

Alternative Investment Solutions

Food for Thought: The Iron Law of Failure

July 2007

- Most businesses fail. Extinction is common in business and life. 99.99% of all biological species that have ever existed are now extinct. On a somewhat shorter timescale, more than 10% of U.S. firms go extinct annually. Even large, successful, monopolistic corporations are not secure. Not only species and corporations fail, policies and governments fail too. Economist Paul Ormerod calls this the Iron Law of Failure.
- We know that there will be failure and collapse in the future. We can also assess probabilities. However, we do not know which of the species is going to become extinct. The reason behind sizing positions is the direct result from this fairly robust and difficult to challenge prediction that there will be failure in the future. However, we do not know which of our funds is next in line to fail and become extinct. We do believe (or hope), however, that we have the skill, experience, and intellectual honesty to deal with these business dynamics, uncertainties and risks in a professional, forward-looking and prudent manner.
- Feedback is welcome.

Table of contents

The Iron Law of Failure.....	3
References	9

Alternative Investment Solutions (AIS) is part of Alternative and Quantitative Investments (A&Q), itself part of UBS Global Asset Management. AIS has investment personnel in Stamford (CT), London, Tokyo, Hong Kong, and Zurich.

Author:

Alexander Ineichen, CFA, CAIA, FRM
+41 44 234 7235
alexander.ineichen@ubs.com

Contact:

Kerri Pacello
+1 203 719 4026
kerri.pacello@ubs.com

Previous AIS reports:

- Q&A on Leverage, 08-2006
- Conference Proceedings, 03-2007

The Iron Law of Failure

“Success is the ability to go from one failure to another with no loss of enthusiasm.”

—Winston Churchill

Most businesses fail. Extinction is common in business and life. 99.99% of all biological species that have ever existed are now extinct. On a somewhat shorter timescale, more than 10% of U.S. firms go extinct annually. Even large, successful, monopolistic corporations are not secure. Most of the firms in Thomas Peters' *In Search of Excellence* later failed to maintain their excellence, to say the least. Sometimes excellent companies fail. Enron, for example, was praised to the skies, even by the President of the United States, for its dynamism and innovative thinking right up to the point of failure. Over the past half century, western governments, especially in Europe, have intervened to try to improve the social and economic life of their countries on a scale unimaginable to previous generations. Yet social and economic problems persist. Not only species and corporations, policies and governments fail too. Economist Paul Ormerod (2006) calls this the *Iron Law of Failure*.¹

Ormerod writes:

“The Iron Law of Failure appears to extend from the world of biology into human activities, into social and economic organizations. The precise mathematical relationship which describes the link between the frequency and size of the extinction of companies, for example, is virtually identical to that which describes the extinction of biological species in the fossil record. Only the timescales differ.”²

Pioneering economist Alfred Marshall thought early in his career that, like trees, massive corporations would eventually die. Later, he changed his mind, writing around 1910 that such companies “often stagnate, but do not readily die.” He was right the first time. Most of 1910's big companies no longer exist. They failed. Yet economists have nearly ignored this fact of business life. Instead, they treat failure like the exception to the rule. Conventional economics depends on equilibrium, a precise balance of supply and demand. Equilibrium is static. However, the people and circumstances in a social system, and an economic system, are not static. They are in perpetual motion and change. Thus, the kind of data about demand, cost, pricing and competitive response a traditional economist might use to plot a strategy is often inadequate. Conventional economic analysis offers simplistic approaches to the complex matter of managing a business.

¹ From Ormerod, Paul (2006) “Why Most Things Fail – Evolution, Extinction and Economics,” London: Faber and Faber Limited.

² Ibid

The parallels between species, people, firms, governments and, of course, hedge funds are striking in terms of failure. They are all complex entities that try to survive in dynamic environments which evolve over time but eventually fail. Despite striking parallels between the social and economic world and the world of biology, there is a fundamental difference between the two: the process of evolution in biological species cannot be planned. Species cannot act with the intent of increasing their fitness to survive. In contrast, in human society, individuals, firms and governments all strive consciously to devise successful strategies for survival. They adapt these strategies over time and alter their plans as circumstances change. As Lord Keynes, who apparently was persuaded to focus on economics at Cambridge by Marshall, put it so eloquently: "When circumstances change, I change my view. What do you do?"

However, there are limits to planning. An early attacker of conventional economic analysis was "Austrian economist" Friedrich August von Hayek. While most 20th century proponents of the dismal science suggest economics should be conducted in a similar fashion to physics where theories depict mechanical systems and mathematics can precisely describe these systems, Hayek's views were much more rooted in biology. Individual behavior is not fixed, like a screw or cog in a machine is, but evolves in response to the behavior of others. According to Paul Ormerod, Hayek, unlike most modern-day economists, understood and admired the achievements of other intellectual disciplines, especially anthropology. The complex interactions between individuals, in Hayek's view, give rise to inherent limits to knowledge of how systems behave at the aggregate level. No matter how smart the planner, no matter how much information he or she gathers, there are inescapable limits to how much can be known about the systems.

