpose entities work, and Enron lived on the cusp of investment grade. During 2001, it was rated just above the lowest investment-grade rating by all three agencies: BBB+ by Standard & Poor’s and Fitch IBCA, and Baa1 by Moody’s. Just before Enron’s bankruptcy, all three rating agencies lowered Enron’s rating two notches, to the lowest investment grade rating. Enron noted in its most recent annual report that its “continued investment grade status is critical to the success of its wholesale business as well as its ability to maintain adequate liquidity.” Many of Enron’s debt obligations were triggered by a credit ratings downgrade; some of those obligations had been scheduled to mature in December 2001. The importance of credit ratings at Enron and the timing of Enron’s bankruptcy filing are not coincidences; the credit rating agencies have some explaining to do.

Derivatives based on credit ratings—called credit derivatives—are a booming business and they raise serious systemic concerns. The rating agencies seem to know this. Even Moody’s appears worried, and recently asked several securities firms for more detail about their dealings in these instruments. It is particularly chilling that not even Moody’s—the most sophisticated of the three credit rating agencies—knows much about these derivatives deals.

III. DERIVATIVES “INSIDE” ENRON

The derivatives problems at Enron went much deeper than the use of special purpose entities with outside investors. If Enron had been making money in what it represented as its core businesses, and had used derivatives simply to “dress up” its financial statements, this Committee probably would not be meeting here today. Even after Enron restated its financial statements on November 8, 2001, it could have clarified its accounting treatment, consolidated its debts, and assured the various analysts that it was a viable entity. But it could not. Why not?

This question leads me to the second explanation of Enron's collapse: most of what Enron represented as its core businesses were not making money. Recall that Enron began as an energy firm. Over time, Enron shifted its focus from the bricks-and-mortar energy business to the trading of derivatives. As this shift occurred, it appears that some of its employees began lying systematically about the profits and losses of Enron's derivatives trading operations. Simply put, Enron's reported earnings from derivatives seem to be more imagined than real. Enron's derivatives trading was profitable, but not in the way an investor might expect based on the firm's financial statements. Instead, some Enron employees seem to have misstated systematically their profits and losses in order to make their trading businesses appear less volatile than they were.

First, a caveat. During the past few weeks, I have been gathering information about Enron's derivatives operations, and I have learned many disturbing things. Obviously, I cannot testify first-hand to any of these matters. I have never been on Enron's trading floor, and I have never been involved in Enron's business. I cannot offer fact testimony as to any of these matters.

Nonetheless, I strongly believe the information I have gathered is credible. It is from many sources, including written information, e-mail correspondence, and telephone interviews. Congressional investigators should be able to confirm all of these facts. In any event, even if only a fraction of the information in this section of my testimony proves to be correct, it will be very troubling indeed.

In a nutshell, it appears that some Enron employees used dummy accounts and rigged valuation methodologies to create false profit and loss entries for the derivatives Enron traded. These false entries were systematic and occurred over several years, beginning as early as 1997. They included not only the more esoteric financial instruments Enron began trading recently—such as fiber-optic bandwidth and weather derivatives—but also Enron's very profitable trading operations in natural gas derivatives.

Enron derivatives traders faced intense pressure to meet quarterly earnings targets imposed directly by management and indirectly by securities analysts who covered Enron. To ensure that Enron met these estimates, some traders apparently hid losses and understated profits. Traders apparently manipulated the reporting of their real economic profits and losses in an attempt to fit the imagined accounting profits and losses that drove Enron management.

A. Using "Prudency" Reserves

Enron's derivatives trading operations kept records of the traders' profits and losses. For each trade, a trader would report either a profit or a loss, typically in spreadsheet format. These profit and loss reports were designed to reflect economic reality. Frequently, they did not.

Instead of recording the entire profit for a trade in one column, some traders reportedly split the profit from a trade into two columns. The first column reflected the portion of the actual profits the trader intended to add to Enron's current financial

statements. The second column, ironically labeled the “prudence” reserve, included the remainder.

