

Forensic Finance: ENRON and Others

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In finance, as in pathology, we can learn more from failure than from success. This lecture examines three famous financial failures, Metallgesellschaft's oil futures business, LTCM and related hedge fund failures, and the current travails of ENRON, and performs a post mortem on each to see what can be learned. Not surprisingly, the cause of death was similar in each case, or, to put it more familiarly, history always repeats itself. [JEL Code: G30; G38]

Introduction

I used to tell people I was a financial engineer, until I realized that that was as misleading as a coroner saying he was a doctor. After the Hunt brothers of Texas, Bunker and Herbert, had their comeuppance in the silver markets of 1979 and 1980, I was retained as an advisor to help sort out the mess. In 1987 I worked with some large real estate funds that were experiencing the consequences of the decline in the U.S. real estate market and the fallout from the S&L crisis. In the early 90's I analysed mortgage portfolios that had exploded in that volatile market. Later in the decade I advised Metallgesellschaft (MG) on the problems they had

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with the oil markets. I was there when the hedge funds exploded in the summer of 1998, and now I am learning about ENRON, TYCO, WORLDCOM and the latest corporate casualties.

I'm not a financial engineer; I'm a financial pathologist. I do financial autopsies and I am a specialist in forensic finance - hence the title of this Lecture. The reason pathologists study the dead, though, is not so much morbid curiosity as it is that from what we learn, we can help the living. With a disease or an accident we want to know the cause, with the hope of developing a cure or preventing it from happening in the future. For healthy and successful ventures, it is nearly impossible to really know why they succeeded; there are a thousand claimants to the success. We focus on forensic finance because failures, especially mega failures, shout their shortcomings.

In the U.S. some of the most successful television shows are about crime scene investigators and their cases. These are usually gruesome murders, and the crime scene team solves them by examining the bite marks on the corpse and deducing that the murderer was a fifty year old, Italian, left handed ex tennis player with a slight limp. In this paper I am going to do the same. I will tell you the results of three famous cases and what I have learned from them in the hope that this will be the beginnings of a more rigorous understanding of what are the essential shortcomings of failed enterprises.

1. - Metalgesellschaft (MG) and Oil

Although I was an advisor to MG, I will only rely on the public record. In the early 1990's a group of oil traders employed by MG, a large and venerable German trading company, decided to pursue the following strategy. First, they sold oil and petroleum contracts with delivery commitments extending over periods as long as ten years and with embedded options for the buyers. Second, for each barrel of oil sold they purchased one barrel of a short duration futures contracts. As these contracts matured new positions were continually being established to replace them.

When oil prices fell precipitously and the market went into a severe contango in 1992, margin payments on the futures contracts exceeded \$1 billion and nearly bankrupted MG. MG survived its foray into oil trading, but it was in intensive care for a long time. What follows are the autopsy findings and notes from the examination of the cadaver of its oil business. There are some central lessons that emerge from a careful examination of this case, and, as we shall see, these lessons reverberate through the other cases we will look at.

To begin with, the oil traders had a theory. Prior to 1990 about 70% of the time the oil futures markets were in backwardation, which is to say that the prices of long term contracts were lower than those of short term contracts. As contracts matured, then, their prices were expected to rise, producing cash profits to the holders. Second, from a pure accounting perspective, the delivery commitments were perfectly hedged by the futures contracts. When a one-to-one hedge eventually expires the holder recovers any margin losses from price changes or pays them back if prices rose. Every dollar made or lost on a futures contract would eventually be lost or made when the final oil delivery to the customer takes place.

A blind allegiance to a particular theory or strategy is a central feature of all financial debacles. Unfortunately, though, bad things happen that were not anticipated by the theory, and this is the second lesson. Enormous and historically unprecedented changes in prices and the business environment always occur in short time periods. In the oil markets spot heating oil prices fell by over 50% in a matter of months. The hedge guaranteed that on, say, a ten year delivery contract, accounting profits would equal accounting losses ten years out, but that was little comfort when the market demanded approximately \$1 billion to cover current margin losses on the futures contracts. These payments had to be financed and recovering the \$1 billion ten years from now wouldn't begin to cover the interest charges on the financing.

