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INTRODUCTION

Inside this edition of the *Greenwich Roundtable Quarterly* you will be treated to a collection of readings that reflect our continued defensive posture. You may notice that this edition is eclectic. You will also notice a sprinkling of some soft subjects such as behavioral finance. As the worldwide economic and political environment remains in a state of flux, uncertainty continues its grip on the psychology of the markets. China and Iraq continue to dominate the headlines of the popular press. The broad flow of investment and human capital from traditional strategies into nontraditional strategies dominate the headlines of the trade press. The attitude of the members of the Roundtable has always been characterized as contrarian and anticipatory. They are in a perpetual search for managers who can consistently take advantage of inefficiently priced markets or managers who are able to actively influence the outcome of the investment (legally and ethically, of course). As traditional markets continued to disappoint many chief investment officers, we focused on strategies on the road less traveled.

In this issue we will focus on our second discussion of hard assets because of their negative correlation to the financial markets. Our experts here were fascinating storytellers. John Dickerson warned of a looming water shortage. Clark Binkley explained the durable nature of timber returns. Peter Sutton cautioned the investor away from art as an investment but encouraged all to savor their dividends of pleasure. Then we assembled a collection of readings that attempt to guide you through this climate of uncertainty. The discussion on extremism lays the groundwork for the disruptive sociological and geopolitical forces currently at work. Dennis Keegan warned us that markets are not discounting another terrorist event. The discussions on behavioral finance are an excellent starting point for those who wish to learn about the role of psychology and emotion on market participants. Nassim Taleb revealed that people take risks not out of bravery but out of ignorance of the consequences. Woody Dorsey cautioned that fear and greed should no longer be accepted as the only economic motivations. The discussion of trading strategies was useful because of the authors' ability to extract profits without making long-term commitments. Netta Korin advises us to sell when you can, not when you must. She also advised us to never fall in love (with a trade, that is). Hilton Nathanson observes that offering an informed point of view diminishes his edge. Ken Grant reports that trading is not a game for amateurs. Finally, the discussion on the end of the bull market in bonds adds further evidence that making money will not be easy going forward.

At all Roundtable sessions, our speakers were addressing limited partners, sophisticated investors, so the quality of each discussion was exceptional. Hunt Taylor and Ken Shewer were instrumental in selecting our experts for this issue. Standard & Poor's has generously underwritten this journal and is sending it to you with their compliments. For that we are all eternally grateful.

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Behavioral Finance, Irrational Markets, and the Search for Value

Richard Geist, Institute of Psychology and Investing

June 1, 2000

Anecdotal evidence suggests that how we handle our emotions is more important than intelligence, education, experience, or financial analysis.

Interdisciplinary perspectives are important in understanding the psychology of investing. Anecdotal evidence suggests that how we handle our emotions is more important than intelligence, education, experience, or financial analysis at the time of buying or selling investments and how we respond to what others are doing in the market. When institutional and individual investors talk about the mistakes they have made with their investments, they relate that their psychological state overtook their logical analysis of all the data in the decision-making process.

The Internet has changed the psychology of investing, for better or worse. However, many things have not changed, like many people's fundamentally naïve and optimistic attitude toward investing. There will still be bear markets; and bull markets; we'll still have business cycles; we'll still have relative periods of deflation and inflation, although they may be lengthened in nature. But when fundamental valuation methods change (again for better or for worse), when market volatility increases, when one out of two retail trades is done on the Internet without a broker, when e-commerce begins to shift the way a whole culture does business, when investors in different parts of the world can communicate in 1/8 of a second, when more and more investors assume a trading mentality — all of these factors have an impact on our emotional state when trying to make investments. And these factors also have a dramatic effect on how institutional firms market their products and how we begin to structure the relationship between advisors and advisees.

People are subjective investors, neither rational nor irrational, and interpret the same information through different psychological lenses.

There are many arguments about rational and irrational markets and whether people are rational or irrational about the investment decisions they make. Behavioral finance has helped us to understand that markets are not as rational as was widely believed. People are subjective investors, neither rational nor irrational. We all have access to the same information. People are overwhelmed by the amount of information available, thanks to the Internet and the news media. But we all have different idiosyncratic lenses. These lenses are psychological interpreting principles that filter, interpret, and influence our decisions. We should try to understand our idiosyncratic lenses so that they do not distort our view of the market. For example, a money manager bought a small stock at $18 a share, then watched it go to $25. When the company predicted that earnings would be hurt for two quarters, the stock dropped to $13, and the manager wanted to sell all her shares. Although she had an incredibly good understanding of the fundamentals of the company that, in essence, had not changed, her "organizing lens" was prompting her to sell. Her organizing lens told her that when something good happens, something bad is sure to follow. For that company, the stock had gone up, then it went down; therefore, she should sell. Once she realized she was operating according to that organizing pattern, she went back to her fundamentals and didn't sell. The company was bought out six months later at $30 a share.

Anxiety deteriorates the decision-making process from a logical, rational examination to an emotional reaction.

Anxiety is a very disruptive emotion. It changes our holistic way of making decisions insomuch as we regress into an inaccurate focus on one or two factors. Anxiety deteriorates the decision-making process from a logical, rational examination to an emotional reaction. When we are free of anxiety while making an investment, we generally look at something holistically, trying to get as much information from as many different perspectives as possible. When we experience anxiety, the holistic way of thinking changes and we tend to pick one or two variables upon which we make our decision.

In one case, an institutional investor bought a company's stock at its IPO price of $13. The stock quickly went to $30. In a subsequent corrective phase the stock fell back to $20. The investor wanted to sell his holdings although he had a comprehensive understanding of the company and its industry. When he focused solely on the price and the volume of the stock, he thought he should sell, but the fundamentals would have told him to buy more. He sold out at $20 and the company's stock then went on to more than $100 pre-split.

We should try to understand the cognitive and emotional symptoms of anxiety to become better investors. The more we understand the symptoms of anxiety — physical, cognitive, or emotional — the less susceptible we will be to anxiety traps. The Internet and the media create anxiety traps. The amount of information and the volatility in correcting markets also creates anxiety traps. When we feel anxious, our thought process regresses from logical and rational to emotional — we connect words, data, and thoughts by emotions rather than logic — and we act more rashly.

When we make an investment, we are also seeking emotional validation and affirmation that our intellectual judgment is sound.

Another primary reason for mistakes is the connection between our self-esteem and the market's performance. Self-esteem influences our propensity to make mistakes. Feelings of injury lower our self-esteem, which cause us to react in irrational ways. When we make an investment, we are also seeking emotional validation and affirmation that our intellectual judgment is sound. When the market goes against us there is an injury to our self-esteem and a number of reactions tend to occur.

One example concerns an analyst from a major brokerage firm who lowered his rating on a stock from "Buy" to "Hold." When asked why he lowered the rating, he said, "The company's earning came in three cents under what they led me to believe. So my prediction of the earnings was tarnished. To teach them a lesson, I put their stock on 'Hold'." Later, he came back with a "Strong Buy" on the stock. But it was the effect on his self-esteem and feeling injured by management that caused him to lower the stock's rating. The market continues to be susceptible to this pattern of behavior time and time again.

To boost their self-esteem, people seek to admire and bond with experts. Saying I had dinner with Warren Buffet yesterday makes me feel good. The Internet promotes this kind of herd behavior because it makes it much easier to connect with many people, which boosts our self-esteem. People have also turned to "niche investing." They are not investing randomly, but in areas with which they are most familiar. The original investors in Amazon.com were people who understood technology. They were self-assured in their knowledge of how the Internet was going to affect the economy.

I am optimistic about the future. Investors are better educated than ever before. There are business talk radio and television stations in every major city in the country. People want to learn about investing. People have found that the market can be fun and intellectually and emotionally challenging. Baby boomers are forced to become better investors, not speculators, for the sake of their retirement and their children. Investing has become a cultural phenomenon.

I am optimistic about the future. Investors are better educated than ever before.

The entire market is not in a speculative bubble. Aging baby boomers' sense of time is accelerating, which produces a higher tolerance for risk. A faster sense of time creates the belief that pullbacks are temporary. In other words, when time is moving slowly, when your stocks are down you feel that you're in the doldrums forever. When your sense of time is moving quickly, you do not feel that this drop is going to last forever. You are much more likely to buy on the dips. You are more likely to sit through corrections and bear markets. Since 1993 I have predicted that baby boomers would not abandon the market in the face of severe pullbacks. And so far, they have not. Money has been pouring into the market. People have been on the sidelines, but there have not been significant redemptions. There are trillions of dollars sitting in money market funds waiting to come back.

Money flows are still strong. The intergenerational inheritance to baby boomers of $10.4 trillion will propel the stock market for next 20 years. Baby boomers love the stock market. They need the stock market. They want to be in the stock market. They will learn as much as they can about the stock market. ■

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BEHAVIORAL FINANCE, IRRATIONAL MARKETS, AND THE SEARCH FOR VALUE

Robert J. Shiller, PhD, Yale University

June 1, 2000

Behavioral finance studies the psychology of financial markets . . . fusing the interdisciplinary insights of economists and other social scientists.

Behavioral finance is the study of the psychology of financial markets. As one of the organizers of the behavioral finance conference at the National Bureau of Economic Research (NBER), my perspective is that of the academic. In the academic community, different departments often do not communicate with each other. The NBER believes in the need to fuse the interdisciplinary insights of economists and other social scientists. It seems fundamental that we incorporate insights from different branches of inquiry. Of course, conventional economic theory is extremely valuable but it should also take into account other aspects of the social sciences, including psychology.

My book called *Irrational Exuberance* explains behavioral finance in detail. It examines the level of the stock market from 1987-2000, a time that remains a source of concern to many people. The book analyzes the stock market situation from both conventional economics and behavioral finance standpoints. Alan Greenspan used the term irrational exuberance in December of 1996. Despite the fact that the term was used in an offhand, nebulous manner, stock markets all around the world dropped sharply immediately after he uttered those words.

Why did people react so strongly to that statement? Many were concerned that some kind of investor psychology had been driving the markets but did not know for certain. My book aims to prove the influence of investor psychology. Irrational exuberance describes quite accurately what had been going on in the stock markets, and I believe it remains a national policy issue of great importance.

Irrational exuberance describes quite accurately what had been going on in the stock markets, and I believe it remains a national policy issue of great importance.

The overpricing of the market affected our decisions and distorted economic decisions in many ways. It encouraged people to invest too much in new start-ups and business expansions and too little on other matters such as our own human capital, education, or preserving jobs. There was an element that thought the stock market would be the solution to all our problems — that has proven to be an unfortunate delusion. The savings rate hit rock bottom. People were borrowing against their houses to buy stocks. Other important issues like Social Security were neglected. Given that so many believe that stocks take a random and unpredictable path, and that it is impossible to outperform the market without assuming additional risk, the underlying question we should have addressed was, “How can society share the risks of depending almost entirely on the stock market?"

The major element in the crash of 1987 was a "downward feedback loop." Prices started going down, people saw them going down, so they decided to sell.

When the market crashed on October 19, 1987, I surveyed individual and institutional investors with two questions: "What were you thinking on that day?" and "Why did you buy or sell on that day?" The conclusion reached is this: The major element in the crash of 1987 was a "downward feedback loop." Prices started going down, people saw them going down, so they decided to sell. That caused prices to go down further, and so on. People were not reacting to any specific news, had no specific answers or explanations. There was something happening and so they decided to sell.