To understand this concept of a prudence reserve, suppose a derivatives trader earned a profit of \$10 million. Of that \$10 million, the trader might record \$9 million as profit today, and enter \$1 million into “prudence.” An average deal would have prudence reserve of up to \$1 million, and all of the “prudence” entries might add up to \$10 to \$15 million.

Enron’s prudence reserves did not depict economic reality, nor could they have been intended to do so. Instead, “prudence” was merely a slush fund that could be used to smooth out profits and losses over time. The portion of profits recorded as “prudence” could be used to offset any future losses.

In essence, the traders were saving for a rainy day. Prudence reserves would have been especially effective for long-maturity derivatives contracts, because it was more difficult to determine a precise valuation as of a particular date for those contracts, and any “prudence” cushion would have protected the traders from future losses for several years going forward.

As luck would have it, some of the prudence reserves turned out to be quite prudent. In one quarter, some derivatives traders needed so much accounting profit to meet their targets that they wiped out all of their “prudence” accounts.

Saving for a rainy day is not necessarily a bad idea, and it seems possible that derivatives traders at Enron did not believe they were doing anything wrong. But prudence accounts are far from an accepted business practice. A trader who used a prudence account at a major Wall Street firm would be seriously disciplined, or perhaps fired. To the extent Enron was smoothing its income using prudence entries, it was misstating the volatility and current valuation of its trading businesses, and misleading its investors. Indeed, such fraudulent practices would have thwarted the very purpose of Enron’s financial statements: to give investors an accurate picture of a firm’s risks.

B. Mismatching Forward Curves

Not all of the misreporting of derivatives positions at Enron was as brazen as “prudence.” Another way derivatives frequently are used to misstate profits and losses is by mismatching forward curves. It appears that Enron traders did this, too.

A forward curve is a list of forward rates for a range of maturities. In simple terms, a forward rate is the rate at which a person can buy something in the future.

For example, natural gas forward contracts trade on the New York Mercantile Exchange (“NYMEX”). A trader can commit to buy a particular type of natural gas to be delivered in a few weeks, months, or even years. The rate at which a trader can buy natural gas in one year is the one-year forward rate. The rate at which a trader can buy natural gas in ten years is the ten-year forward rate. The forward curve for a particular natural gas contract is simply the list of forward rates for all maturities.

Forward curves are crucial to any derivatives trading operation because they determine the value of a derivatives contract today. Like any firm involved in trading de-

derivatives, Enron had risk management and valuation systems that used forward curves to generate profit and loss statements.

It appears that Enron traders selectively mismarked their forward curves, typically in order to hide losses. Traders are compensated based on their profits, so if a trader can hide losses by mismarking forward curves, he or she is likely to receive a larger bonus.

These losses apparently ranged in the tens of millions of dollars for certain markets. At times, a trader would manually input a forward curve that was different from the market. For more complex deals, a trader would use a spreadsheet model of the trade for valuation purposes, and tweak the assumptions in the model to make a transaction appear more or less valuable. Spreadsheet models are especially susceptible to mismarking.

Certain derivatives contracts were more susceptible to mismarking than others. A trader would be unlikely to mismark contracts that were publicly traded—such as the natural gas contracts traded on NYMEX—because quotations of the values of those contracts are publicly available. However, the NYMEX forward curve has a maturity of only six years; accordingly, a trader would be more likely to mismark a ten-year natural gas forward rate.

At Enron, forward curves apparently remained mismarked for as long as three years. In more esoteric areas, where markets were not as liquid, traders apparently were even more aggressive. One trader who already had recorded a substantial profit for the year, and believed any additional profit would not increase his bonus much, reportedly reduced his recorded profits for one year, so he could push them forward into the next year, which he wasn't yet certain would be as profitable. This strategy would have resembled the "prudence" accounts described earlier.

