

What We've Learned About Investments From Enron and the Tech Collapse

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When I started jotting down the lessons that we can learn from Enron and the collapse of technology stocks, I was struck by how simple the lessons are. I was embarrassed to presume that my audience needed to hear such simple lessons. But I also realized that *somebody* needed these lessons. Somebody had failed to diversify a portfolio. Somebody believed in his or her ability to predict which sectors would be hot next year. Somebody let emotions run an investment portfolio. Somebody needs to hear these lessons. Probably not you. But here are the lessons that you can pass on to whoever needs them. Even if you learned them once, the great sailor Bernard Moitissier once remarked that the best lessons in life must to be learned many times.

It Can Be Bloody Out There

You could have put Enron stock in your 401(k), and many did. When the stock peaked at \$90 a share, it looked like a good choice. Today, with the stock trading at around 25 cents per share, Enron stock is a tragedy.

Enron Stock Price & Volume



Technology held us in its sway, and in 1998 and 1999 stocks in this sector gained over 70% per year. In 2000 and 2001, however, tech stocks fell an average of 40% and 24%. Ouch.

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These are sector averages. Some specific subsectors are even worse. At the end of 1999, a client asked me to look into business-to-business electronic commerce, and I set up a list of five stocks to track. Suppose that, at the end of 1999, you had invested \$10,000 in this “space,” evenly divided among the five stocks. Suppose that you continued to hold them. You would have turned your \$10,000 investment into a portfolio worth \$332. Congratulations! That 97% loss is not quite as bad as Enron, but that observation is just splitting hairs—the last three hairs on the bald man’s head.

Clearly, Enron and tech stocks teach us that . . .

There’s Risk Out There

Risk in common jargon is the possibility of loss. Finance professionals usually measure risk by the standard deviation of returns, measured over some time period such as a year. A larger standard deviation means that the returns are more variable. The investor has more upside potential with high risk, but also has more downside potential.

In the 1990s there was a resurgence in interest in stock investing. The Baby Boomers were beginning to save for retirement, and 401(k) savings plans became common not just at large companies, but at medium sized and even some small businesses. *Stocks for the Long Run* was both the title of a popular investment guide and a mantra for mutual fund investors.

There was nothing wrong with much of the information offered about stocks. In fact, *Stocks for the Long Run* is an excellent book. But the lessons taken by the investing public seemed to emphasize the advantages of investing in stocks, with little of the risks. Knowledgeable people, however, have always recognized that stock investing entails risk.

The idea that long-term investors need not worry about risk came from statistics showing that the variability of returns diminishes over time. Consider the table below, which shows the total return (price appreciation or depreciation plus dividends) for large stocks since 1925. Over a single year, the charts shows that things can be very good—up 54%--or very bad—down 43%. Over longer time periods, though, the spread between best return on record and worst return narrows. The idea is that people who will be holding stocks for a long time—like from age 40 until retirement—are protected from risk.

Maximum and Minimum Returns, S&P 500, By Holding Period

	1 year	5 years	10 years	15 years	20 years
Maximum	54.0%	23.9%	20.1%	18.2%	16.9%
Minimum	-43.3%	-12.5%	-0.9%	0.6%	3.1%

The problem with this simple analysis is that a percentage point of return makes a much greater difference when it is compounded for ten years than for one year. For instance, suppose that you have \$100,000 invested at 10% per year, which is a fraction below the long-run average return for stocks. How much difference would it make to you to have an extra percentage point of return? Consider the figures in the following table.

Value of \$100,000 Invested, By Holding Period

	1 year	5 years	10 years	15 years	20 years
11% return	\$111,000	\$168,506	\$283,942	\$478,459	\$806,231
10% return	110,000	161,051	259,374	417,725	672,750
Value of a percentage point	1,000	7,455	24,568	60,734	133,481

The most obvious implication of this table is the very powerful effects of compound interest or returns. But also look at the difference that one percentage point of difference makes. Out 20 years, the difference between earning 10% and 11% is greater than the starting amount. Clearly, even long-term investors have to worry about risk, and the possibility that long-term returns will be poor.