Since 1982 an "upward feedback loop" lured more people into the market. An amplification mechanism (the news media) was fundamental to this speculative bubble. The inflation-adjusted S&P 500 Index tripled in the five years from 1995-2000. The NASDAQ went up six-fold over the same time. When in American history had the stock market tripled to a record level? It happened before in the 1924-1929 period. Incidentally, earnings have not done as well. Prices have gotten ahead of earnings. Unfortunately, as in the past, there is not a single, simple explanation for these events, but a confluence of many factors is responsible.

The greatest precipitating factor to the 1995-2000 market rise was the invention of the World Wide Web.

Of the many precipitating factors to the 1995-2000 speculative bubble, the most important was public reaction to the invention of the World Wide Web. The stock market shot up significantly with the creation of the Mosaic and Netscape browsers after 1994 because the public saw them as evidence of rapid technological progress. History points to many technological advances — the railroad, the automobile, the airplane, the radio, the computer, and the television — that created fundamental restructurings of our economy. The significant technological advance offered by the World Wide Web is that it is a user-friendly device for linking not just computers, but people. It encourages participation and is a hands-on experience — what psychologists call "learning by doing," which is the most fundamental form of learning.

The convergence of the recovery from the recession of 1991 and the random association of the Web introduction with long-term business expansion created growth in profits; it created the impression of a new era. "New era" thinking, the idea that this time is special, contributes to speculative bubbles. Historically, there were impressive-sounding new era theories. In 1901, 1929, and 1966, the three main stock market peaks, the experts were very convincing in proclaiming that the economy was entering a new era.

Other factors contributing to the market's rise were the economic recovery of 1991 and the growth of corporate profits. Another factor was the amplification mechanism, the feedback loop, as a way of amplifying the effects of the precipitating factors. A consequence of amplification mechanisms is that people have high expectations and historically high confidence in stocks. People now believe in reversals and buying on the dips. The experience of seeing the rebound from the 1987 crash created a strong psychological impression that remains ingrained in investors' minds.

Cultural factors such as the news media play a part in drawing our attention. The financial markets generate millions of prices and the daily data in the newspaper is mind-boggling. People do not know what to make of it. Newspapers are in the business of attracting our attention and telling stories. The human mind responds more to storytelling than to abstract data. The news media then creates a mindset that alters and encourages the speculative boom.

Attention is an important psychological mechanism that is basic to intelligence, but it is not perfect. Usually people make errors because they are not paying close enough attention to the right issues. One aspect of attention is its social component. We tend to pay attention to (and neglect) the same things as other people. The media lavished attention on the O.J. Simpson trial and the death of Princess Diana. Today the media's (and society's) attention disproportionately is on the stock market.

Psychological factors, such as "anchoring" lead to errors in judgment. People tend to anchor their decisions in the belief that markets are appropriately valued at whatever level currently exists. And overconfidence is confused with intuition. People feel very strongly that they know whether the market is going to go up or down. Psychologists have documented the inferiority complex, people who think they are below average and have no confidence in themselves. However, a far more common syndrome is overconfidence. Most of us think we are above average and this intuitive judgment is very deep in our psyche. Ultimately the plausibility of stories or theories is reinforced by our underlying intuitive judgment, giving us the self-confidence to trade in the market.

Psychological factors lead to errors in judgment. Overconfidence is confused with intuition.

The stock market is *not* a good long-term investment when it is overpriced. The financial advice to invest in the stock market, diversify, and then buy and hold for the long term — defined as five, 10, 15, or 20 years — will not work well when stocks are overpriced. Over time, that overconfidence erodes. The high market levels of 1987-2000 were reached partly because of the buy on the dips feedback loop and partly because of exaggerated attention given to stocks.

We need to expand our markets. Derivatives on local real estate markets and markets for claims on occupational incomes would provide more appropriate hedges at the household level. The creation of new markets would allow people to invest more widely and not be restricted to what they see as the only game in town — stocks. ■

Dr. Robert J. Shiller is the Stanley B. Resor Professor of Economics, Cowles Foundation for Research in Economics, Yale University and fellow at the International Center for Finance, Yale School of Management. He is Research Associate of the National Bureau of Economic Research, a fellow of the American Academy of Arts and Sciences, a fellow of the Econometric Society, a member of the American Philosophical Society, and a recipient of a Guggenheim fellowship. He has written widely on financial markets, behavioral economics, macroeconomics, real estate, statistical methods, and on public attitudes, opinions, and moral judgments regarding

markets. He has written several books, including Market Volatility*, 1989; and* Macro Markets: Creating Institutions for Managing Society's Largest Economic Risks*, 1993, which won the 1996 Paul A. Samuelson Award, TIAA-CREF. His book* Irrational Exuberance*, 2000, won the Commonfund Prize and was a New York Times Nonfiction Bestseller.* The New Financial Order: Risk in the 21st Century*, 2003, was listed as one of the ten best business books of 2003 by* Business Week *magazine. He is co-founder of Case Shiller Weiss, Inc. in Cambridge MA, an economics research and information firm, and of Macro Securities Research, LLC, a firm devoted to the securitization of new risks. Dr. Shiller received his PhD in Economics from the Massachusetts Institute of Technology in 1972.*

Behavioral Finance, Irrational Markets, and the Search for Value

Alan Turner, Stock Management, Inc.

June 1, 2000

As a pension fund fiduciary, my responsibility is to weigh the adequacy of pension assets to fulfill commitments to the pensioners.

As a pension fund fiduciary, my responsibility is to weigh the adequacy of pension assets to fulfill commitments to the pensioners. I'm involved in the markets to invest, not to speculate. My responsibility is to weigh the adequacy of pension assets to supply the real cash required to fulfill commitments to the pensioners. Therefore I need to know what's real as well as relative if I have any hope of making the right choices among all the possible investment options the market offers.

The market situation in the year 2000 is frustrating for a pension fund financial worker. In 1998, managers were in the process of re-evaluating the risks for their pension portfolios. At that time, I came to the conclusion that overreliance on benchmarks had destroyed the flexibility necessary to preserve capital in the short term — and potentially in the long term — because bad decisions were made during times of market stress. The problem remains that the benchmarks themselves have been corrupted due to volatility and recurring changes within the index itself. The system has become too reliant on relativity and absolutes are mostly ignored. Pensions must deal in terms of absolutes each month and for years to come, so our particular situation has come close to a crisis state.

Responsible fund managers cannot evade the responsibility for estimating what will happen in the future, while protecting monthly and long-term assets. Benchmarks are a reflection of a bullish past and have become an easy way to explain the market, but markets are too complex for a simple explanation or, as I see it, an oversimplification. Benchmarks may lead you to the belief that a portfolio loss is not so bad in relation to a larger loss in the index; however, it is still a loss — an undeniable, absolute reality.

Economists and investors talk about "everything reverting to the mean," but which mean do they mean? If the beginning and ending points that are used are different, they will arrive at different means.

Employing equations to measure future market behavior is as complex as the markets themselves. Equations have limits that have historically stayed within ranges. Economists and investors talk about "everything reverting to the mean," but which mean do they mean? If the beginning and ending points that are used are different, they will arrive at different means. As a pension fund fiduciary, you need real numbers for the real people you represent. Every evaluation must take risk into consideration and it is your obligation to strive for adequate coverage. Adequate coverage for a pension fund is at least two times its obligations. Pension funds indexed at, say 1.2, carry the risk that a bear market could reduce them to where liabilities significantly outweigh assets. And if the poor decision is made to sell at the bottom, the fund will take a very long time to recover. Our search for value depends upon avoiding the complacency that leads to the belief that you can't beat the indexes.

Several interdisciplinary excesses are in place that need to be worked off . . . including too much leverage, selfishness, complacency, over-reliance on faulty benchmarks, greed, stock options, and excessive earnings multiples.

The stock market is a reflection of society and greater attention is now being paid to it. The market can be overpriced or underpriced, stable or unstable. Opportunities may come and go. In this day and age, the key to survival is to work the differentials, not search for correlations to the past. In order to find the absolutes, differences and similarities need to be identified and accounted for.

The market is headed for a correction, and we cannot continue to rely exclusively on benchmarks. Several interdisciplinary excesses are in place that need to be worked off. The excesses are based on assumptions that have become unreliable, yet most of these assumptions are not questioned, and are made in hindsight. These excesses include too much leverage via rote use of system models, selfishness, complacency, over-reliance on faulty benchmarks, greed, stock options that dilute company ownership, and excessive earnings multiples.

Buying on the dips has been around since the institution of the market. I view it as a hasty version of the "buy low/sell high" tenet of creating wealth, although the selling half of the principle seems to have been forgotten because of current excesses. Yet I am not pessimistic about the next 10 or 20 years. While it's the long term that counts for pension fund management, the needs of those who are counting on today's price cannot be overlooked.

What is needed is a way to integrate rationality and reality into algebraic expressions for change

The market is much more diverse than the special discipline studies are showing. I propose that what is needed is a way to integrate rationality and reality into algebraic expressions for change — change that takes place over a significant period of time and that may or may not be perceived.

Reality is captured along a timeline. The real value of a stock price is established the day it is bought or sold. The real value of the price of a house is set the day it is bought or sold. In between buying and selling points in time, relative market values fluctuate. Fund fiduciaries need to find a way to account for flexibility and the value that is reflected by an absolute action taken at a specific time. I would like to offer a framework for reality, or how to find value in a financial world now based solely on relativity. I suggest a modification to our basic math to include algebraic expressions of change and a guide marker to establish when, how, and why reality replaces illusions or delusions.

A great search for value is beginning as the markets bring down excesses; there is much room for hope. The landing from the bull market's excess traced from 1948-1999 was very difficult, but we are entering a period where the search for what is real will prevail. A key to survival will be the ability to adjust continually and harmoniously.

Success will depend upon the recognition of a mistake before it consumes the value it had intended to create. ■

Mr. Allan Turner founded his own consulting company, Stock Management, Inc., in 1984. Mr. Turner has more than 40 years experience in the financial markets as a fiduciary, a trust portfolio officer, as well as a buy side and sell side analyst. He also headed up the St. Regis Paper Company Investor Relations Program from 1977-1984.

Behavioral Finance: Psychoemotional Perspectives on Investing

Woody Dorsey, Semiotics Partners LLC

May 15, 2003

The ancient Greeks developed a system of medical diagnosis called semiotics. In the financial context, the market is our patient and our job is to diagnose the markets. Human beings have always interpreted behaviors, whether it was the habits of the wooly mammoth, or changes in options volatility. Behavioral finance is a rediscovery of our basic competitive motivations, our common sense, and perhaps our common cunning.

Behavioral finance is not about price-to-earnings multiples or the behavior of distressed securities. Rather, it is about the study of distressed securities traders.

Popular investment philosophy (which pre-dates modern behavioral finance theory) is quite ill-defined. It's been a convenient catch-all for a variety of perspectives about outsmarting the herd. All successful investors are contrarians by default. In order to do better than the crowd, one has to be ahead of it. There is a persistent behavioral thread of contrary opinion that stretches from ancient human knowledge through market lore all the way to behavioral finance. When Homer spoke of wily Odysseus, he was talking about our hard-wired human characteristic for trying to outwit our competitors.

Plato's famous allegory The Cave is an equally apt illustration. The herd is still fascinated with the shadows on the cave wall, the projections of Wall Street, or the pixels on their Bloomberg screens. Adam Smith, the pop star of economics, also known as the "invisible hand" man, came by his behavioral ideas from the physiocrats and the philosophes of France who preceded him.