C. Warning Signs

Why didn't any of the "gatekeepers" tell investors that Enron was so risky? There were numerous warning signs related to Enron's derivatives trading. Yet the gatekeepers either failed utterly to spot those signs, or spotted those signs and decided not to warn investors about them. Either way, the gatekeepers failed to do their job. This was so even though there have been several recent and high-profile cases involving internal misreporting of derivatives.

Enron disclosed that it used "value at risk" ("VAR") methodologies that captured a 95 percent confidence interval for a one-day holding period, and therefore did not disclose worst-case scenarios for Enron's trading operations. Enron said it relied on "the professional judgment of experienced business and risk managers" to assess these worst-case scenarios (which, apparently, Enron ultimately encountered). Enron reported only high and low month-end values for its trading, and therefore had incentives to smooth its profits and losses at month-end. Because Enron did not report its maximum VAR during the year, investors had no way of knowing just how much risk Enron was taking.

Even the reported VAR figures are remarkable. Enron reported VAR for what it called its "commodity price" risk—including natural gas derivatives trading—of \$66 million, more than triple the 1999 value. Enron reported VAR for its equity trading of

\$59 million, more than double the 1999 value. A VAR of \$66 million meant that Enron could expect, based on historical averages, that on five percent of all trading days (on average, twelve business days during the year) its “commodity” derivatives trading operations alone would gain or lose \$66 million, a not trivial sum.

Moreover, because Enron’s derivatives frequently had long maturities—maximum terms ranged from six to twenty-nine years—there often were not prices from liquid markets to use as benchmarks. For those long-dated derivatives, professional judgment was especially important. For a simple instrument, Enron might calculate the discounted present value of cash flows using Enron’s borrowing rates. But more complex instruments required more complex methodologies. For example, Enron completed over 5,000 weather derivatives deals, with a notional value of more than \$4.5 billion, and many of those deals could not be valued without a healthy dose of professional judgment. The same was true of Enron’s trading of fiber-optic bandwidth.

And finally there was the following flashing red light in Enron’s most recent annual report: “In 2000, the value at risk model utilized for equity trading market risk was refined to more closely correlate with the valuation methodologies used for merchant activities.” Enron’s financial statements do not describe these refinements, and their effects, but given the failure of the risk and valuation models even at a sophisticated hedge fund such as Long-Term Capital Management—which employed “rocket scientists” and Nobel laureates to design various sophisticated computer models—there should have been reason for concern when Enron spoke of “refining” its own models.

It was Arthur Andersen’s responsibility not only to audit Enron’s financial statements, but also to assess the adequacy of Enron management’s internal controls on derivatives trading. When Arthur Andersen signed Enron’s 2000 annual report, it expressed approval in general terms of Enron’s system of internal controls during 1998 through 2000.

Yet it does not appear that Andersen systematically and independently verified Enron’s valuations of certain complex trades, or even of its forward curves. Andersen apparently examined day-to-day changes in these values, as reported by traders, and checked to see if each daily change was recorded accurately. But this Committee—and others investigating Enron—should inquire about whether Andersen did anything more than sporadically check Enron’s forward curves.

Even when the relevant risk information is contained in Enron’s financial statements, it is unclear whether Andersen adequately considered this information in opining that Enron management’s internal controls were adequate. To the extent Andersen alleges—as I understand many accounting firms do—that their control opinion does not cover all types of control failures and necessarily is based on management’s “assertions,” it is worth noting that the very information Andersen audited raised substantial questions about potential control problems at Enron. In other words, Andersen has been hoisted by its own petard.

But Andersen was not alone in failing to heed these warning signs. Securities analysts and credit rating agencies arguably should have spotted them, too. Why were so many of these firms giving Enron favorable ratings, when publicly available informa-

tion indicated that there were reasons for worry? Did these firms look the other way because they were subject to conflicts of interest? Individual investors rely on these institutions to interpret the detailed footnote disclosures in Enron's reports, and those institutions have failed utterly. The investigation into Andersen so far has generated a great deal of detail about that firm's approach to auditing Enron, but the same questions should be asked of the other gatekeepers, too. Specifically, this Committee should ask for and closely examine all of the analyst reports on Enron from the relevant financial services firms and credit rating agencies.