The theory was flawed and the bad event of the price drop only made this flaw painfully apparent. Correctly taking into account interest costs and the relative near and far term volatilities of the oil futures markets showed that the net position with the

so called hedges in place was actually riskier than if MG had simply sold the oil contracts and not bothered to hedge.

The third lesson is a classical one from finance. Financial markets are efficient in the sense that prices reflect up to date information. Furthermore, the markets are populated with astute traders whose business is processing information and profiting from it. Liquid markets — no pun intended — are too efficient for *naïve* and simple strategies to give sure profits. Spreads do narrow and fundamentals do reassert themselves. The drop in oil prices was a consequence of a natural supply response. High prices brought forth more oil supplies and lowered oil demand. But, there is too much competition in the markets for any spread bet, in the case of MG a simple rolling of futures contracts, to consistently make money. There is always some significant risk of losing big, and any static, simple system is doomed to failure.

The fourth lesson is that big dollars attract big attention. With their huge short delivery positions, specialists in the oil markets knew that MG would have to roll their expiring positions, and by some accounts, these traders were waiting eagerly when they did so. It is very costly to move a big position particularly when everyone is watching you, and it is impossible to be nimble. Elephants can waltz but they cannot tap dance.

Lesson five is that in times of distress, liquid debts always beat illiquid assets. Simply put, in a crisis only cash is liquid. The delivery contracts were highly illiquid and difficult if not impossible to sell at a reasonable price. Who would finance the MG positions based on the delivery strategy alone? Since the strategy wasn't self-financing, MG had to reach into its general borrowing lines to pay its liquid market debts and avoid bankruptcy.

Lesson six concerns the complexity of the business. While the strategy was relatively simple, its implementation and analysis was not. The complex delivery contracts and the massive size of their futures positions made a simple evaluation of the economics of MG's oil trading difficult. Complexity creates opacity and this makes a business vulnerable; the more opaque and complex a business is, the more difficult it is to finance. Complexity makes controlling risk all the more difficult.

The final lesson and in some ways the least obvious, but, as we shall see later, one of the most important, concerns what economists call agency costs. The MG traders were employees of MG and their interests were not necessarily aligned with the interests of the shareholders. This is what is meant by an agency cost; it is the cost to the firm and to its owners of managing this misalignment. It is difficult to align the interests of employees and owners and impossible to do so exactly. The failure to do so in this case puts a greater burden on monitoring and controlling employees, which is a component of agency costs.

Now let us turn now to our second example of financial carnage, hedge funds in the summer of 1998.

2. - Hedge Funds - 1998

In the summer and fall of 1998 a number of hedge funds “blew up”. Creditors called in their loans as the values of their collateral positions deteriorated and investors demanded their money back. The most famous of these, Long Term Capital Management (LTCM) underwent a structured refinancing led by the Federal Reserve Bank. Perhaps there is a virus going around, because, despite the seeming differences in the cases these patients died from the same illness that afflicted MG oil trading.

Most of the hedge funds that went under were followers of a strategy known as convergence trading. Whenever the spread between two apparently equivalent positions — e.g., holding a portfolio of a one year and a five year Treasury bond versus holding a three year bond — gets larger than historical norms, a convergence strategy attempts to make money by shorting the expensive leg of the position and purchasing the cheap one. This is a bet that historical norms will reassert themselves and, despite its sophistication, it is very similar to the MG bet on its roll strategy. In other words, this was the “theory” that provided the business logic for many of these funds.

Of course, even if spreads return to these normal historical relations, it can take a long time, and, in the interim, if spreads

widen further, then the strategy loses money. The summer and fall of 1998 were some of the most volatile periods in the history of the financial markets and spreads did, indeed, widen in what appeared — myopically — to be historically unprecedented levels. The resulting losses bankrupted many funds.

Despite the efficiency of markets, with much intelligence, experience and just plain common sense, trading can make money. After all, it is precisely by using their information and expertise that savvy traders profit. In doing so, they make aberrant prices converge to correct values which is precisely how markets become efficient. But, simply betting on the convergence of spreads to historical norms suffers the same irrational optimism that characterized the MG positions. If it were this easy to make money, then everyone would be doing it.