These ideas have always existed and have been borrowed or passed on precisely because human motivations are immutable. There's no difference between Adam Smith's invisible hand, John Maynard Keyne's animal spirits, and the idea of a "Mr. Market." They are all descriptions of the same mysterious motivations of people in the marketplace. Daniel Kahneman and Amos Tversky were the prospectors, as they mined the early behavioral ore. Their prospect theory officially initiated the study of "economic man" rather than of economics.

When we study humans, we suddenly enter the realm of psychology. Behavioral finance is not about price-to-earnings multiples or the behavior of distressed securities. Rather, it is about the study of distressed securities traders. Any and all information regarding humans — from anthropology to zoology — may provide new fodder for behavioral finance.

We have so little experience and expertise in markets because of the persistent denial of the psychological component.

We can send someone to the moon and we have mastered the genetic code. We have language, mechanics, and knowledge of these things. But any equally precise language mechanics or knowledge of the market doesn't exist. There is no cohesive economic science about making money in the market. We have so little experience and expertise in markets because of the persistent denial of the psychological component.

We are taught to believe that markets can be understood from a purely rational perspective. René Descartes came down rather heavily on the mind side of the mind/body problem when he concluded, "I think, therefore I am." This may explain, in part, the preference for rational markets.

Perhaps the peak in this one-sided cognitive concept of efficient markets and humans as purely rational, economic robots reached its acme in the "wrong term capital" hedge fund bubble, in which the best mathematical rationality team managed to lose the majority of investors' money. If that didn't signal the end of the efficiency era, the dot-com bubble, which I called E*greed, certainly did.

In order to proceed, new strides need to be taken in behavioral finance, in the direction of cognitive science. My research initiative looks at the cognitive structure of humans as a guide to the markets. The primary and most simple fact of cognitive science is that people have three distinct brains that perform three distinct functions.

Market analysis to date has generally mirrored the duality of Descartes, with fundamentals on one side (what we think about the market), and technicals on the other (how we act in the market). The missing link is the "psychologicals" (how we feel about the market). My innovation, the Triunity Theory, is a reflection of these three components, which are in perpetual interplay.

It's interesting to see how these different forces are at work; and in very strong trending functions, they're all going to work together. Which is why any school of thought — technical, fundamental, or psychological — can always find a claim to fame in very strongly trending markets.

We are rational people, but we also are irrational, and we also are instinctive. These three functions are as present in markets as they are in all of us and are in a perpetual interplay.

We are rational people, but we also are irrational, and we also are instinctive. These three functions are as present in markets as they are in all of us and are in a perpetual interplay. Irrationality has a negative connotation for most people. It infers that feeling is taking precedence over thinking which is, of course, bad. Irrationality is considered fuzzy and unmanageable unless our market position is suddenly making a lot of money.

Alan Greenspan, our fearless Fed leader said, "There is one important caveat to the notion that we live in a new economy, and that is human psychology — which appears to be essentially immutable." These immutable laws of psychology, whatever they may be, are not in any graduate school curriculum.

In order to quantify the psychological component of the market, I have proposed a basic unit of emotion called an emotum. I have conducted a polling process that collects positive and negative emota from about 100 listening posts that represent the semi-professional cast of investors. The sentiment database is the source for various semiotic sentiment studies. A white paper, "The Semiotics Sentiment Model," shows how a very simple sentiment model outperformed the S&P 500 by 257% from 1998 to 2003.

It is rather amazing and hard to believe that such a simple sentiment model could be so robust. But that is the point. We like to believe in complex rational models and we don't necessarily understand market emotions. The sentiment model is based on the observation that price highs and lows are characterized by quite different correlations between price and sentiment, contrary to the prevailing and parochial notion that fear and greed are the only two market emotions and are polar opposites. The notion that investors must conquer their emotions is equally as absurd. We have always been and will always be emotional. Irrationality rules, and it may have rules.

We have always been and will always be emotional. Irrationality rules, and it may have rules.

Fundamentals may be better described as transient investment themes. The extreme of every economic era throughout history is defined by a compelling concept that becomes so simple and popular that it effectively becomes a slogan. Memetics, the study of the propagation of information, provides some insight into this phenomenon. A meme, similar to a gene, is an information code transmitted from person to person. The semiotics memetics model suggests that when these transient investment themes enter the propaganda realm, they finally lose their power to attract new investors. Examples include the "Fantasia" deflationary climax in the fall of 1998, the E*greed extreme of 2000, and the "Equiphobia" extreme of early 2003.

Memetic themes can be identified and measured through a slogan search. For instance, from January 2001 to April 2003, a slogan search for Iraq as a media headline had a negative .85 correlation with the S&P 500. In fact, extreme readings in the Iraq slogan corresponded almost exactly to the stock market lows of October 2002 and in March 2003. Memetics works and it makes ideas such as information cascades and viral propagations more practical.

I have made a direct study of market trends called Trend Duration Analysis. The persistence of bidders or the exhaustion of sellers alludes to the physical nature of attention spans in the market. The duration characteristics of market trends demonstrate discreet repetitive trend duration modes; the market repeats itself, too. The essence of behavioral finance is the systemic repetition of habitual errors. In the same way that memes are the metrics of fundamentals and emota are the metrics of psychologicals, price bars are the metrics of technicals. These three functions of the market, my Tri-unity Theory, may lead toward a more optimized behavioral finance model that is able to predict some of the markets some of the time.

The essence of behavioral finance is the systemic repetition of habitual errors.

The invisible hand does leave some fingerprints. The herd does leave footprints. The risk to the adulterated development of the behavioral finance school, however, is that there may be a rapid and vapid co-opting of behavioral finance schemes by Wall Street. There are hosts of behavioral departments working on behavioral ideas that will eventually blossom into behavioral funds of all sorts. Expect to see lots of

Behavioral finance is an enormous opportunity for an intellectual and practical redirection of how we understand ourselves, and by extension, how capitalism can be both better understood and better managed.

behavioral shingles blowing in the wind. After all, one of the behavioral tenets is that we are all herders, hard-wired to imitate whatever we perceive as accepted and useful.

The opportunity for the behavioral school lies in the higher ground of potential societal benefits. Behavioral finance is an enormous opportunity for an intellectual and practical redirection of how we understand ourselves, and by extension, how capitalism can be both better understood and better managed. How these risks will interweave in the narrative of intellectual history is difficult to say, but the alternative asset industry may be where Random Walk Theory and the mutual fund industry were 20 years ago.

There is much more to learn about both human and market behavior. There are also things that we may never learn about either. I leave you with this semiotics meme: observe everything, believe nothing, and invest solely based on the behavioral errors of others. ■

Woody Dorsey runs the research firm, Market Semiotics, which provides insights into behavioral and emotional influences on the market. Mr. Dorsey has developed a new hypothesis he calls the Triunity Theory. He is also involved in a hedge fund that relies on behavioral research to provide trade signals. Mr. Dorsey has published a book called Behavioral Trading. *Mr. Dorsey studied economics at Amherst College and he's never worked for a Wall Street firm.*

Behavioral Finance: Psychoemotional Perspectives on Investing

Robert J. Shiller, PhD, Yale University

May 15, 2003

The efficient markets revolution in the 1970s was important because it brought a mathematical discipline to finance. We now understand derivatives pricing; we understand the capital asset pricing model. Such things are vitally important, but people in these fields may feel threatened by behavioral finance. They shouldn't because new behavioral research is exactly what is needed in order to apply their insights, because their idealized models don't fully fit the world.

The capital asset pricing model is a wonderful description of how the world should work. But it doesn't describe the world we live in. It's where we're going; not where we are.

My book, *The New Financial Order*, discusses the application of both behavioral finance and mathematical finance and gives us a sense of how to manage risks. The whole capital asset pricing model is a wonderful description of how the world should work. But it doesn't describe the world we live in. It's where we're going; not where we are.

New information technologies — computers, the Internet, teleconferencing, etc. — are wreaking fundamental changes in our world. They already have — it's been amazing what's happened in the last 10 years — and in the next 10 or 20 years, or more, they are going to produce fundamental changes in our society, including finance. The whole finance profession will be transformed.

My forward view includes three elements of the new financial order: the mathematical, behavioral, and technological. It's not really aimed at portfolio managers, however. It's aimed at the finance community in general. It's about new products and new ways of doing things that I think are likely to come true in the future.

People find it difficult to recognize and respond to big abstract risks. Human beings are designed to respond to vivid, in-your-face experiences.

René Descartes thought that the brain is organized into a rational and irrational system and we should all strive to let only our rational system function. But modern neuroscience has shown that there is no human action without the emotional or irrational component of our thinking. Behavioral finance includes the "risk as feelings" hypothesis: People find it difficult to recognize and respond to big abstract risks. Human beings are designed to respond to vivid, in-your-face experiences, such as when a wild animal approaches — adrenalin starts flowing and quick action is taken. But if only some vague possibility of risk lurks, it's difficult for people to react decisively; most people will just postpone acting and not think about it.

Behavioral finance gives some idea of how to readjust our institutions so that these reactions are taken into account. Behavioral finance can make new things possible in an unexceptional way; that's often the way progress occurs. For example, the airplane wasn't feasible until the right internal combustion engine was ready; then suddenly the idea of being able to fly became feasible. The same may be said for many ideas — some little obstacle disappears and then things blithely assumed impossible suddenly become possible.

I have six ideas for a new financial order — and it's new information technology that makes them possible.

First, the insurance industry could create policies for values, our ordinary riches, and the things that matter to individuals. I suggest livelihood insurance, an extension of disability insurance to cover labor market risk. At present you can buy an insurance policy that will pay you an income for life if you become physically disabled. But what about an analyst who suddenly gets laid off because of the change in the profession or an auto worker who is let go because a Chinese factory won an important contract? Those are risks just like disability that we can insure against. Home equity insurance is a related concept. Right now we have fire insurance that insures houses against loss of value because of a fire. But we don't have insurance policies against declining economic conditions, which is a much bigger risk.

Second, the securities industry could create new securities that represent claims on income flows. The stock market is a market for claims on corporate profits. But corporate profits are, after tax, under 10% of Gross Domestic Product. They're not very big. We can create markets for claims on the more than 90% of GDP, and we'll have a market for risks that's much more comprehensive and which makes many more things possible. For example, it might help with livelihood insurance because insurance companies can use these new securities markets to get rid of the risk they'd undertake by taking on policies.

New technology makes entirely new financial products possible — from livelihood insurance to inequality insurance to cross-sovereign risk control agreements.

Third, the banking sector and the lending community could make loans and their interest rates contingent on the income of the borrower or on an index of incomes of people in the same occupation or category as the borrower. It would reduce bankruptcy risk and produce better risk management. Milton Friedman said people should sell shares in their income as a way of reducing risk. That's basically the idea of changing our lending institutions so that people are essentially selling shares on their salaries.

Friedman gave two reasons why it wasn't possible. One was (irrational) public condemnation. I think times have changed and it wouldn't be condemned now. The other was that it would be too costly to administer. Thanks to new information technology, the cost of tracking people through their lives has gone down significantly, so I think it will start to happen.

Fourth, the government could issue inequality insurance. It would redefine the progressive tax system by fixing the after-tax Lorenz curve. It's a way of protecting society from a gratuitous increase in the level of inequality, which may increase even more in the wake of new technology. It might mitigate feelings of oppression and protect against violence.

The risk of inequality is perhaps the most important national issue today, and it's not talked about enough. In 1970, the bottom 40% of American families earned 18% of the national income. By 1998, the bottom 40% earned 14%. If we extrapolate this trend, it won't be too many years before the bottom 40% of families are earning less than 10% of the national income, and my question is, do we want that to happen? It's not going to happen because people suddenly become lazy; it's going to happen because of foreign competition or computers replacing jobs. It would make for an unpleasant society that nobody would want to live in.