Risk, however, is sometimes rewarded. In general, types of assets that have higher risk generate higher returns. Over the long haul, stocks return more than bonds. That additional return is the payment you receive for taking risk. Whether it's a good trade—more return for more risk—depends on your personal attitudes and situation.

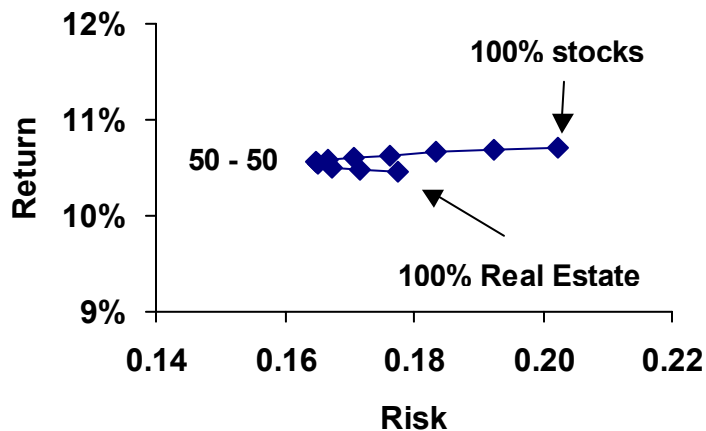
There is good news, though, . . .

Diversification Reduces Risk, Sometimes Without Cost

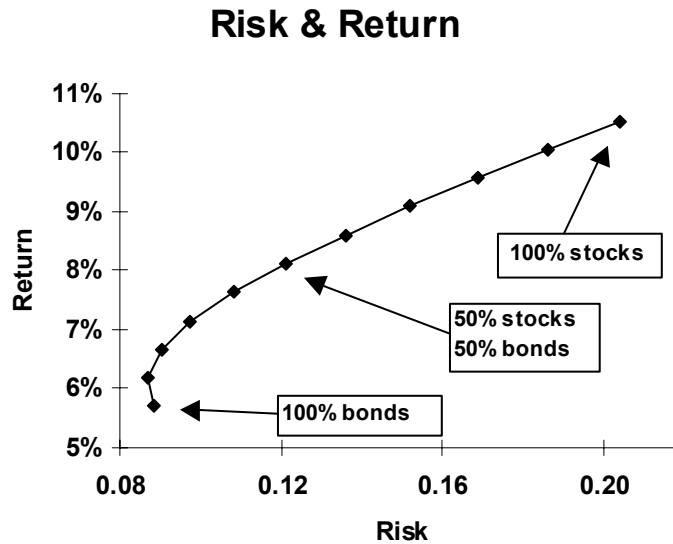
A portfolio is a blend of assets. The average return of the portfolio is simply the weighted average of the returns of the individual assets. No rocket science there. It's like a grade point average: an equal number of A's and C's leaves one with a B average.

Risk is a different story. Unless the assets of a portfolio are perfectly correlated, the risk of the portfolio is less than the average risk of the assets in it. Let's take an example. Stocks and real estate (using REITs, real estate investment trusts) have similar long-run average returns, with stocks doing slightly better. REITs are just a bit safer than stocks, but not dramatically so. But the two types of assets are not at all perfectly correlated, so that a portfolio with a 50-50 blend of the two will have a lower risk than either type of asset by itself. The chart below shows the risk and return from various combinations of stocks and REITs. Note that changing the mix of the two assets has very little effect on return—it's always around 10 ½ % . But risk can be cut by about a fourth by diversification. This is about as close to a free lunch as you'll find in finance.