Companies and government policies operate in the real world, which is not a place of pristine theoretical conditions. It is messy and quite often unpredictable. Great art and literature are meaningful because they reflect the real circumstances of human life. Macbeth kills the king because he expects certain outcomes. At first, his theory – so to speak – seems sound, but other people have unexpected reactions and interfere, causing results Macbeth never imagined. Logic and reason do not always equip us appropriately to predict how people will act or react. (If this were not true, hedge fund replication would be a good idea.)

Surprises happen even in games that people have played for thousands of years. Few games have been more exhaustively studied than chess, yet discerning the "best" move at any point in the game is nearly impossible. Even the great chess masters do not insist on finding the best move. They make moves that, overall, seem reasonable and unlikely to cause big losses.

Financial theory is hooked with the EMH (Efficient Market Hypothesis), despite an increasing amount of evidence that it is untrue or very imprecise and of little practical value to investors. The EMH and CAPM (Capital Asset Pricing Model) are still part of the main building blocks of what is normally referred to as MPT (Modern Portfolio Theory). According to disciples of EMH, active asset management does not really exist. How can it? If markets are efficient, how can an active process result in value added on a *sustainable* basis? The hedge fund industry, therefore, should not exist. It is absolutely inconceivable that a

group of investors outperform the rest of the market place over such a long period if markets were anything close to efficient.

A couple of years ago, large parts of academia attempted to explain the hedge fund industry away by arguing that the perceived alpha is due mainly to survivorship bias in the data. The current fashion from that fraternity is to argue that hedge fund return streams can be replicated passively. Thomas Kuhn (1962) presented the idea that science does not progress via a linear accumulation of new knowledge, but instead undergoes periodic revolutions that he calls "paradigm shifts", in which the nature of scientific inquiry within a particular field is abruptly transformed.¹ Kuhn also argued that rival paradigms are incommensurable, that is, that it is not possible to understand one paradigm through the conceptual framework and terminology of another rival paradigm. Although this argument is slightly over the top, we occasionally find that the hedge fund phenomena, that is, the idea of generating absolute returns for capital to compound sustainably without major interruptions, is "incommensurable" with conventional economic thinking that brought us EMH and, as a result, indexation and benchmarking mania.

Often EMH disciples and fetishists of randomness argue that investing is like a national coin tossing event: If the whole population of the United States were to flip coins on a regular basis, then due to chance alone, there would be some coin tossers in the end who have a disproportional number of "heads". Some practitioners actually call these people "market fundamentalists" because their view is so extreme and their belief in their doctrine so strong that it can be described as "dogmatic". According to these market fundamentalists, Warren Buffett is the result of randomness entirely, i.e., somewhat akin to the winner of a national coin tossing event.

It goes without saying that from a practitioner's as well as an active portfolio manager's point of view this is all nonsense. Just as there are different skill levels in any other human activity, such as skiing, poker, solving mathematical equations, etc., there are differences in skill levels when investing money and managing risk. While a national coin tossing event is a good as well as a very practical and illustrative way to explain EMH to under-grads it does not explain very well the business and investment environment in which we are operating. We find that a better aphorism would be not a national coin tossing event but a national chess or poker tournament, where the losers die. In such a tournament, the outcome might have some elements of randomness. However, randomness would not govern the game. It would transpire that some people are simply smarter or better trained or better at adapting to their opponents strategy, etc. Also, most losers would die quietly. They would lose and die without causing headlines or outrage. Only every now and then would a loser die in a spectacular matter that it would be news-worthy for the national newspapers to cover. (It goes without saying that various interest groups would publicly jump on this occasion to detest the cause, to question the tournament and to try to regulate away the particular move that resulted in the spectacular death.) The most relevant aspect from our perspective is that the outcome is to a large extent predictable, i.e., the opposite of random. Assuming a population of 300 million, the likely winners of this tournament

¹ See Kuhn, Thomas (1962) "The Structure of Scientific Revolutions," University of Chicago Press.

could be reduced to a group of a couple of dozen potential winners. The probability of a chess expert or grand master winning a chess tournament is not the same as the probability of a novice winning, irrespective of his or her subjective assessment of their skill. So, different contenders face different probabilities of success, it is not equally weighted and, hence, not entirely random. However, there is still an element of randomness. So, for example, a winner of past games might fail in the final rounds of the competition, while other, less established and known individuals might do better than expected. However, the tournament is not a function of randomness but a competitive and Darwinian selection process. We believe this to be closer to the truth of business and investment life than a national coin tossing event.