The risk of inequality is perhaps the most important national issue today, and it's not talked about enough.

Fifth, inter-generational social security insurance would guard against big risks not shared by the elderly and the middle aged. It is an idea motivated by mathematical theories of finance that apply risk management. If risks are already shared, there's not much to be gained; if they're not shared, you can move to where you get the welfare gains. I think a big opportunity is between the generations — between elderly, middle-aged, and working and young people — and the social security system should be reframed on that concept.

Sixth, international agreements should be implemented for risk control. World leaders, with a little lesson in basic finance and risk management, would make risk-managing deals between countries, just like companies do. Governments would arrange a GDP swap. The mathematical theory has enormous social welfare benefits, but it seems impossible now. I think that as enlightenment proceeds, it may eventually happen.

These six changes represent a model of radical financial innovation. I don't mean radical in the sense of left-wing; I just mean fundamental. In history, we have seen a number of major changes in our financial institutions that were truly radical and seemed impossible. I'll give just two examples: one is life insurance; the other is social security.

Life insurance was developed in the 1600s in London, and was made possible by some probability theorists. In the 1600s someone got the idea to develop life tables and then create an actuarial science and a whole business that manages the risk of early death. It was beautiful and a few intellectuals understood it and bought life insurance. But most people didn't buy it because they couldn't understand the concept. Most people didn't conceive the need for life insurance. One of the critical inflection points in making life insurance acceptable to the masses was a framing issue in changing the name from "death" insurance to "life" insurance.

One of the critical inflection points in making life insurance acceptable to the masses was a framing issue in changing the name from "death" insurance to "life" insurance.

Life insurance did not come into its own until the 19th century. Hardly anyone would get on their horse and ride into town for life insurance; it had to be sold. The advances in marketing and packaging developed during the 19th century overcame the public's resistance. Now everyone has life insurance; we don't even think about it. It used to be very expensive and a serious thing to buy because life expectancy was 45 years and there were young children to worry about. It was a big decision to buy life insurance.

Life insurance is a somewhat obsolete institution because it's not addressing the big risks we face today. The big risk is the risk of economic change that can affect all of us in unpredictable ways.

Now with life expectancy up to 75 or 80 years, it's cheap. It's a somewhat obsolete institution because it's not addressing the big risks that we face today. It's not early death. The big risk is the risk of economic change that can affect all of us in unpredictable ways.

Social security developed in Germany in the 1880s. Our current system in the U.S. is almost a carbon copy of it. It took us until 1934 to adopt it, but it's the same system invented in Otto von Bismarck's Germany. It solved the very important problem of elderly poverty.

Information technology made social security possible in Germany in 1889. We don't think of the 19th century as a century of rapid progress in information technology, but in fact it was. It included simple things we take for granted, such as the invention of cheap paper. Paper in the 18th century was made out of cloth by hand, and it was expensive. The U.S. social security system relied on the inventions of wood pulp paper; carbon paper; printed forms; filing cabinets; a better civil bureaucracy; and a better, cheaper postal service.

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People doubted the German government in 1889 when they set up the social security system. They couldn't fathom a system that could pay regular contributions to the government for 40 years, that records could be kept for all those years, and at retirement a regular payment would be received. It would have been practically impossible in 1800, but by 1889, it was just possible and then it happened.

Information technology drives change in society and in the financial arena and we are so vastly ahead of 1889 information technology that I think it's time to rethink all our institutions and bring financial theory into better focus and better application. ■

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Behavioral Finance: Psychoemotional Perspectives on Investing

Nassim Nicholas Taleb, PhD, Empirica LLC

May 15, 2003

The 1990s was the decade of the brain — the scientific literature discovered that there are two ways in which we behave: reasoning and nonreasoning. We have two brains: one that we use in the classroom and one that we use while acting, reacting, or trading. Economic Nobel Laureate Daniel Kahneman calls it System One/System Two. In neurobiology literature, it's more complicated. We have three brains: the neocortex, which decides on the cognitive tasks; the old reptilian brain, controlling basic functions; and the emotional, limbic part of the brain, centered on the amygdala.

The difference between System One and System Two can be explained as follows. Kahneman and Amos Tversky asked mathematical psychologists a primitive mathematical question on the spur of the moment, and most of them got it wrong. They should have known better and in fact, they did know better; it's just that they used the wrong system impulsively. My experience of the phenomenon, what I call street smart versus academic smart, is that each us has two identifiable brains, depending on the function required. When you brake abruptly at a traffic light, you use Brain One, and when you think about something deep — for example, when you take a test — you use Brain Two.

There is very little correlation between cognitive intelligence and sound behavior. We're discovering more and more about what drives human behavior, and how you have to shield yourself from yourself. The dichotomy explains why people with high degrees — for example, high degrees in mathematics — when put on a trading desk, behave in a very primitive way.

The problem is that behavioral finance won't take many people to the bank. I haven't seen many dollars coming uncontrovertibly from its ideas so far.

The general problem is that I don't quite believe behavioral finance will take many people to the bank. I haven't seen many dollars coming uncontrovertibly from its ideas so far. Some may cite a very nice example of a trader who went short on NASDAQ in 2000 according to the principles of behavioral finance. But what about those who went short on NASDAQ in 1996 or 1997 and are now pumping gas? There is a logical inconsistency in saying that "markets are irrational, hence I am going to perform a coherent trading strategy." It's nonsense.

If markets are irrational, then they can get even more irrational; if NASDAQ 5000 was possible, why not NASDAQ 10,000? Many people have benefited from a survivorship bias, people who went short on NASDAQ in March 2000 because they got in at that time and had capital left — they read the books that discuss bubbles and tulips in 1999 and they had some money left in the bank. But those who went to the bookstore too early, in 1992 or 1993, are now out of business. I don't believe in the effectiveness of using behavioral finance to formulate a trading strategy.

There are some tricks traders can use based on the discoveries of behavioral finance. I am a trader; I am also an empiricist and I like to see helpful hints of a very practical nature. Psychologists have discovered a few more things about human nature, which can be applied in trading and in fund-of-fund and hedge fund investing, of course with some well-documented biases.

Most people don't quite understand the risks they are taking. Psychologists asked people to give them a range for security prices that they believed had a 98% probability of not being violated in either way over a period of time. Some asked respondents to give them the future upper and lower limit for a set of securities over a period of time — anything from cattle to the GNP of Turkey to the S&P 500. They were off 15%-35%, not unexpectedly. The 2% confidence interval turned out ex post to be between 15% and 35%. Clearly, people are fooled by randomness in the sense that they tend to think things are less random than they are. Because when you look backward in the past, there is an illusion of things being deterministic.

People are fooled by randomness in the sense that they tend to think things are less random than they are. Because when you look backward in the past, there is an illusion of things being deterministic.

Both psychologists and economists have studied randomness but psychologists know a lot more about the topic than economists. Psychologists study human nature — how we deal with randomness — whereas economists have tried to predict random events and as humans they're not terribly good at predicting. Economics is not a science that typically has commanded a lot of respect in trading circles.

There is also the fallacy, or systematic confusion, of steady returns for positive alpha. For example, there is a trading strategy that has no alpha, (positive or negative) and you make a dollar on it every month. Year one, you buy a country house. Year two — a dollar, a dollar, a dollar. Money under management explodes. Now you buy a chateau. You buy whatever you want; you start accumulating. And then one month, you don't make your dollar; you lose $99. So you write a letter to your investors. It costs 37 cents but you don't yet need to sell the chateau. This is an extreme case of negative skewness, negative optionality. Of course, you're going to suffer some pain here, but you have had 99 months of pleasure and one month of pain. You go to Venice, unwind, come back, and start from scratch. Here is a strategy that has 99% probability of making a dollar and 1% probability of losing $99. Most humans would love that kind of strategy at fair value, even if they initially knew they would have one month of pain because the pleasure derived from 99 months is worth it.

Then something else happens. After making money for 14 months, you start believing your own story, thinking the trade has alpha — not to add something called moral hazard because there is a divergence between the interests of the trader and those of the end investor. Kahneman states that most people in financial markets take risk not out of bravery and courage, but because of ignorance of the risks. Their brains cannot truly believe something bad is going to happen. Therefore people construct packages that have negative skewness, where all the risk is put in one narrow pocket, hiding randomness under the rug. All the concentration of randomness goes into one brief but intense period. Generally, people have a preference for these kinds of payoffs with other people's money. Instead of making a dollar 100 times, why not 50 cents 500 times? The losses are not theirs. People get sucked into them and even if they know the nature of the game, after a while steady income lulls them into thinking, "Oh, this package is great. This loss of $99 will never happen again, no, of course not. Times are different."

It's a very simple point that small odds are poorly understood. Paul Slovic wrote a paper titled, "On the Preference for Insuring Against Small Probable Losses as Compared to Large Improbable Losses." You get the point from the title alone that people don't think about small odds; you have to subsidize them to pay for insurance against a very large loss. We have known about the bias in the behavioral and insurance literature since the 1960s and 1970s.

I wonder when statisticians are going to figure out that the statistical probabilities of improbable losses are absolutely the worst predictors of the regularity with which they'll occur. How many hundred-year floods have we lived through? Statistically maybe we should have lived through one, but we've lived through seven now at this point.

Knowing that a market is irrational doesn't allow you proactively to use the information. It's irrational and therefore has no logic. I'm an empiricist. I work with very small little tricks that I understand very well, and I get very queasy when I start hearing about irrationality of markets because I need to work with very specific pockets of irrationality rather than general irrationality. Attempting to use the same behavioral effect that drove NASDAQ to a ridiculous valuation is not testable enough. I stated the out-of-the-money problem earlier by saying that people like to sell the small odds, the long shots. It's been tested several ways using econometrics and can be tested by behavioral methods on the preferences of patients in hospitals or looking at people's brains. ■

Dr. Nassim Nicholas Taleb is the founder of Empirica LLC, a volatility research laboratory and trading operation in New York, New York. He is also a fellow at the Courant Institute of Mathematical Sciences of New York University where he lectures on risks in derivative models. Dr. Taleb held trading positions with major derivative houses and worked independently on the floor of the Chicago exchanges. He was inducted into the Derivatives Strategy Hall of Fame in 1998. Dr. Taleb is the author of Dynamic Hedging *(1997); and* Fooled by Randomness *(2004), translated into 15 languages. His next book,* Gambling With the Wrong Dice*, is an essay on problems with probability distributions. Dr. Taleb earned an MBA from Wharton and a PhD from University Paris-Dauphine.*

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Extremism, Economic Uncertainty, and the Investment Implications of U.S. National Security Policy

Ashton Carter, PhD, Harvard University

October 16, 2003

The next attack won't necessarily be Islamic; it could happen in some other flavor.

In the summer of 2002 I was part of a congressional delegation led by [Connecticut Congressman] Christopher Shays and [Indiana Senator] Richard Lugar. We travelled throughout Russia, around its missile silos, that is. We visited a place called Novosibirsk, one of two places in the world where smallpox culture is kept. At least we hope there are only two — one in Novosibirsk and the other in Atlanta at the Center for Disease Control and Prevention. We saw all the garden spots. We went to Shchuch'ye, which looks like a big wine cellar, except that all the bottles contain nerve gas. It covers many acres. We went to another location where we're in the process of destroying the shells, and to a huge fortress out in the steppes where we are going to begin entombing Russian plutonium.