As with MG, big dollars once again attracted much attention. LTCM was the signature case. With positions of over \$100 billion, leverage of about 25 to 1 and nominal footings of over \$1 trillion dollars, everyone who was anyone in the financial markets was involved. If you weren't an investor you were a creditor and, with manic press ravings about the downfall of capitalism, the government had to get involved. In the end, no matter what the economics, LTCM was going down and there was no place for it to hide. Stories abounded about the scavengers in the market knowing LTCM's situation and waiting to prosper by the inevitable unwinding of their positions.

The hedge funds that went under were textbook examples of the adage that in times of crisis, liquid debts are king. Assets and position holdings may be marked-to-market, but debts are contractually stated. In difficult times, why should a lender risk anything on the convergence of prices when they can simply demand their money back immediately and force liquidation? Liquidity dries up just when those who are in trouble most need it. In times of market turmoil, creditors — given their own agency problems — call in lines of credit and force distress sales.

The sixth lesson to be learned is the drawbacks of complexity. With their craving for secrecy and the complexity of their

positions, hedge funds are amongst the most opaque of financial institutions. Not only does complexity make it difficult for outsiders to understand what the fund is doing, it also makes it difficult for even the managers of the funds to control and understand the risks in their own positions. LTCM had over 70,000 positions.

Agency costs were the final MG lesson and hedge funds were subject to these as well. Hedge fund fees are structured to align incentives, but monitoring and control are still required. While it is not clear that a misalignment of fees directly contributed to the failures in 1998, it is clear that the misalignment grew much more severe after 1998. For example, manager fees are often proportional to the profits above some previously achieved “high water mark”. When the fund falls precipitously, though, the current value may be so far below the high water market that the fund manager no longer has any meaningful incentive. This is similar to the pressure on corporations to reset employee stock options when the company stock has fallen significantly.

There is one new lesson to be drawn from the hedge funds that was present with MG but less apparent; leverage is risky and big leverage is dangerous. Leverage magnifies potential gains and losses and this clearly adds to the risk at the same time that it raises the potential for additional returns. This subtly interacts with agency costs. For example, left uncontrolled a fund manager might choose more leverage than clients would want since the client suffers the losses while the manager shares in the gains. In addition, whatever the systems, models, and theories employed, leverage strains the assumptions that underpin them. At LTCM’s 25 to 1 leverage — unless you are buying and selling exactly the same instruments (a five year bond and a four year and ten month bond will not do!) — controlling risk by mathematical pricing models becomes troublesome. Interestingly, though, for LTCM it would be wrong to dismiss the pricing models and their efficacy. After all, in what is a remarkable and ironic tribute to modern financial modeling, with its huge \$100 billion positions, LTCM “only” lost about \$3 billion.

3. - ENRON¹

Everyday the newspapers and media are filled with lurid stories chronicling the latest corporate debacle. From WorldCom to TYCO to ENRON and others, hardly a day goes by without some new and scandalous revelation. To hear the press talk, this has never happened before, and, once again, we listen to premature predictions of the downfall of capitalism and how greed will cause the markets to self-destruct. Of course, there isn't anything really new about all of this; the stories are the same and over the years only the names change. In the immortal words of the pianist at Rick's club in the movie *Casablanca*: "Play it Again Sam". ENRON succumbed to the same disease as MG and LTCM, albeit with some unique and somewhat unsavoury twists of its own.

ENRON's strategy was to acquire assets or businesses where trading markets are bilateral and not well established. The focus was the energy business, but their grasp extended further than electricity to include the internet, the telecommunications spectrum, steel, and other activities. The basic objective was to modernize these markets by introducing financial instruments and derivatives for trading and hedging. To implement this strategy, ENRON would buy a stake in a venture in a target market — BADCO. Characteristically, BADCO would have high initial costs and a hoped for long term payoff. The number and complications of these deals is daunting, but to simplify matters the financing of a typical deal looked something like this. First, ENRON would set up an offshore SPV, NEWCO, partially funded by outside investors. NEWCO would buy BADCO from ENRON or hedge BADCO's risks thereby taking BADCO off of ENRON's books — usually at a profit to ENRON. But, ENRON would retain control of NEWCO and would guarantee NEWCO against

¹ The following references provided helpful background material for this Section: INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION (ISDA) «17th Annual General Meeting», Berlin, 17 April 2002, *Financial Engineering News*, n. 26, June-July, 2002; PARTNOY F., «Testimony at the Hearings before the United States Senate Committee on Governmental Affairs», *Financial Engineering News*, n. 26, June-July 2002; *The New York Times*, October 3, 2002.

losses — sometimes by using ENRON shares as collateral. The ENRON story is still unfolding, but as it copes with bankruptcy, it bears all of the signs of the same illness that struck MG and LTCM.