Risk & Return



Similar results come from a bond portfolio to which stocks are added. Bonds are much safer than stocks. But if you move from, say 100% bonds to a mix of 95% bonds and 5% stocks, your risk goes down. (There's no way to figure that out without doing the math, which we don't show here.) Think about that. We started with a low-risk portfolio, then added a higher-risk asset, and ended up with less risk than before. That's because some of the time that bonds are going down in value, stocks are going up. Not only does the blended portfolio have less risk, but it has higher returns. Less risk, and higher returns. Cool. Unfortunately, if you take this too far you end up with the old tradeoff: risk starts going up because, well, stocks *are* risky. Eventually, if you want higher returns you do have to accept more risk.

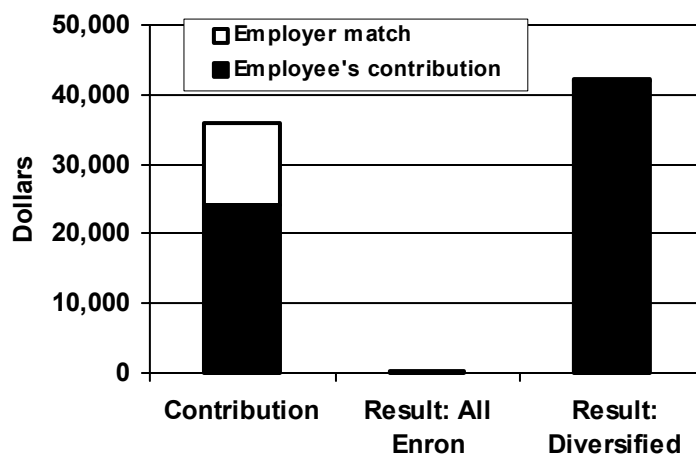


The principle applies not just across asset classes, such as stocks, bonds and real estate, but also to types of stocks. David Edwards of Heron Capital Management ran the numbers on three mutual funds that focus on hot sectors—or what have been hot sectors for more than a decade. The individual funds, which concentrate on technology, finance and healthcare, have standard deviations of annual returns ranging from 21% to 35%. But an equal blend of the three has a standard deviation of only 19%. The blended portfolio has a higher return than two of the three sectors, and less risk than any of them alone.

Keep in mind that diversification does not have to involve adding safer assets, which have a lower return. Even risky assets, with the potential for high returns, can be used to reduce risk.

Now think about the poor Enron employee whose 401(k) contribution was matched 50 cents on the dollar with Enron stock. If he had been making \$40,000 a year and contributing 6%, then over 10 years he has put \$24,000 into the plan. If his own contributions had been invested in the S&P 500 index fund, today he would have about \$42,000. But if he had put his own contributions into Enron, he'd have only a couple of hundred dollars of his money left. The Enron employees who diversified their 401(k)s came out all right. Those who loaded up on one stock are not all right.

Enron 401(k): Hypothetical



What's puzzling to many investors is not that diversification is good. Many of them could have passed the written exam on diversification. What puzzles them is that their undiversified investments didn't work out. Tech stocks had such great stories. There's another lesson to be learned, that . . .

Great Stories Don't Always Reward Investors.

The Internet will change everything, we were told. Well, it pretty much has. We can all tell stories of dramatic change from the Internet. The one thing that did not change is that business is a competitive challenge.

I particularly like the business-to-business e-commerce stories. There was huge waste in corporate purchasing systems. Better prices could be had by auctions. Coordination of the supply chain would save billions of dollars. All of these statements were true, to some extent. And such statements are a good way to start. Business concepts should, indeed, begin with a statement of how value is provided to customers.