I mention the trip because I've been concerned about weapons of mass destruction and with terrorism matters for a long time, since before 9/11. As a citizen, I'm glad to know that people like Congressman Shays and Senator Lugar are worrying about these things on our behalf. For a lot of people terrorism began on 9/11, but I don't believe that at all. Those of us who were involved in counterterrorism in the 1990s asked the FBI what the greatest terrorist threat was to the U.S. Before 9/11, they told us it was the white militias.

We ought to remember that there were two attacks in the fall of 2001: one by Islamic extremists, the other a biological attack that easily could have been just as lethal. We still don't know for sure who sent anthrax through the U.S. mail. The indications are it was an American — a cleared American — acting alone, with motives so obscure that he or she hasn't even seen fit to take credit for it. It should be a lesson to us that terrorism — the Islamist brand — is very serious, but only one brand. We have to hunt down those criminals. I think we will. I'm reasonably confident that we'll bring Osama bin Laden back in duct tape some day; that we'll win this war and move on; that Islamic fundamentalist terrorism will have its day in history and we will go on.

Two trends in technology are making terrorism something that is going to be a part of the human condition as far into the future as we can see.

Terrorism will not end with al Qaeda's defeat. Two trends in technology are making terrorism something that is going to be a part of the human condition as far into the future as we can see. First, destructive power of a magnitude and sophistication formerly restricted to organized nation-states is increasingly falling into the hands of smaller and smaller groups of people — even individuals. Second, as a society we are becoming more and more fragile, complicated, interconnected, and therefore more vulnerable. One can project such trends out far into the future.

You may remember the Aum Shinrikyo cult in Japan, which put sarin nerve gas in the subways. A lesser known fact is that it also tried an anthrax attack. There was also a group in California that believed since humans were desecrating the planet, destroying its environment and harming nature, the only way to save it was to exterminate humanity. As I recall, they had left themselves a little outlet: they figured there were a few good people like themselves who ought to be preserved. There's a glimmer of rationality for you.

I cannot think of a place less well suited to deal with terrorism than the U.S. There is very little recent history of an internal security threat in our country. We have had the luxury of a deep chasm between the institutions and habits of mind that deal with law enforcement and domestic tranquility on the one hand, and national security on the other. Foreign wars were fought on the fields of Flanders, the beaches of Normandy, the jungles of Vietnam. The battle was always "over there."

I'm not comfortable at all with where we are as a government after 9/11. There's a tendency for people to go back to sleep a few years after an incident when it's not followed immediately by another incident.

I don't think Iraq is directly related to terrorism. I think it is deeply indirectly related. Hussein is an Arab nationalist. Bin Laden is an Islamic fundamentalist. These are totally different ideologies.

Removing Saddam Hussein from power in Iraq was an important thing to do, and I supported it. But if you draw a straight line between 9/11 and what President G. W. Bush rightly says is our most important security imperative, which is to stop the worst weapons of mass destruction from getting into the worst hands, it would not pass through Iraq. Iraq is near the line, but not exactly on it.

I think when we talk about Iraq, we're talking about a special case. The idea is in some people's thoughts that Iraq was not directly related to al Qaeda and to terrorism. Now, we can think they're wrong, but I actually think they're right. I don't think it is directly related, but it is deeply indirectly related. Saddam Hussein is an Arab nationalist. Bin Laden is an Islamic fundamentalist. These are totally different ideologies. They were not part of one organized movement. I regret the European unwillingness to go with us to Iraq, but I don't take that as a signal that they don't understand the threat of terrorism. They do, and they're very helpful.

We could manage Iraq by ourselves, but we cannot do the war on terrorism by ourselves.

Let me just remind you, against the background of all this discussion of unilateralism and multilateralism, that we could manage Iraq by ourselves because we enjoy an excellence in joint military operations that is unmatched anywhere else in the world. We cannot however, conduct the war on terrorism by ourselves. Unilateralism is just physically not an option. We require the cooperation and participation of other nations to be successful. We cannot afford to quarrel with the Europeans over whether we're together in the war on terrorism. That would be a casualty of the Iraqi war that would be a tremendous detriment to our security.

There are several important things that one might expect us to be doing two years after 9/11 that we're not doing. The Nunn-Lugar program is an effort to secure fissile material and the wherewithal for mass destruction and terrorism around the world, beginning in Russia. It seems to me that the program should be global in scope. Fissile material, weapons-grade material, etc., should not be anywhere that isn't safeguarded as though it were a bomb. It's just too easy to fashion these materials into bombs. But the Nunn-Lugar program is the same size and scope today as it was before 9/11.

In the Department of Defense, my old stomping grounds, Secretary Donald Rumsfeld rightly speaks of defense transformation. But the DoD's programs are right where they were when I left them: scattered here and there, and not pulled together very well.

Next we come to the Department of Homeland Security. As head of it, Tom Ridge's responsibility is to create the beginning of a governmental adaptation to this new threat. It is a problem that is inherently inter-agency in nature and difficult to gather up all into one place. His job, in my judgment, is to dole out the missions and functions to the various agencies that are ineluctably involved and to give them the necessary resources. Instead, a new department was created, which is a nice piece of administrative tidiness, but it doesn't get to the heart of the matter. Now there's another player on the block, but the parceling out of money and responsibilities to make us safer is not happening.

The DoD, Homeland Security, and the intelligence community all face managerial challenges, and I'm looking for somebody who can make the federal government hop.

Many of the challenges for Homeland Security are managerial in nature and I don't think Ridge has found the levers yet. I don't know whether you've noticed, but Washington is very short on managerial acumen. These are policy people — wonderful policy people. But, it certainly has been my experience in government that most policy people don't know how to organize their environment. And, of course, the government fights back when anyone tries to manage it. The DoD, Homeland Security, and the intelligence community all face managerial challenges, and I'm looking for somebody who can make the federal government hop.

Then there's the intelligence situation. We don't know what the various terrorists are up to. The tendency is to do worst-case thinking and worst-case planning, and that is obviously flawed in that you can overreach and misstep. Yet it is the only choice if intelligence is not reliable.

We don't know what the various terrorists are up to. The tendency is to do worst-case thinking and worst-case planning, and that is obviously flawed in that you can overreach and misstep. Yet it is the only choice if intelligence is not reliable.

Since 9/11 we have not undertaken the overhaul of intelligence pertinent to weapons of mass destruction, as we should have. The Department of Homeland Security is accomplishing a lot with airline security. However, overall, this new configuration of departments is doing very little that adds value.

Here's another note just to deepen your gloom: North Korea. I have a long history dealing with North Korea, and I went there as a presidential envoy in 1989 with Bill Perry, a senior fellow at the Hoover Institution. Because one of my responsibilities for the Pentagon was to address counterproliferation, I had occasion to become involved with North Korea. In 1994, the North Koreans were doing precisely what they are doing now: threatening to take the fuel rods at Yongbyon. There were 8,000 fuel rods with enough weapons-grade plutonium to make five or six bombs.

We felt at that time — and I feel the same way today — that we couldn't allow that to happen. So I spent about half of 1994 planning an air strike on Yongbyon, which we were prepared to conduct if the North Koreans did not forbear. It is a tricky thing to try to attack an operating reactor, without creating a radiological incident. We were very confident that we could entomb the plutonium, that we could do it in one night, and that we could do it nationally. That is, we wouldn't have had to involve any other country in it. The likely result would have been the unleashing of North Korea's army of 1.1 million men on the demilitarized zone and its 11,000 artillery tubes on Seoul and its northern suburbs. We'd planned for such a war for 50 years. We polished our war plan that year.

Once again, we were entirely confident that within a few weeks we would destroy North Korea's armed forces and then destroy the North Korean regime. But that's not war out in the Arabian desert. That's war in the crowded suburbs of a teeming, modern, Asian city. The human toll, the intensity of combat, would be greater than anything the world has seen since the last Korean War. It would shock us all. So the handiness with which we would win was cold comfort to us, and yet we were willing to run that risk because we felt that, and I believe we have to feel now, even with respect to North Korea, we simply cannot allow another cache of weapons of mass destruction to be created.

I think we're in a very dangerous position now. We are essentially counting on the Chinese to deliver the North Koreans. That's outsourcing a security problem to the Chinese.

It's not just about the North Korean regime. The half-life of plutonium is 24,400 years. Kim Jong Il isn't going to be around that long. But this individual, while he remains in power, is creating a lasting danger to humanity. There is no difference anymore between state and non-state weapons of mass destruction. There exists the wherewithal for several hundred thousand nuclear weapons around the world. Knock on wood, we're not aware of any that are loose, but any organized terrorist can make a nuclear weapon out of at least highly-enriched uranium. In that sense, the president is deeply right about Iraq. Right now, the North Koreans are doing that, and we're not doing anything about it.

I think we're in a very dangerous position now. We are essentially counting on the Chinese to deliver the North Koreans. That's outsourcing a security problem to the Chinese. Remember, the Chinese were the enemy before Bin Laden came along. They were the next threat for which the adminstration was gearing up before 9/11. Now our most important WMD problem is supposedly in their hands.

I don't think they're going to be effective for two reasons. The first is that they have something weighing against the nuclear peril from North Korea, which is the general danger of the implosion of North Korea. North Korea's 22 million impoverished people become a Mariel boatlift of colossal proportions for the Chinese if the place collapses, and they can make it collapse. The result is the unification of Korea, which is not necessarily in China's interest. In fact, nobody in the region really wants reunification. So, they're afraid if they put too much pressure on North Korea, this Disneyland will collapse, and they will be left with 22 million people on their hands.

Furthermore, there are four or five different points of view on what we ought to do about North Korea within the administration, that have not yet been brought to a head. The administration has been busy with Iraq and so forth. We don't really have a strategy or a policy. The Chinese know that. I think it's unrealistic for us to expect them to take a part in our play if we haven't written the script yet. I think for those two reasons there are limitations on how effective they can be. They aren't going to do whatever they can do unless they know where we're coming from.

I can think of two other places where the seeds of future international threat are sprouting: Saudi Arabia and Pakistan. I don't know what to expect here. I don't think anybody knows. I have talked to President Musharraf on several occasions about this, and I know even he doesn't know. That's one thing about being the dictator, you really don't know what you're up against, even in your own country. Musharraf doesn't understand the political complexion of his own country, although we are depending upon him in an essential way right now for our own security. He doesn't know and can't tell you what his chances are of staying in power. Allow yourselves to go back in time to the 1980s when we were as complacent about Pakistan's nuclearization as we are now about North Korea's. That's a perfect example of what can happen 20 years later. A Talibanized Pakistan in possession of a nuclear arsenal is everything you've ever feared. It's the terrorist bomb. It's the Islamic bomb. It's the extremist bomb. It's everything all wrapped into one.

Saudi Arabia is another time bomb, a social time bomb: people living on oil welfare, a younger generation that's essentially useless in terms of employability because of its upbringing. I see glimmers of change, and with a little luck, change can occur at a slow enough pace so that the huge distance Saudia Arabia needs to go will not snap the social fabric. But if you're a betting person, you'd have to say that Saudi Arabia at some point will implode.

These areas of unrest mean our own society is vulnerable in lots of ways. We're open. We're wealthy. We're interconnected. We're fragile. We have to look to our strengths in dealing with the problem of terrorism. And one of our strengths is innovation. This is a hugely innovative society. I think science and technology are going to be a big part of our response to counter-terrorism. I'm not at all pessimistic about whether we can build a future society that's resilient enough so that we don't all wake up every morning worrying about terrorist attacks. We can do it. I'm just very disappointed at the pace with which we're doing it so far.