As with the other financial collapses, lurking in the background, there is always a theory. ENRON's "theory" was based on its belief that it could profit by making inefficient markets efficient. The wide bid/offer spreads typical of inefficient markets were profit opportunities. ENRON hoped to "commoditize" these markets and prosper by narrowing the inefficient spreads. The strategy was implemented by using offshore special purpose vehicles (SPV's). "Aggressive accounting techniques" kept losses and risks off ENRON's balance sheet, presumably insulating its stock price from bad news.

But, like MG, this theory has some inherent flaws. ENRON's ventures are long term investments and some long term investments don't ever pay off and, if they do, it can take a long time. Furthermore, using your own stock to finance a sale of your own interests in BADCO to NEWCO and controlling NEWCO isn't a sale at all — it is overly aggressive accounting. Even aggressive accounting must eventually realize deep losses and ENRON's financing could only work in a rising market. Theories, however flawed, can always be right some of the time.

Unfortunately, though, bad things happen. Contrary to what many had come to believe in the 1990's, stock prices actually do fall as well as rise. With the collapse in the US stock markets, ENRON stock and all of its other ventures fell in value along with the market. The leverage inherent in ENRON's structures magnified the fall. Using ENRON stock to finance the SPV's works as long as it's rising. As the market fell, ENRON and its SPV's suffered accelerating losses. Furthermore, as word of its overly aggressive accounting practices leaked out, the stock price fall accelerated, and, as the reality became more apparent, the ENRON house of cards collapsed.

Beyond the fact that untoward events do occur, though, the lesson from efficient markets cannot be so easily dismissed, and that is a fundamental problem with the ENRON theory. Ineffi-

ciencies may be more apparent than real. In many markets bilateral trading arrangements and other peculiarities exist for solid economic reasons. Steel, as an example, has so many different grades and delivery options and relies so heavily on individual quality assessments, that it is unlikely that a uniform contract and market will ever be established.

This might all have never come to anybody's attention if it had happened to a small regional oil trader instead of one of the largest and most written about companies in America. As always, big dollars attract big attention. ENRON had grown to be one of the largest companies in terms of valuation in the world, directly employing over 20,000 people. Its shares were held by nearly all of the major institutional investors and its collapse was felt by all of them. As occurred with LTCM, there was no place for ENRON to hide. To try and satisfy its creditors by selling assets, for example, would only bring distress prices in a market where its distress was common knowledge. In addition, regulatory and legal pressure mounted, eliminating any real flexibility. If any flexibility had been available, the extensive debt of ENRON certainly would have eliminated it. ENRON held BADCOS, i.e., illiquid investments, and it also had extensive borrowings to finance its operations and assets. There was no ready market for its illiquid assets, and creditors forced it into bankruptcy. Creditors liquid claims always trump illiquid assets, and this occurs no matter how large the "fundamental" value of the illiquid assets.

Nor was ENRON any different from the hedge funds or MG in terms of its complexity or its leverage. ENRON's intricate accounting and financing structures were opaque to the market. It is only with the autopsy of the ENRON cadaver are they beginning to be understood, and the process is far from complete. In a crisis of both liquidity and confidence, complexity is an enemy of the firm; it makes it increasingly difficult to attract prospective white knights at reasonable prices.

As for leverage, financing SPV's with ENRON stock is a form of leverage. When the SPV's assets decline, the call on additional ENRON stock accelerates the decline in ENRON stock value. The

losses are now multiplied relative to what would occur with legitimate outside financing and independent SPV's².

The final lesson, agency costs, however, is what sets ENRON apart. It is not that this didn't arise with the hedge funds and with MG - it certainly did, and that was where we first identified it as a problem. With ENRON, though, it was moved to the forefront. If we had to identify a single root cause of ENRON's demise, agency issues and the failure to deal with them would be the main culprit, and we deal with it below in a separate section.