Finally, to clarify this point, consider how much Enron's businesses had changed during its last years. Andersen's most recent audit took place during 2000, when Enron's derivatives-related assets increased from \$2.2 billion to \$12 billion, and Enron's derivatives-related liabilities increased from \$1.8 billion to \$10.5 billion. These numbers are staggering. Most of this growth was due to increased trading through EnronOnline. But EnronOnline's assets and revenues were qualitatively different from Enron's other derivatives trading. Whereas Enron's derivatives operations included speculative positions in various contracts, EnronOnline's operations simply matched buyers and sellers. The "revenues" associated with EnronOnline arguably do not belong in Enron's financial statements. In any event, the exponential increase in the volume of trading through EnronOnline did not generate substantial profits for Enron.

Enron's aggressive additions to revenues meant that it was the "seventh-largest U.S. company" in title only. In reality, Enron was a much smaller operation, whose primary money-making business—a substantial and speculative derivatives trading operation—covered up poor performance in Enron's other, smaller businesses, including EnronOnline. Enron's public disclosures show that, during the past three years, the firm was not making money on its non-derivatives businesses. Gross margins from these businesses were essentially zero from 1998 through 2000.

To see this, consider the table below, which sets forth Enron's income statement separated into its non-derivatives and derivatives businesses. I put together this table based on the numbers in Enron's 2000 income statement, after learning from the footnote 1, page 36, that the meaning of the "Other revenues" entry on Enron's income statement is—as far as I can tell—essentially "Gain (loss) from derivatives":

Enron's Income from Derivatives and Non-Derivative Businesses (in millions of dollars)

	2000	1999	1998
Non-derivatives revenues	93,557	34,774	27,215
Non-derivatives expenses	94,517	34,761	26,381
Non-derivatives gross margin	(960)	13	834
Gain (loss) from derivatives	7,232	5,338	4,045
Other expenses	(4,319)	(4,549)	(3,501)
Operating income	1,953	802	1,378

This table demonstrates four key facts. First, the recent and dramatic increase in Enron's overall non-derivatives revenues—the statistic that supposedly made Enron the seventh-largest U.S. company—was offset by an increase in non-derivatives ex-

penses. The increase in revenues reflected in the first line of the chart was substantially from EnronOnline, and did not help Enron's bottom line, because it included an increase in expenses reflected in the second line of the chart. Although Enron itself apparently was the counterparty to all of the trades, EnronOnline simply matched buyers ("revenue") with sellers ("expenses"). Indeed, as non-derivatives revenues more than tripled, non-derivatives expenses increased even more.

Second, Enron's non-derivatives businesses were not performing well in 1998 and were deteriorating through 2000. The third row, "Non-derivatives gross margin," is the difference between non-derivatives revenues and non-derivatives expenses. The downward trajectory of Enron's non-derivatives gross margin shows, in a general sense, that Enron's non-derivatives businesses made some money in 1998, broke even in 1999, and actually lost money in 2000.

Third, Enron's positive reported operating income (the last row) was due primarily to gains from derivatives (the fourth row). (Enron—like many firms—shied from using the word "derivatives" and substituted the euphemism "Price Risk Management.") Excluding the gains from derivatives, Enron would have reported substantially negative operating income for all three years.

Fourth, Enron's gains from derivatives were very substantial. Enron gained more than \$16 billion from these activities in three years. To place the numbers in perspective, these gains were roughly comparable to the annual net revenue for all trading activities (including stocks, bonds, and derivatives) at the premier investment firm, Goldman Sachs & Co., during the same periods, a time in which Goldman Sachs first issued shares to the public.