We can do it. I'm just very disappointed at the pace with which we're doing it so far.

Protecting our society does not mean damaging one of our cornerstones, namely civil rights. Most of the things that I can think of that we ought to do to prepare ourselves better to deal with the threat of terrorism do not in fact implicate our civil rights. I would like to see us work down the list a little bit. And then, if we get to the point

Protecting our society does not mean damaging one of our cornerstones, namely civil rights.

where we've done all of the no-brainers, and we have to do a few things that are sensitive from the civil rights points of view, then I am prepared to do it. But I'm not prepared to make that sacrifice at this point.

If we could roll back the tape to see how we could have prevented 9/11, there were two ways to do it. One is we could have ferreted out these young men — transnational drifters in our midst — caught them and understood that they had this evil intention. I don't hold that much hope that we are going to develop that kind of capability.

The other way we could have prevented 9/11 was to have armored the cockpit doors, because anyone who ever followed airline security knew that they were crucially vulnerable. Why didn't we do it? Because we had an FAA[1] that was brain dead and in the hands of the industry that didn't want to take these measures. It's a very simple thing. The Soviets did it. El Al did it.

We are not yet marshalling our resources to deal with terrorism in its many flavors. I'm certain it will be with us for many years, and I don't presume to be able to anticipate the economic effects of further terrorist incidents. I'm certain it will happen. One thing that will very much condition the response of the people and the economy will be the competence our public authorities show the next time there's an incident. Remember, the German terrorists of the 1970s had the objective of discrediting the German government. They wanted to either show it couldn't protect its people or to provoke it to repressive acts which would in turn undermine it. So, it is extremely important that we have competence in this effort. ■

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1 Federal Aviation Administration

Extremism, Economic Uncertainty, and the Investment Implications of U.S. National Security Policy

Dennis Keegan, Auspex Group

October 16, 2003

From the point of view of the markets, the kind of terrorism we need to be concerned with is either catastrophic terrorism or what has been referred to as asymmetric warfare.

From the point of view of the markets, the kind of terrorism we need to be concerned with is either catastrophic terrorism or what has been referred to as asymmetric warfare. Catastrophic terrorism includes acts designed to disrupt the way we run our global economy in a significant way. Asymmetric warfare is another version of it, except that it is a specific threat or act by what we would refer to as a rogue nation to accomplish the same goal. One is a terrorist policy; the other is a national policy.

The challenge for us is to anticipate today, from an economic point of view, how to deal with the ramifications of any attacks tomorrow. What do we do? Giving testimony in the Senate Banking Committee on September 20, 2001, Federal Reserve Chairman Alan Greenspan reflected on this:

> All modern economies require the confidence that free market institutions are firmly in place. And the commitments made today by market participants will be honored not only tomorrow, but for many years into the future. The greater the degree of confidence in the state of future markets, the greater the level of long-term investment. The shock of 9/11 by markedly raising the degree of uncertainty about the future has the potential to result for a time in a pronounced disengagement from future commitments, and that in the short run would imply a less than current level of activity.

In this case he meant economic activity, economic growth, production, and so forth.

Two years later, we reflect on the events on 9/11. Chairman Greenspan was undoubtedly correct when he referred to "the short run" in his testimony. In the same testimony, he went further:

> As we struggle to make sense of our profound loss and its immediate consequences for the economy, we must not lose sight of the long-run prospects, which have not been significantly diminished by these terrible events.

Greenspan was talking about the resilience of the global economic system. People might have thought he was just trying to talk things up a little bit, but in fact, we can see in retrospect not only that the system was resilient, but possibly even more resilient than expected.

The problem about understanding the market reaction to 9/11, even retrospectively, is that there has been very little analytical research done on the impact of terrorism in markets.

The problem about understanding the market reaction to 9/11, even retrospectively, is that there has been very little analytical research done on the impact of terrorism in markets. The reason is perhaps because it's very hard to separate events from the rest of the global economy. But I will try to address the direct impact, the indirect impact, and what I think about the potential impacts.

It is very difficult to disassemble the direct effects of a deed like 9/11 with what was going on at that time. We were already entering a very bearish equity climate. Had the attack taken place in the bull market years of the 1990s, there might have been a clearer bifurcation between the event and the market rally.

It's hard to separate out the nondirect impact from aggressive bank and fiscal policies.

While it's hard to discern a direct impact from the attack beyond possibly deepening the trends that were already in place, which had nothing to do with terrorism, it's also hard to separate out the intermediate, as opposed to direct, impact from the very aggressive bank and fiscal policy that followed. At the time of the event, the S&P 500 Index dropped 20%, but it recovered to its previous prices by early November. The S&P 500 then moved to new lows in 2002. But this drop was not about terrorism specifically, but about unwinding the fundamental imbalance of the 1990s. Also immediately following 9/11, the dollar rallied 6% against the euro, from 92 to 86 U.S. cents on the euro, before resuming the global downtrend we are still in today. The dollar rally against the yen from 120 to 135 was more significant. But by March 2002, the dollar was again at new lows. Clearly, the markets were profoundly disrupted not just by 9/11, but by the subsequent aggressive Fed ease of short-term interest rates from 3.5% to 1.75%, as well as the strong commitment by the Bush administration to an immediate and strong fiscal response. Gold rallied by 8% immediately, but over the next six months struggled to hold this level. Oil fell sharply to its lowest in the past five years and immediately dropped from $26 a barrel to $22. So, all market impacts are not what you might call obvious.

When there is an event, we have economic weapons to stimulate ourselves back into growth. The easy tools have already been used to get this recovery started. For example, in Japan interest rates are already zero. In the U.S., the short-term rate is at 1%. How much lower could you go? Not much. In Europe, they have 2% short-term rates, so there's a little bit more room there. But realistically, once you get interest rates to zero, you're going through things Fed Governor Ben Bernanke and the Fed refer to as "alternative means." And nobody has any reason to be sure they're going to work. For instance, Japan has been on "quantitative easing" for two or three years, and they are getting some modest growth. But if you look underneath the canvas, almost all of their growth is dependent upon exports — it's not dependent on any kind of preexisting domestic demand. I think there are a number of things to try but once you get interest rates to zero, you have to use methods that haven't been tried before.

There is, arguably, a positive impact on markets once a threat or perceived threat has been eliminated.

I also want to point out trends that occur after specific terrorist events. There is, arguably, a positive impact on markets once a threat or perceived threat has been eliminated. For example, it is possible to discern a distinct bounce in the markets in the aftermath of the Iraq war earlier this year and the lowering of risk of what I refer to as asymmetric warfare, although again it looks like part of a broader economic and market flow. Since the conclusion of the Iraq war, the Dow Jones Industrial Average and the S&P 500 are up 25%, the NASDAQ is up 40%. The dollar, after a short pause at the time of the war, has resumed its devaluation, which the world had already started to discount globally.

History may determine, in due course, to what extent the action in Iraq was in fact legitimately part of a war on terrorism and/or an enhanced or diminished terrorist threat. But we do see a direct link between Iraq and the threat of asymmetric warfare or terrorism globally. Looking at the other side of it, in April and May 2003, when Iraq was perceived to be successful in its policies, equities were depreciated. In short, it would be wrong to argue that markets always react to economic fundamentals. If they did, a hedge fund would never make any money. In the long run, though, they are rational, and they tend to, over time, discount the aspects of growth and the economy fairly well.

It would be wrong to argue that markets always react to economic fundamentals. If they did, a hedge fund would never make any money.

The impact to date of one-off acts like 9/11 or a quick and successful military action such as the 2003 Gulf War, as Chairman Greenspan suggested, work their way through the system fairly quickly, and there's a pretty resilient response. However, bear in mind that fear also plays an important part. On August 14, the U.S. had an East Coast power outage. Between the time the power went out, with the immediate assumption of terrorism, until officials came through to confirm it was not a terrorist event, the S&P 500 futures market was down 3% and offered no bid, so systematic threats to the markets do exist. Despite the fact that the OECD has demonstrated a group ability to be mutually supportive and flexible in any extreme situation, the short-term psychological impacts on markets can be quickly offset by either government action or some other endeavor to decrease the perceived threat.

This is not to say that terrorism can't have longer lasting effects. If you take a look at Israel and the second Intifada, it's pretty easy to see that you've got the shekel down 10-20% over the last few years despite a weakening dollar. It's even cheaper versus the dollar, and the interest rates don't reflect their economy but reflect the risks that exist there. As to the impact of terrorism on markets, it is hard, if not impossible, to argue that there has not been a large indirect impact from 9/11. But the indirect impact seems to reflect the real-world economic performance and the actual policy changes that have been put in place since then.

These policy impacts affect not just broad aspects, but individual companies. Defense dollars have moved even post-9/11. At the second quarter of 2002, we were spending $395 billion on defense. By the third quarter of 2003, we're spending $450 billion on defense. This, as a portion of gross domestic product, is the highest level we've seen in recent history — in fact higher than any quarter during the Korean War.

The impact on bonds of the additional government debt burden brought about by homeland defense, the Iraq war, etc., must on balance, slow the economy, because it is directing investment away from production and consumption in useful areas and into areas in which we would hope not to have to spend money.

The spending of money on greater defense has an impact. The impact on bonds of the additional government debt burden brought about by homeland defense, the Iraq war, etc., must on balance, slow the economy, because it is directing investment away from production and consumption in useful areas and into areas in which we would hope not to have to spend money. Other drags are the additional domestic costs — airport security, tunnel closures, two closures in London, more office security, less corporate travel — all creating some loss of productivity. They may be necessary expenditures in the world we live in, but it would be great not to have to spend these monies. In the long run, higher taxes and higher deficits mean lower growth either through higher interest rates or lower profits, everything else being equal.

Clearly, the airline industry as a whole, which was already in trouble prior to 9/11, has been devastated by the changes in the world since then, despite a large one-off government subsidy. Share prices for relevant defense and security firms could also be compared to broad market indices. Looking at individual characteristics just post 9/11, for example, General Dynamics was up 20% immediately and Raytheon was up 50%. But by December of 2001, General Dynamics was unchanged and Raytheon was outperforming the market by 20%. Therefore, specific implications have to be sorted out based on the value and aspects of different companies.

Al Qaeda's intention for 9/11 was to seriously disrupt markets longer term and damage the U.S. But they misunderstood cause and effect. My theory is that the terrorists will have learned the lesson and are now planning to affect the underlying economy as opposed to the markets.

After 9/11 the markets quickly overcame what happened, and a reasonable reaction to shift the economic fundamentals and goverment actions drove the rest of the market movement. The lesson the terrorists have learned is probably also clear. Al Qaeda's intention for 9/11 was to seriously disrupt markets longer term and damage the U.S. But they misunderstood cause and effect. My theory is that the terrorists will have learned the lesson and are now planning to affect the underlying economy as opposed to the markets. The obvious entrée would be to disrupt global trade through trade flows, through a devastating attack on port facilities, or other economic rather than political centers. The palpable reality of an event at any time in the future is very real and very likely to be an event worse than 9/11.

The governments have fewer tools to respond to a damaging economic act.