4. - ENRON and Agency Costs

Agency issues are endemic in a corporate setting where ownership and control are separated; management runs the company not the shareholders. In the case of ENRON, the evidence of the difference in incentives between the management and the board on the one hand, and the shareholders on the other is mounting. As an example, ENRON management held direct economic stakes in the SPV's. To the extent to which these interests were not coincident with those of ENRON, incentives are clearly misaligned.

Agency problems are dealt with by a combination of three approaches. First, agents, i.e., managers, must be monitored. Second, incentives have to be aligned, and, third, managers have to be controlled. Turning first to monitoring, there are a number of internal and external tools available for doing so.

Monitoring is usually thought of as an accounting function, and the foundation of monitoring is the auditing function. To be effective, external auditors must be economically independent. Roughly speaking, this means that the economic cost to the au-

² As an aside, one often hears much discussion of the role of derivatives in these financial debacles and a need for further regulation. In some cases, e.g., Baring's, Orange County, and Procter & Gamble derivatives take center stage. Beyond what we have said about their complexity, though, the mere fact that derivatives and financial engineering were employed has little more to add to our post mortems. Would regulation really have stopped the problems of ENRON? And what about TYCO in which derivatives appeared to have played little or no role?

ditors of possibly skewing their report must outweigh the economic advantages of the particular engagement they have.

Accompanying the external audit, there must also be an internal auditing function and a separation of risk control from risk taking. Internal auditing is an important risk control mechanism for senior management in its efforts to control those who report to them. Like external audits, internal audits must also be independent, but there is no way to assure this unless internal auditors and risk monitors report directly to the board of the company and, to some degree, feel free to do so without interference by the very management to whom they also report.

The firm's legal advisors also perform a monitoring service. All lawyers have an ethical code to which they are pledged to conform. Internal lawyers have such an ethical code, but they report to upper management and that puts them in a conflicted position. While they presumably have every incentive to report accurately to upper management on the activities of those under them, matters become more awkward when it comes to directly advising senior management on its own activities. Do they represent shareholders or management? Outside lawyers are similarly conflicted. Who is the client? Is it management who has retained them for the corporation or is it the shareholders who have a voice only through management?

The function of monitoring by accountants, lawyers, and risk control personnel, though, is not merely to identify problem transactions and activities. These are really only symptoms of problems. The main issue is the question of whether the incentives of the managers are aligned with those of the investor/owners.

When managers can prosper through their outside holdings in SPV's that do business with their company, incentives are misaligned. At the least, the manager should prosper only if the company does so. Managers are not like rats in a maze that go wherever the cheese is put. What is important, though, is that the cheese not be in a different place from where you want them to go. The role of compensation and incentives is not so much to motivate management to do what is in the best interests of the

shareholders, as it is to see to it that management does not get mixed signals with its compensation rewarding them for activities that are not in the best interests of the company. At ENRON there was a profound agency problem with incentives apparently woefully misaligned.

Of course, there would be no need to align incentives if, on their own, management adopted the goals of the stockholders. Or, to put it more broadly, if people were honest we could do away with a lot of economics. If all managers wanted to act in the interests of stockholders and thought that was the ethical thing to do — as most managers in my experience actually do strive to achieve — then there would be far less of a need for monitoring and control. Unfortunately, though, this was not the case at ENRON and no ENRON autopsy would be complete without mention of some simple and self-evident ethical precepts; what happened at ENRON offended the sensibilities of most observers and shamed many in the corporate sector.

While there is no objective test for honesty, there are some simple tests or, at least, indicators for dishonesty. For example, apparently at ENRON the board was asked to suspend the corporate code of ethics to permit some of the SPV structuring with management having stakes in the SPV's. This had to be a red flag to the board, and, in general, it is inconceivable to me that this behavior can be justified in the name of acting in the interests of the shareholders. As a last point on ethics and honesty, it is often observed that reputation induces honest behavior, but, unfortunately, reputation alone cannot be relied upon to do so infallibly. To put it simply, «Everyone has their price» - and there is always enough of a current reward to tempt the unscrupulous to sacrifice their reputation for an immediate pay-off.