MIT-professor and hedge fund manager Andrew Lo referred to the hedge fund industry as the "Galapagos Islands of Finance".¹ We find that the reference to Darwin could not be more appropriate in the current environment of thinking about economic affairs in general and finance and financial markets in particular.² Darwin, putting it quite casually, showed that many beliefs and paradigms that humans cherished and thought of as the truth turned out to be false or very improbable. It took a while for people to get acquainted with the new fact that their ancestors – purely from an anthropological point of view, of course - have been monkeys. This new piece of evidence caused quite a stir at the time. The reason why Andrew Lo referred to hedge funds as the Galapagos Islands is because the presence of hedge funds too challenged the concurrent paradigm in ways that need to be viewed as material. Markets are not always in equilibrium, a static concept; they fluctuate daily. Investors are not Mr. Spock-like rational economic agents maximizing their marginal utility. Market participants are driven by their wish not to fail. They want to survive.

Today's financial environment has become too complex to the extent that standard theories like the CAPM and the EMH are under attack. As Eugene Fama and Kenneth French [2004] put it:

*"The CAPM, like Markowitz's portfolio model on which it is built, is ... a theoretical tour de force. We continue to teach the CAPM as an introduction to the fundamentals of portfolio theory and asset pricing ... but we also warn students that, despite its seductive simplicity, the CAPM's empirical problems probably invalidate its use in applications."*³

More than a decade ago, Bernstein [1995] pointed out that current classical capital ideas are "suspected of suffering from kurtosis, skewness, and other less familiar malignancies," and that they are under attack from the "nonlinear hypothesis" and "overwhelmed by fears of discontinuity rather than pricing volatilities and factors" and "frequently made irrelevant by exotic new financial

¹ "The Adaptive Markets Hypothesis: Market Efficiency from an Evolutionary Perspective," Said Business School Finance Symposium, Oxford, UK, November 8, 2006.

² See Lo, Andrew (2004) "The Adaptive Market Hypothesis – Market efficiency from an evolutionary perspective," *Journal of Portfolio Management*, 30th Anniversary Issue, pp. 15-29; or Ormerod, Paul (2006) "Why Most Things Fail – Evolution, Extinction and Economics," London: Faber and Faber Limited; or Ineichen, Alexander M. (2007) "Asymmetric Returns – The Future of Active Asset Management," New York: John Wiley & Sons.

³ From Bernstein [2006], p.1.

instruments that come in unfamiliar shapes and hedge unfamiliar risks." Bernstein added, "As the mathematics that define these risks grow increasingly complex, the dimensions, contours and limits of risks are becoming correspondingly obscure." He concluded that the effort to abandon the beautiful and coherent logic of classical ideas does not mean that the classical ideas were in some sense "wrong," but rather it reflects on the changing environment in which we live today. In a world that is changing faster than we can grasp, risk seems more difficult to understand and control.

Today, Peter Bernstein [2007] argues that these "Capital Ideas" are not "baloney," despite the attack from Behavioral Finance and the failure of many Capital Ideas to hold empirically. As he put it in his most recent book:

*"Perhaps the most remarkable feature of these ideas is the indomitable power of their influence on investment decisions, even though the theories failed to survive a battery of empirical testing."*¹

Businesses operate in an environment even less subject to analysis and understanding than the game of chess or poker. Microsoft seems to have established its computer market dominance through a combination of almost supernatural sagacity and ruthlessness. Yet, in his book, *Barbarians Led by Bill Gates*, veteran Microsoft developer Marlin Eller emphasizes accidents, serendipity and spontaneous, almost reflexive reactions to threats and opportunities.² As recently as the late 1980s, even Bill Gates thought Windows had no future and that OS/2 would become the standard operating system. The fact is, even reasonable, well-informed economic models have little relevance to businesses. They rarely allow for the uncertain, unexpected, incomplete or unclear. In fact, evolutionary biology offers insights into the phenomenon of failure, insights that may prove instructive for business management and government policy.³

Evolutionary biologists have tracked extinction events over the past 600 million years or so. Of course, the data on such events is much less comprehensive and agreed upon than the data on economic history. Biologists used them to mark the evolutionary calendar. Some suggest that extinction events are numerous and rather regular, occurring roughly every 26 million years. Clearly, extinction seems to obey a power law, that is, a law that is magnified by some power – squared, cubed, to the tenth power or the like. In other words, there seems to be some law governing failure, that is, some non-randomness or predictability with respect to the probability distribution.