The risk is accentuated now, because of low global nominal interest rates and already extended fiscal positions in Europe, the U.S., and Japan. The governments have fewer tools to respond to a damaging economic act. Also, companies have moved to a much shorter inventory cycle and are much more dependent on offshore products, which potentially increase vulnerability. We have a much more integrated global economy that becomes more integrated every day. We can be sure that al Qaeda works to time horizons that are far longer than the markets'. The terrorists have to be successful only once, while security has to be successful always. In the end, an economic system that rebuilt Europe after World War II will, at a cost, recover from these acts and threats. The broadening of economic power to the ex-Communist world probably makes the global system that much more secure and flexible, but the threat is real and the cost will be high. ■

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Extremism, Economic Uncertainty, and the Investment Implications of U.S. National Security Policy

Christopher Shays, U.S. Congressman

October 16, 2003

September 11, 2001 was our wake-up call from hell. It told us what we should have already known, that we've been at war with terrorists for years and just didn't want to know it or deal with it.

My point of reference is the takeover of the U.S. embassy by the Iranians and the ordeal of our embassy employees being held hostage for over 450 days. Our whole nation was held hostage. For me, and for many I think, it was an embarrassment. There was a sense that we didn't know what to do. Another significant event was the bombing of the Marines in Beirut. We lost almost as many people in that one bombing, about 300 Marines, as we've lost to date in Iraq. In Beirut, we lost more than we lost in the embassy bombings in Kenya and Tanzania, in the bombings in Saudi Arabia, and in the attack of the USS Cole in Yemen.

As for the bombing in Beirut, we knew the Hezbollah did it, funded by Syria and Iraq. We knew it, yet no one ever paid a penalty for it. It's an important reference point, because when people say, "Why do they hate us?," that's not the right question. I think you can ask other questions: "Why do they have contempt for us?" or "Why do we make them mad?" Such questions would bring us closer to the heart of the matter. The terrorists feel contempt for us, because they see us as so decadent that we don't even have a strong conviction about who we are and what we're willing to fight about.

The terrorists feel contempt for us, because they see us as so decadent that we don't even have a strong conviction about who we are and what we're willing to fight about.

In the last several decades, it seems that there is a deeply and widely held belief in the Islamic world that there has been a double standard in the way the U.S. has dealt with the Israel/Palestine issue, and that this is in fact a group of Islamic terrorism and it's not being dealt with. After I voted to go into Iraq, I spent five days in Gaza and the West Bank because I felt that we did need to reach out more. I believe with all my heart that it does not relate to the issue of Israel. It relates to so many issues. It relates to why we were in Saudi Arabia, the so-called sacred country, where we defile it by being there. I think it relates to the squeezing of the Iraqi people in terms of their health care and so many other things. Israel is obviously a factor, but I think it's the excuse — it's not the cause.

Israel is obviously a factor, but I think it's the excuse — it's not the cause.

The attack on 9/11 revealed something very difficult to accept, namely that there is no red line. There is no line that terrorists won't cross. Anyone is a target anywhere at any time, and that's the reality.

In much of the Muslim world, bin Laden is viewed as courageous and willing to make extraordinary sacrifices.

In much of the Muslim world, Osama bin Laden is viewed the way we view George Washington. He is viewed as courageous. He is viewed as willing to make extraordinary sacrifices, in terms of how he lives, what he did with his wealth. Those who know bin Laden say he's not afraid to die. One of our challenges is that we still don't have a handle on what we're dealing with. The war on terrorism is not just a religious war, but a regional divide as well.

Terrorists need to be confronted wherever we find them. There is no good terrorist, and there is no good terrorist organization. Some Americans might view the Irish Republican Army as almost romantic, but I would put them in the same terrorist category. The problem is that we don't have the same sense of unanimity in our country about who the terrorist is, what we're fighting, and so on. The war in Iraq is deeply, in my judgment, connected to the war against terrorism. The war in Iraq is intended to influence the players throughout the region.

Let me explain with a true story: When the Yemeni leader came to see President George W. Bush to voice his deep regret about what happened on 9/11, the President didn't do what diplomats would have liked him to do, and that is to allow someone else to do the confrontation and go in big circles around a sensitive subject and ease into it. I am told that he said, "Well, if you feel that way, how come . . .", and then he went through a list of things that the Yemeni leaders were doing and allowing in their country, including allowing al Qaeda to be there and being somehow involved with the attack on the USS Cole. The Yemeni leader was taken by surprise. He had a moment in which he could decide to deny or accept, be our enemy or our friend. His basic response was, "Mr. President, what do you want us to do?" The situation was a bit of a concern. President Bush basically said, "You're with us or against us." And the Yemeni leader said, "Well, we'd like to be with you."

When people say, "I don't get it. What does Iraq have to do with bin Laden and al Qaeda?", my response is that the situation is the same as if someone said, "I don't get it. What does Germany have to do with Pearl Harbor?"

My wife has asked me why President Bush seemed almost arrogant and belligerent when he said we were going into Iraq. And, I said, "Sweetie, he wasn't speaking to you. He was speaking to Saddam Hussein. He didn't want to go into Iraq, and the best way to not go into Iraq is to have Hussein know what we intended to do." Now, did Hussein want to be hunted like a rat, have his two sons killed, and see his daughters in exile in Jordan? He didn't want that to happen, so, somehow there was a disconnect. I asked the United Nations' chief weapons inspector Hans Blix why it turned out this way. His judgment was that Hussein believed we weren't coming in since the French, the Germans, and Russians weren't with us. Former Iraqi Deputy Prime Minister Tariq Aziz confirmed this. After his capture, Hussein told us that after the attack had begun he didn't even believe we had attacked him because he didn't think we would do it.

I mention these anecdotes to point out the dangers of our not being able to communicate. When people say, "I don't get it. What does Iraq have to do with bin Laden and al Qaeda?", my response is that the situation is the same as if someone said, "I don't get it. What does Germany have to do with Pearl Harbor?" 9/11 was a wake-up call to confront terrorism wherever we find it and to influence that effort.

The hard part is to influence the area. When we met with the Saudis, what they said publicly is don't go in. What they said privately was a yellow light to a green light. They basically feel that Hussein was like a snake in your bedroom — it doesn't let you sleep too well. And it was why we were in Saudi Arabia with a fly zone over southern Iraq and in Turkey with a fly zone over northern Iraq. There is a simple view that bin Laden was able to capture people because we were in Saudi Arabia. We basically had a noose around the Iraqis.

I once met with a nephew of King Hussein. The nephew was in charge of security and had gone to Harvard so he knew Americans well. He said, "You don't get it. In your country when times are bad, you turn on your leaders. In our world, the Middle East, when times are bad we turn to our leaders." So this noose that we had around Hussein was just something he was more than happy to accept because it gave him control over his country, and he lived well.

On the bright side, a few things went well in Iraq. There were no refugees, no famine, no health epidemic, and no currency debacle. These are all huge factors in everyone's favor. What didn't go well still remain as our challenges:

- We didn't allow the lower echelons of the Baath party to be part of the new government and that was a mistake.
- We didn't reconstitute their military sooner — another big mistake. We now have lots of Republican Guards and military out there saying, "Well, if you're not going to let me be part of the team, I guess I'm going to find another team."
- There are about 100,000 prisoners in Iraq that were let go — mental health cases, murderers, thieves — who had nothing to do with politics.
- There's a 30-year-old infrastructure that somehow we didn't know was 30 years old, with French and German and Russian parts to fix — and those countries aren't part of the coalition.
- There was outrageous looting.
- We had a lack of knowledge of Iraq and don't seem to understand the Iraqi people. We don't have enough Arabic speakers. We don't take advantage of Iraqi-Americans' knowledge.

On the bright side, a few things went well in Iraq. There were no refugees, no famine, no health epidemic, and no currency debacle. These are all huge factors in everyone's favor. What didn't go well still remain as our challenges.

In one very telling recent event, a group of Americans went to the West Bank to talk about setting up Fulbright Scholarships to help Palestinian young people. The Americans were purposely blown up by Hamas in order to send a very real message

We'll no longer be able to apply reactive containment, because reactive, mutually assured destruction would follow. I think it has to be something quite different. It has to be detection, prevention, preemption.

to the U.S. that the war on terrorism is escalating. The terrorists don't care what the U.S. mission was about; they don't like what the U.S. is doing in Syria; they don't like what the U.S. is doing to them; they don't like what the U.S. is doing in Iran. I would interpret that to mean we are in Iraq to influence Syria, to influence Iran, and to influence Libya. We need them to fear that this mighty force we have will be used. Otherwise, it's a deterrent that has no deterrence.

How the war on terrorism translates into what you decide in terms of your investments is a question that I can't answer. What I can tell you is that our government hasn't yet decided how we fight this war. We're not going to let a small group of scientists create a biological agent that's going to wipe out humanity as we know it because the country where they're doing it doesn't seem to care. We'll no longer be able to apply containment, because reactive, mutually assured destruction would follow. I think our strategy has to be something quite different. It has to be detection, prevention, preemption. In some cases it will have to be unilateral, because the European world has seemingly decided that they get along just fine with each other — in their umbrella, protected by the U.S. They have multilateral interaction, but they've never had an away game. They've never had to fight anywhere else. They've been contained in their own world, and their own world is much different. They might say to me, "What a heck of an arrogant statement," but it's what I believe. ■

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Hard Assets: Timber, Water and Art

Clark Binkley, PhD, Hancock Timber Resource Group

April 17, 2003

I began to learn about trees when I was a PhD student at Yale, where I was studying economics and forestry, and became curious about an apparent conundrum. Foresters always talked about how timberland was a very long-term, risky asset because of natural risks, especially of forest fires, so it needed some special kind of economics to evaluate it. Yet I had observed the fact that many people had done pretty well owning trees. I wondered about the dichotomy between what foresters said and what practical business people had found, so I started looking at timberland from the point of view of modern portfolio theory.

The first conclusion that came out of my examination was that timberland is actually a very low-risk investment, in the way any serious investor would want to measure risk. The volatility of timberland on a return basis has been low in comparison with the volatility of, for example, the S&P 500 Index. More importantly, timberland returns have been poorly or negatively correlated with the returns of virtually any financial asset you can imagine: large-cap stocks, small-cap stocks, long-term bonds, and interestingly enough, even with real estate. This trend has held up through the recent equity market boom and bust.

The fundamental economic driver or production process in timberland is biological growth: trees growing. And tree growth is uncorrelated with economic activities.

The reasons behind these favorable correlations are intuitive. The fundamental economic driver or production process in timberland is biological growth: trees growing. And tree growth is uncorrelated with economic activities. You know, trees don't wake up in the morning and read the *Wall Street Journal* before they decide if they're going to grow or not. They may fear becoming the *Wall Street Journal*, but they're otherwise naturally occupied.

The second factor is that trees, as we say in the business, store well on the stump. That is, if you have a tree out there and prices are temporarily low, you just leave the tree out there and it continues to grow. All that happens is the tree gets a little bit bigger and a little bit more valuable. When prices return, you have more volume to harvest.

However, a downside to being so little correlated to the traditional markets means that conventional investment information is a poor guide to timberland decisions. Probably the most useful is housing starts since it relates to demand. Keep in mind, though, that timber has its own unique cycle.

For example, we've had high and rising housing starts for the last 10 years or so. We actually had record softwood lumber consumption in 2002 in the U.S., and yet timber prices were down. Why? In this case it was because of a supply response from a variety of places. The strong U.S. dollar meant that we started bringing in wood from places we never had before. We were importing wood from Sweden, Estonia, and Latvia. Today you can go to Home Depot and find Scandinavian wood sitting next to Canadian wood.

We have managed trade with Canada, where there was an anti-dumping duty imposed because of an alleged subsidy of Canadian softwood lumber. The idea was to reduce Canadian lumber imports. The anti-dumping duty actually ended up having exactly the opposite effect. It caused the Canadian mills to increase production in order to drive their costs down and minimize the dumping duty.