When ethics and incentives fail, the final internal line of defence lies with the board. Ultimate control in the corporate structure resides with the board of directors; be it the German supervisory board or the US style board of directors. Presumptively, the board is both a resource for management as it deliberates strategy, and, also, the corporate representative of the interests of the

shareholders as it, for example, determines executive compensation. Unfortunately, there is no simple recipe for having the board do so in a manner that clearly serves the interests of shareholders, although it is my experience — albeit from observing healthy companies — that this is generally what directors strive to achieve. In the case of ENRON, the initial evidence clearly points to a board that was overly dependent on management. But, as one example of the difficulty in avoiding these problems, consider the commonly proposed remedy of having a preponderance of independent directors. Contrary to popular wisdom, I am unaware of any study that shows clearly that independent directors enhance company performance, which is to say there is no evidence that they make shareholders better off.

Further complicating the role of the directors is that, insofar as they are not inside management directors, they will always have limited knowledge of the workings of the company certainly relative to management. What is the board to do then? It is my view that the greatest asset of Board members is not so much their intimate knowledge of the particulars of the business as it is their ability to judge the integrity and competence of management.

Lacking clear rules, boards — and their advisors, the accountants and the lawyers — must turn to judgment and standards. In the end, the process is a human one and laws and regulations cannot be the sole answer.

Finally, beyond the board, the ultimate solution to a failure of corporate control to deal effectively with agency problems is the market and the market for corporate control. If a company is broken then it will be devalued in the market, and a cheap company is a target company. While an entrenched and malevolent management can fight a takeover, a good legal system will allow value-enhancing takeovers. But, this simple market solution is rarely the best approach. It may be inevitable, but it is a very costly way to correct a malfunctioning company, and, when they are feasible, the internal solutions of aligning incentives and monitoring are far more efficient.

5. - Implications for Regulation

Having identified a list of symptoms of failing ventures it is tempting to think of this as a problem in need of a solution. I think of it in no such terms. To once again use a medical metaphor, companies and ventures that die often do so for a good reason, much the same as cells in the body die and are replaced by newer and healthier ones. The object of the lessons is not to prevent all companies from failing and certainly not to prevent new ones from starting up. Rather, it is a set of indicators that companies and individuals can use to assess the vulnerabilities of the ventures in which they are involved. In a healthy economy, companies are born and they die at a rapid pace and anything that interferes with that process is to be viewed with great suspicion.

Not surprisingly, though, the fallout from these cases and, most importantly, from ENRON, has included much activity on the regulatory front. The Sarbanes-Oxley bill passed in the United States is the most tangible and permanent regulatory response to the ENRON collapse and to the accounting horror stories from Worldcom, TYCO and other demises.

While there is much of value in the Sarbanes-Oxley bill, there is also much to be wary of. As a general rule, regulatory and legislative activity follows any period of financial tragedy, and, however well intentioned, its statutes are often structured in some haste and as much in response to the drama of the events as to the logic. Not unexpectedly, they usually take the form of prohibiting certain activities that were held up by the media as grotesque examples of abuse, and rarely do they take account of the reality that the cure might be worse than the disease.

Sarbanes-Oxley, for example, establishes an accounting oversight board, which reads well on paper, but certainly in its awkward and stilted initial formation has not inspired much confidence. One hopes that the adult outstrips the child. The bill goes on to prohibit a wide range of services provided by auditing firms to their clients on the premise that allowing the firms to provide these services will tie them too closely to the firms and make them passive captives rather than aggressive outside auditors.

Does this argument stand up to careful scrutiny? Not obviously. An auditing firm generally acquires much expertise about the companies that it audits. Not permitting auditing firms to offer this expertise as consultants is certainly not efficient. But, perhaps the efficiency gains are outweighed by the loss in independence and accountability. Here the economics gets a bit murky.

As an example, suppose that an auditing firm is paid \$5 million for an audit and \$20 million for ancillary consulting services. When the two are unbundled, another firm doing the consulting and not the auditing might charge \$22 million for the service because it would have to learn what the auditor knows as a byproduct of the audit, and a firm that simply audits might have to charge \$6 million for the audit if it cannot spread the costs over consulting as well. If the auditor is to put in the same effort and can no longer utilize the fruits of this effort for consulting activities, it will certainly have to charge more for the audit. Not only is it the case that uncertainty and increased liability will raise audit fees, this straightforward economics will also push them up. This, in turn, will certainly have the effect of imposing disproportionately higher costs on smaller firms and, at the margin, will further dissuade them from entering the public markets.