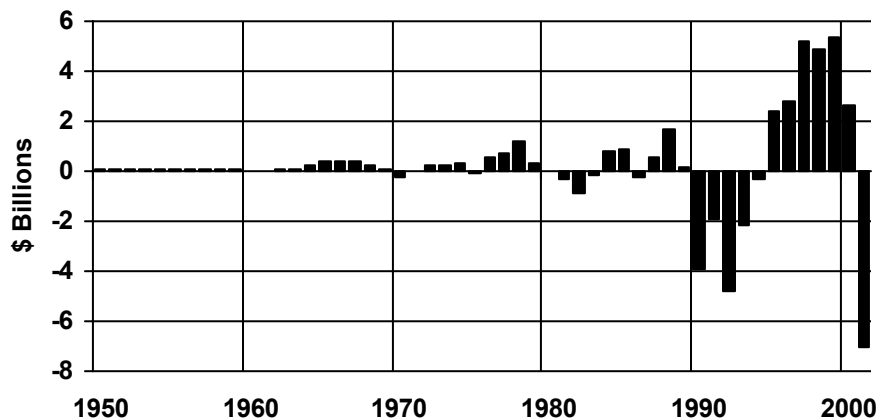
Since the tech boom, however, we've learned a few things. First, even things that are truly going to happen actually happen less rapidly than we think they will. As an economic forecaster, my most persistent error was in expecting events to unfold more rapidly than they actually did. I was so excited to have figured out what would happen, that I *wanted* to it all happen quickly, to prove myself right. But the world does not organize itself to suit me or to make my forecasts look good. Things take time, including the changes coming from new technology.

Our second lesson about great stories is that we can't always reap the full value of what we create. Consider, as an example, George Soros placing a one billion dollar currency trade. What is the value to him of being able to communicate instantly with a foreign exchange trader? Now, remember how big a billion dollars is. One percent is ten million.

One one-hundredth of one percent is \$100,000. Wouldn't George be willing to pay, say, a measly \$3,000 to talk to the trader? Certainly he would. But what does he actually pay? Probably about three cents a minute, depending on which plan AT&T or Sprint or MCI sold his company. George would probably pay more if he had to, but he doesn't have to. Ain't competition wonderful?

The best case study of good stories failing to reward investors is the airline industry. Suppose that you had anticipated, back in the 1950s, that air travel would go from a luxury for the ultra-rich, to a commonplace excursion for the middle class. You realized that a few road warriors would log a hundred thousand miles a year, and that tens of millions of Americans would take at least one airplane trip a year. Back in the 1950s, you would have been a wild optimist. And what if you had invested based on your wild optimism? You would have worse than average returns despite your above-average prescience. The airline industry cuts prices to fill seats, and when it does make a profit, its unions extract higher wages and benefits. There hasn't been much left for investors. In fact, cumulative net profits since 1950 are only about \$11 billion. That's the sum total of every dollar earned, net of money lost, despite revenues of about \$1.9 trillion over the same time period.

Airline Profits



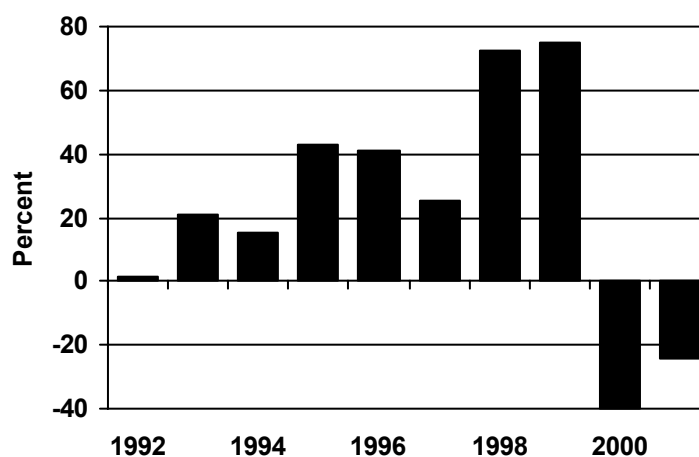
Technology did have a great run for a few years, and it certainly is changing our lives. And over time, investors will probably do better in technology than they have done in airlines. But long run success doesn't mean that the sector will do well next year. However, many of us—or actually, someone else—thought that it was possible to identify which sector would be hot. The lesson is simply that ...