The key difference between Enron and Goldman Sachs is that Goldman Sachs seems to have been up front with investors about the volatility of its trading operations. In contrast, Enron officials represented that it was not a trading firm, and that derivatives were used for hedging purposes. As a result, Enron's stock traded at much higher multiples of earnings than more candid trading-oriented firms.

The size and scope of Enron's derivatives trading operations remain unclear. Enron reported gains from derivatives of \$7.2 billion in 2000, and reported notional amounts of derivatives contracts as of December 31, 2000, of only \$21.6 billion. Either Enron was generating 33 percent annual returns from derivatives (indicating that the underlying contracts were very risky), or Enron actually had large positions and reduced the notional values of its outstanding derivatives contracts at year-end for cosmetic purposes. Neither conclusion appears in Enron's financial statements or its management's discussion and analysis ("MD&A") section.

IV. CONCLUSION

How did Enron lose so much money? That question has dumbfounded investors and experts in recent months. But the basic answer is now apparent: Enron was a derivatives trading firm; it made billions trading derivatives, created through use of reporting tricks such as mismarking forward curves and managing prudence reserves,

while it lost billions on virtually everything else it did, including projects in fiber-optic bandwidth, retail gas and power, water systems, and even technology stocks. Enron used its expertise in derivatives to hide these losses. For most people, the fact that Enron had transformed itself from an energy company into a derivatives trading firm is a surprise.

Enron is to blame for much of this, of course. The temptations associated with derivatives have proved too great for many companies, and Enron is no exception. The conflicts of interest among Enron's officers have been widely reported. Nevertheless, it remains unclear how much top officials knew about the various misdeeds at Enron. They should and will be asked. At least some officers must have been aware of how deeply derivatives penetrated Enron's businesses; Enron even distributed thick multi-volume Derivatives Training Manuals to new employees. (The Committee should ask to see these manuals.)

Enron's directors likely have some regrets. Enron's Audit Committee in particular failed to uncover a range of external and internal financial gimmickry. However, it remains to be seen how much of the inner workings at Enron were hidden from the outside directors; some directors may very well have learned a great deal from recent media accounts, or even perhaps from this testimony. Enron's general counsel, on the other hand, will have some questions to answer.

But too much focus on Enron misses the mark. As long as ownership of companies is separated from their control—and in the U.S. securities market it almost always will be—managers of companies will have incentives to be aggressive in reporting financial data. The securities laws recognize this fact of life, and create and subsidize “gatekeeper” institutions to monitor this conflict between managers and shareholders.

The collapse of Enron makes it plain that the key gatekeeper institutions that support our system of market capitalism have failed. The institutions sharing the blame include auditors, law firms, banks, securities analysts, independent directors, and credit rating agencies.

All of the facts I have described in my testimony were available to the gatekeepers. I obtained this information in a matter of weeks by sitting at a computer in my office in San Diego, and by picking up a telephone. The gatekeepers' failure to discover this information, and to communicate it effectively to investors, is simply inexcusable.

The difficult question is what to do about the gatekeepers. They occupy a special place in securities regulation, and receive great benefits as a result. Employees at gatekeeper firms are among the most highly-paid people in the world. They have access to superior information and supposedly have greater expertise than average investors at deciphering that information. Yet, with respect to Enron, the gatekeepers clearly did not do their job.

One potential answer is to eliminate the legal requirements that companies use particular gatekeepers (especially credit rating agencies), while expanding the scope of securities fraud liability and enforcement to make it clear that all gatekeepers will be liable for assisting companies in transactions designed to distort the economic reality

of financial statements. A good starting point before considering such legislation would be to call the key gatekeeper employees to testify.

Congress also must decide whether, after ten years of deregulation, the post-Enron derivatives markets should remain exempt from the regulation that covers all other investment contracts. In my view, the answer is no.

A headline in Enron's 2000 annual report states, "In Volatile Markets, Everything Changes But Us." Sadly, Enron got it wrong. In volatile markets, everything changes, and the laws should change, too. It is time for Congress to act to ensure that this motto does not apply to U.S. financial market regulation.