But, what of the incentive for the auditing firms to cave in to a large client that offers both consulting and auditing? This is a bargaining situation. When the auditing firm no longer consults, the group within the firm that audits will be smaller and if accountants' time is charged with at least the same embedded profits from all activities, then the auditor will have the same pressure to cave with or without consulting. Simply put, if 20 partners were consulting and 5 were auditing, if only the 5 are now auditing, and, say, collecting only one fifth of the original fees, their fees per auditor will be the same and their response to firm pressure will be unchanged. If the resources devoted to auditing are to remain the same, then the profits from doing so will not decline.

Clearly, though, the supporters of this legislation have in mind the case of a firm that agrees to the firm's pressure on the \$5 million audit to retain the profits from the \$20 million consulting

contract. But, this must be contrasted with the firm that charges \$6 million for the audit and does no consulting. Firms that specialize in audits alone will be smaller and more under pressure than the was the typical firm prior to the legislation. The profit for them from a \$6 million audit will be as meaningful and as open to pressure as the profits to a scaled up firm from doing both activities.

Another way to make the same point is to consider it from the point of view of the firm that is being audited. In a world where they hire one firm to do both activities and pressure the firm to compromise its audit, presumably some portion of the, say, \$5 million in profits that the auditing/consulting firm received was a compensation to the firm for running the risk of doing so. Suppose, for the sake of argument, that this was \$1 million. Now the auditing firm alone is smaller and who is to say that the same \$1 million payment might induce them to even further largesse. A cynic might argue that to the extent that the bill fragments the auditing industry further it transfers even more power to the audited firms.

There are many more aspects to the bill, but a detailed analysis is really the subject of another talk. The point is that in the wake of some dramatic financial event, we are often subjected to new regulations despite the lack of any clear evidence that doing so will generally improve the functioning of the capital markets, let alone economic welfare more generally. What we do know is that this regulation establishes further barriers to entry to the capital markets and raises the overall costs of doing business.

Having said that, though, I do believe there is a problem in the U.S. with accounting and, more generally, with monitoring and I believe that the problem lies in a subtle place. We tend in the U.S. to think that if there is a problem then it can be solved with more laws and more regulations. I actually think that this is part of the problem.

It used to be that when I went to a doctor he would tell me whether or not I was healthy. Not any more. Now the doctor says to me "We have yet to find anything wrong with you". This well may be more literally accurate, but that isn't the point; the change

didn't occur because doctors wanted to be more accurate. Rather, the change occurred because doctors are afraid of being sued. It also used to be the case that accountants would be willing to opine after the books were closed that, "My opinion is that this fairly represents the financial condition of this firm". Accountants don't do that any more and the reason is also the enhanced liability they face.

As a consequence of the increased visibility and activity in tort lawsuits, experts no longer give opinions based on judgment, rather, they seek out narrowly defined "safe harbors" in the law and the regulations. Furthermore, the system encourages them to lobby for more and more issues to be resolved by statute and less by judgment. We are clearly moving from a system of standards to a system of regulations and statutes, and in a world of ever increasing complexity, that is a mistake. My personal view is that this is one of the biggest costs of our failure to institute meaningful tort reform in the United States.

Nor should my European friends be too smugly complacent about this. I predict an increasingly active bar in Europe that will press for class action lawsuits modeled after the American example. There is nothing inherent in the legal system that prevents it, and while you do have some existing legislation on capping awards, that, too, is subject to the whims of the political process.

Some Concluding Observations

Financial history is littered with corpses who have died to tell us their stories, and our analysis has provided us with a diagnostic tool, namely the questions to ask of any business venture to insure that it stays healthy. We should also be sure to ask them of successful businesses and not hold them in reserve for an autopsy.

However dramatic the individual cases, though, it would be wrong to make too much of these events and to jump too quickly to the conclusion that the system needs a radical overhaul. In my experience, dramatic incidents are the main engine for regu-

latory and legal changes in the financial markets, and, in the haste to take some action, the resulting changes are rarely well enough thought out. What is remarkable is not the failures, but rather how exceptional they are and how well the market system seems to work overall. There is no need to close this Lecture on a note of doom. While the stock markets have fallen from their highs of a couple of years ago, they are still quite high by historical standards and that surely speaks to the confidence that investors still maintain in them.