Next Year's Winners Are Hard to Identify

International stocks looked really cool in the late 1980s. Investors piled on both for high returns and diversification. They learned how diversification worked after three years of high international returns: the sector went from first to worst for the next four years. U.S. stocks improved, however, so the globally diversified portfolio did have less risk.

The same pattern—by which I mean lack of pattern—occurred in the sectors within the U.S. stock market. There have been plenty of years where leadership went to technology or health care, but also years in which the stodgy side of the market—utilities and basic commodities—ruled the roost.

Technology Sector Returns



Many investors thought it was possible to figure out which asset type or sector was going to outperform the market. The problem with that approach was aptly described by Galen Blomster of Wells Capital Management: “Since these sectors [the winners] appreciated in such short bursts, it would have been extremely difficult, if not impossible, to catch the updraft by timing the market.”

The most common approach to identifying hot sectors is simply to follow what has been hot in the recent past. Such thinking is typified by the Enron employee who put his own 401(k) contributions into Enron stock. He later explained that at the time, Enron was doing well and all the mutual funds were doing poorly. This approach turns out to be fallacious because . . .

There is No Present Tense in the Market

There is a past tense. Stocks were down last year, up last month, steady in the last 23 seconds.

There is a future tense. Stocks will go up, or stocks will go down.

But there is no present tense. Stocks are not currently doing anything. It is not correct that what has happened in the recent past, even as recently as 15 minutes ago, is a good predictor of the future. Well, it's reasonable to look at the last 75 years of stock market performance and to assume that the next 20 or so years won't be too much outside that range of experience. But the recent past doesn't tell you anything about the near future.

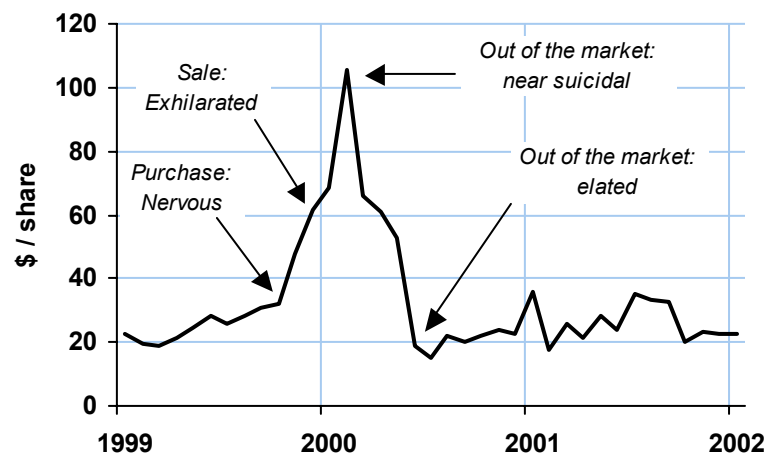
The failure of most day traders to succeed is testimony to this. They did not leave day-trading because they really didn't care for working at home in their jammies. They just ran out of money.

Following the recent hot stocks or sectors wasn't entirely based on the presumption that the past indicates the future. For many people, it was basic human instinct. Do what most recently made you feel happy, avoid what most recently made you feel sad or angry. Unfortunately, though, . . .

Emotions Are Not Always Your Friend

The desire to continue doing things that feel good is natural. It can reach unnatural levels, though, as in drug addiction or technology stock investing. I myself took a plunge with one technology stock fairly late in the cycle. I bought Cytrix at \$30 a share. Within weeks, it was trading at \$60. I felt like I had stuck a needle in my vein and injected something very, very nice. I wanted to do this again. Over and over again.

Cixtrix: Closing Stock Price



Tech investors did stick that needle into their veins over and over again. For a while it worked. But as tech stocks rose, their portfolios became over-weighted in technology. They should have been selling tech, to rebalance their portfolio back to a diversified state. Instead, they sold the utilities and basic industry stocks to put even more in technology.

Unlike addicts, tech investors didn't say that they could stop anytime. They said that they would buy on the dips, because they were long-term investors. Looking for that next high was what they were really doing.