Here is where an element of randomness comes in: We know that there will be extinction going forward. We also can elaborate on distributions and probabilities. However, we do not know which of the species is going to become extinct.⁴ This, we believe, is quite similar to hedge funds. We know

¹ From Bernstein [2007], p. xviii

² Edstrom, Jennifer, and Marlin Eller (1998) "Barbarians Led by Bill Gates: Microsoft From The Inside," New York: Henry Holt and Company, Inc.

³ From Ormerod (2006)

⁴ Some evolutionary biologists argue that the more complex a species, the less it's ability to adapt to change and the less likely is long-term survival.

that there will be failure and collapse in the future. We can also assess probabilities. The reason behind sizing positions is the direct result from this fairly robust and difficult to challenge prediction that there will be failure in the future. However, we do not know with perfect certainty which of our funds is next in line to fail and, more precisely, when. We do believe (or hope), however, that we have the skill, experience, and intellectual honesty to deal with these business dynamics, uncertainties and risks in a professional, forward-looking and prudent manner.

The above aphorisms obviously have their limitations. As an allocator to hedge funds, we can skew probabilities in our favor through manager research and operational due diligence, and can protect ourselves from business failure through portfolio diversification. In nature, if you are a frog and a frog-eating snake enters your habitat and there is nowhere to run, you might not have these options at your disposal. As a hedge fund allocator this dire, no-options scenario has no parallel.

References

- Bernstein, Peter L. (1995) "Risk as a History of Ideas," *Financial Analysts Journal*, Vol. 51, No. 1 (January/February), pp. 7-11.
- Bernstein, Peter L. (2006) "The Great Alpha Merry-Go-Round," *Journal of Portfolio Management*, Vol. 32, No. 3 (Spring), pp. 1.
- Bernstein, Peter L. (2007) "Capital Ideas Evolving," New York: John Wiley & Sons.
- Edstrom, Jennifer, and Marlin Eller (1998) "Barbarians Led by Bill Gates: Microsoft From The Inside," New York: Henry Holt and Company, Inc.
- Fama, Eugene F., and Kenneth R. French (2004) "The Capital Asset Pricing Model: Theory and Evidence," *Journal of Economic Perspectives*, Vol. 18, No. 3 (Summer), pp. 25-46.
- Ineichen, Alexander M. (2007) "Asymmetric Returns – The Future of Active Asset Management," New York: John Wiley & Sons.
- Kuhn, Thomas (1962) "The Structure of Scientific Revolutions," University of Chicago Press.
- Lo, Andrew (2004) "The Adaptive Market Hypothesis – Market efficiency from an evolutionary perspective," *Journal of Portfolio Management*, 30th Anniversary Issue, pp. 15-29.
- Ormerod, Paul (2006) "Why Most Things Fail – Evolution, Extinction and Economics," London: Faber and Faber Limited.

Alternative Investment Solutions prepared the information, including but not limited to the charts and graphs, contained within this presentation. Unless otherwise noted, the information used to create these charts and graphs was based solely on information collected and retained in Alternative Investment Solutions' proprietary database and is accurate as of the date so indicated on the particular chart or graph. Third party funds and managers contributed to the majority of the information collected; therefore, Alternative Investment Solutions makes no representations as to the accuracy of such source information and the charts and graphs are subject to change without notice to the recipient. As such, the charts and graphs do not purport to be a scientific or academic analysis; but rather, represent some measure of support for the experientially based opinions of Alternative Investment Solutions. If conflicts exist between this document and the applicable offering memorandum, the offering memorandum takes precedence. Any returns presented may or may not be indicative of the returns of the share class, series, and/or fund offered to you. Your actual returns may be different.

Neither this document nor the securities referred to here-in have been registered or filed with or approved or disapproved by any regulatory authority of any country or jurisdiction, and no regulatory authority has passed upon or endorsed upon the merits of this offering or the accuracy or adequacy of this document. This material is confidential and intended solely for the information of the person to whom it has been delivered and may not be distributed in any jurisdiction where such distribution would constitute a violation of applicable law or regulations.

This document does not constitute an offer of securities. Such an offer will only be made by means of a confidential offering memorandum. This material is confidential and intended solely for the information of the person to whom it has been delivered. Recipients may not reproduce or transmit it, in whole or in part, to third parties.

Past performance is not a guide to future performance.

This document has been issued through UBS O'Connor Limited/UBS Alternative and Quantitative Investments Limited for distribution to Intermediate or Market Counterparty customers and through UBS Global Asset Management (US) Inc. UBS O'Connor Limited/UBS Alternative and Quantitative Investments Limited (authorised and regulated by the Financial Services Authority in the UK) and UBS Global Asset Management (US) Inc. (a member of NASD and SIPC) are subsidiaries of UBS AG.