The investor who had avoided tech because it was overpriced also had an emotional roller coaster ride. This investor was sitting in nice, conservative stocks or mutual funds, getting low returns. The returns were below average, because so much money was being shifted out of low-tech into high-tech. Even worse, the next door neighbor was racking up 30% to 50% annual returns in tech stocks. So the non-tech investor kicked the dog, kicked the spouse, and kicked the stock broker. Then went out and bought tech stocks, well after they had already shot up.

This brings us to the other side of diversification: don't completely avoid a sector just because it looks too risky. Those who jumped into tech late got burned. But those investors who always had an exposure to tech did OK, because they were in tech even before it started to take off. Prudence is a concept that should be applied to a portfolio as a whole, not to individual stocks. Prudence requires diversification, even into sectors that appear to be risky. It's OK to give those sectors less weighting, but it's actually riskier to completely avoid the high-risk sectors.

Back to those who chased the hot sectors. Their portfolios became high lopsided. When a portfolio has one stock that outperforms the rest, the portfolio becomes less diversified. The prudent response is to sell some of that great stock. But the simplistic forecast, and our emotions, lead us to the opposite decision: buy more. Thus, we need . . .

A Guide for the Recovering Tech/Enron Fanatic

First, set up a basic asset allocation, to identify how you want your assets divided among stocks, bonds, and real estate. (Some folks get more sophisticated, defining asset classes in more detail, such as domestic versus foreign, or large cap versus small cap. There's nothing wrong with that, but you don't need that much detail to get started.) There are web sites that will offer suggestions, based on your attitude toward risk and your age. (For instance, look at <http://www.smartmoney.com/oneasset/>)

Next, for your stocks, set up an allocation across sectors of the stock market. If you pretty closely match the market's allocation, you're minimizing your risk. (That is, if technology is 20% of the overall stock market, you would have 20% of your stock portfolio in technology companies. As you move away from the market allocation, you take more risk. If you insist on playing your hunches, take limited bets by varying your sector allocations by, say, no more than five or ten percentage points.

Rebalance routinely, perhaps one a year. That begins by identifying what sectors of the market you are now in. (Remember, they change as often as market values change.) The Morningstar web site (www.Morningstar.com) has a feature called Portfolio Instant X-Ray, which is very good at identifying the sectors that you are concentrated in, based on your list of stocks and mutual funds owned. The market weights of sectors can be found on the Standard & Poor's web site (www.spglobal.com/indexmain500_data.html).

Rebalancing is tough when it requires selling stocks at capital gains. No one exceeds my own distaste for paying taxes unnecessarily. So start with the easy steps; try to sell stocks in the over-weighted sector that have not appreciated too much. If you are giving money to charities in amounts of \$1000 or more, give appreciated stock. Take losses wherever you can, and use them to offset gains in the over-weighted sector. And occasionally bite the bullet and take your gain to avoid the excessive risk that comes from an undiversified portfolio.

Our final piece of advice for the recovering tech/Enron fanatic: take it easy. Spend more time with the kids. Take a walk in the evening. Learn to sail. Don't make your investments your hobby. When someone says that he loves investing, I think of the advice given by talk show host Bruce Williams: "Never love anything that cannot love you back." Love your spouse, love your kids, love your dog. Don't fall in love with a stock or with the act of investing itself. They will never return your love.

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Suggestions for further reading: There's a lot of snake oil out there! Plenty of self-proclaimed experts offer very spurious advice. However, there are several books that are research-based which we recommend:

Roger G. Ibbotson and Gary P. Brinson, *Investment Markets: Gaining the Performance Advantage*. If you are going to base your investment strategy on one book, this could be it.

Burton Malkiel, *A Random Walk Down Wall Street*. The classic book with sound advice. Emphasis on stocks.

Jeremy J. Siegel, *Stocks for the Long-Run*. Good discussion of stocks, but does not discuss broader issues, such as real estate.