That's why I would call the variation in prices *volatility* rather than *cyclicality*, because although you have cyclicality in things like housing starts, and you would expect that to be translated immediately back into timber prices, it doesn't always necessarily swing that way, because of intervening factors.

If you put timberland returns into any kind of mean variance portfolio optimization model it always comes out that you should have 60% in timberland.

If you put timberland returns into any kind of mean variance portfolio optimization model with a reasonable risk/return expectation, it always comes out that you should have as much as 60% of your portfolio in timberland. Now, we're very enthusiastic about timberland, but not even we would recommend 60% of your holdings in timberland. Most of our investors have 1%-3% of their assets in timberland. Interestingly, Harvard University and Yale University, two large timber investors, actually have recently suggested they want to move their allocations to timberland into the 5%-10% range.

Timberland has not only provided great diversification benefits, but the returns have been pretty good and have outperformed the S&P 500 over the 42-year period for which we have data. If you look at the period 1960-2002, the average annual return for the S&P 500 was 10.1%, while timberland was 13.2%.

In an inefficiently traded asset like timberland, managerial skill makes a great deal of difference. You have to sell the trees at the right time in the cycle.

Historically, timberland has been a pretty good inflation hedge. There is a positive raw correlation of about 0.3 with the Consumer Price Index. Maybe this isn't as good as some real estate, but obviously it's much better than financial assets. Interestingly, if you dig deeper and look at the components of inflation — expected and unexpected inflation — timber has turned out to be a very good hedge against unexpected inflation, at least so far.

Obviously in an inefficiently traded asset like timberland, managerial skill makes a great deal of difference. You have to buy the timberland at the right time, at the right price. You have to manage it well. You have to sell the trees at the right time in the cycle. It's very helpful if you manage your portfolio of properties actively and choose your exit wisely.

There are two kinds of active management for timberland. The first kind is how you actually manage a property once you've acquired it. What kind of trees do you grow? What kind of investments do you put in growing trees?

We invest primarily in plantations, not in natural forest, because growth rates in plantations are much higher and we want to give our investors the benefit of biological growth and not just force them to speculate on price variations. We invest very heavily in such activities as planting the very best trees. We manage a seed orchard, for example, so we can deliver the best genetics to our investors; we fertilize those trees and grow them on the right cutting cycle and so on. That's property level active management.

The second kind of active management is active management of the portfolio. If you are in timberland, you should have a regionally diversified portfolio. You can diversify away much of the idiosyncratic risk of an individual investment since the returns of different regions are, surprisingly, not highly correlated. As a consequence you get risk-efficiency gains with regional diversification.

But there are times when regions are overpriced as well as times when they're under-priced. For example, from about 1995 or 1996 to just last year, the Pacific Northwest was well overpriced. Production was way down due to restrictions to protect the endangered spotted owl, and this drove prices up. But timber values fell dramatically — by almost 50% and timberland asset values were slow to react. Looking at the timber market in a price-to-earnings multiple sense, West Coast timberland had gotten very, very pricey; so we just didn't buy. It's only since last year that we reentered that market. Good active management of timberland portfolios includes selling expensive timberland and buying cheap timberland.

There is a lot of change in the forest industry now from dis-integration and this creates buying opportunities. Firms that for a long time wanted to hold both timberland and mills are saying, "Let's divide these up," for a lot of very good reasons, and they're selling their timberland. Some of this is driven by merger and acquisition activity. Weyerhaeuser borrowed a lot of money to buy Willamette, and they committed to selling assets to pay down their debt. That's why they're selling nonstrategic timberlands, very good timberland that's been very well managed — they need the money. And that's when you want to buy from them. There are other transactions that are not driven by distress, but surely that's a good time to get a good deal.

The low risk of timberland and the comparatively good returns mean that timberland has generated a positive alpha, if you will, in a capital asset pricing model sense or an arbitrage pricing theory sense. But there are, of course, risks that those simple models don't include.

What are the risks with timberland? The first thing that comes to mind for most people is forest fires. Every summer you see pictures of trees burning up and every summer we get calls from our investors saying, "Are my trees burning up?" We have to assure them that the forest fires you see on television are generally public forests and parks in the West. Those forests burn up because the managers don't care if they burn. As a matter of fact, they like it because they think burning is part of the natural cycle of producing ecological benefits.

On the other hand, we, as investors, do care a lot if our trees burn up. In fact, we do a lot to make sure they don't burn, like building roads for access and firebreaks. Actually, physical risk factors — fire, windthrow, insects, disease, etc. — average a loss of less than 0.1% per year. We keep pretty good records on physical risks, and fire losses are well-documented in managed forests. It's just not very much of an issue. In fact, it's so little of an issue that none of our forests in North America are insured against forest fire. It's just too expensive and it's not worth it.

The real risk is illiquidity. It's an asset that takes you a while to get into and to get out of. There's also price volatility. Those two factors mean that you have to take a fairly long view of owning timberland because if you take a short-term view and you want to get out of it, you may be in a temporary down cycle, and you'll have some problems. You need to be a bit patient with the asset.

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There are environmental risks that have to be managed as well. Our company spends a lot of time dealing with environmental issues, so our investors won't get their names in the newspaper about logging and other forest operations.

Why invest in timberland? There have been strong returns with great diversification benefits. It's a real asset with typically pretty good cash flow.

You can have faith in the underlying production process. Trees are going to grow as long as the sun shines and the rain falls.

There are also political risks, but sometimes these can be positive. For example, the great spotted owl episode in the Pacific Northwest, where an endangered specie was found on public land, caused a large reduction in harvest levels on public lands. That drove up prices and made our investors quite a lot of money. So political risks can cut both ways, if managed well.

Imagine that I've convinced you that investing in timberland makes sense. How can you invest? Well, you can invest in public equity or in private equity. In the public equity space, you have forest products companies, like Weyerhaeuser or International Paper and so on. And there are some timber-specialized public equity companies such as Plum Creek Timber, which is a timber real estate investment trust. The return on those investments has not been as good as the return on privately held timberland.

In private equity investing, which is what we do, we have separate accounts for investors who want to have, say, a $50 million or more account that's focused on their particular needs. We have commingled funds that have a minimum somewhere around $1 million and, again, are for sophisticated investors. Private equity timberland investing is typically fixed-term, with a 10-year hold period, a couple of years to get the money invested and a couple of years to wind it down.

Current investors are mainly institutions. Public pension funds got the ball rolling in the mid-1980s when they were looking for diversification principally because of ERISA and ERISA-like legislation. Timberland was a good diversifier for public and private pension funds. Recently there's been a good deal of interest in timberland in the family office market. Frankly, family offices have not been served very well by our industry, but we're working harder to do things that are a lot more congenial to that kind of investor.

We see non-U.S. investors wanting to invest in timberland both in the U.S. and outside the U.S., especially Canada, Australia, and New Zealand. There are others who invest in South America; however, our investor base finds some of the issues there are too troubling at the moment.

Why invest in timberland? Well, there have been strong returns. Timber gives you great diversification benefits. It's a real asset with typically pretty good cash flow. Finally, you can have faith in the underlying production process. Trees are going to grow as long as the sun shines and the rain falls. ■

Dr. Clark Binkley is the chief investment officer for Hancock Timber Resource Group, which acquires large tracts of timberland in the major timber growing regions of the world, and is the world's largest timber manager for institutional investors. Dr. Binkley is responsible for all decisions surrounding portfolio strategies. Before Hancock, he was the dean of Forestry at the University of British Columbia. From 1978-1990, he was a faculty member at Yale University, the last year serving as the Weyerhaeuser Professor of Forestry. Dr. Binkley has served on the boards of several public and private forest products companies and consulted for governments, conservation groups, and investors. He has written more than 100 books and articles on forest economics and is known throughout the world for his research on timberland investments. Dr. Binkley holds an MS in Engineering and an AB in Applied Mathematics, cum laude, from Harvard University and a PhD in Forestry and Environmental Studies from Yale University.

Hard Assets: Timber, Water and Art

John Dickerson, Summit Water Equity Fund

April 17, 2003

You might remember the old Will Rogers saying, "You ought to buy land because they ain't making any more of it." He could have said the same thing about water. Most of us learned in school that the same amount of water exists today as existed a million years ago. We have a closed system of water on this planet; we don't gain a drop and we don't lose a drop — but we do gain people. We have six billion people today competing for a very scarce asset. Most of us don't realize just how scarce fresh, potable water really is.

More than 70% of the planet is covered by water, but 97.5% of this is salt water. That leaves only 2.5% of water that is fresh, but 70% of that fresh water is frozen in the polar ice caps and Alaskan glaciers. The total supply of fresh water on the planet is 0.7%. Most of that, however, is inaccessible. It's in places like the Amazon River valley. It's in deep aquifers far from populations. The U.S. Geological Society, the National Geographic Society, and others estimate the percentage of water on the planet that is fresh, potable, and available for human consumption is 1-100th of 1%. This resource is not declining just by the 3% global population growth; rather it's declining geometrically because we not only use more water every year, we pollute the water we use. The candle is burning at both ends.

Experts estimate the percentage of water on the planet that is fresh, potable, and available for human consumption is 1-100th of 1%.

In effect, we have a worldwide water savings account on which we're earning 3% interest. If you're drawing 7% of water each year, you're really drawing into your principle, namely the aquifers that hold the base supply of fresh water. In many aquifers, such as the Ogallala Aquifer, the water supposedly is going to take 500 years to replace. I don't know what we'll do about our wheat fields and the like when the water goes away, but we're facing some serious supplier problems. The bottom line of our business is its exploding demand and constant supply.

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We think of water as the most ubiquitous thing. Every place we turn, we find water. We don't think about what's behind the pipe. But only 20% of the people in the world have access to running water. Half of the world's population has no access to potable water and therefore have no sanitary facilities. More than 30% of the countries of the world are under what we call water stress. A significant part of the world's population is actually displaced from one location to another in order to get to water.

What we have in the U.S., though, is not so much a water supply problem, but a water allocation problem. The state of California, for example, has enough water to serve 220 million people — most of the U.S. The problem is that 97% or so of it is going to agriculture.

The laws west of the 100th meridian in the U.S. are different than those in the East. There are first or prior appropriation laws that sprang up after the Louisiana Purchase. In the West there's a complete water courts system. It's the only utility I know that has its own court system, which tells you something about how important it is. When people first went west in America, nobody owned the dirt. So, the first guy to get to a place and use the water — he really took it by might, literally by the point of a gun — owned the water right that later got adjudicated. He had the prior appropriation that basically says use it or lose it. You were the first guy on the river, and you can take your three acre feet a year on the river as long as you're putting it to a beneficial use. But if you don't put it to a beneficial use, you lose your right.

The unfortunate result of these laws is that we have a supply of water that we don't have access to. For example, we have rice farmers in the Sacramento River delta who get water for $1.25 an acre foot. It's basically taxpayer subsidized since the going price for water in that area is around $1,000 an acre foot. They flood rice fields, grow rice, and sell it to the federal government under crop subsidy. Then it goes in a warehouse. Five years later, they burn it. But the farmers have to keep doing it because it's a "beneficial use."

If the regulators would get out of their own way and simply allow farmers to farm water, what's called the water market could develop quite nicely.

If the regulators would get out of their own way and simply allow farmers to farm water, what's called the water market could develop quite nicely. Farmers in the Imperial Valley, for example, with 10 acre feet of water might put in a center pivot irrigation system and get along with two acre feet. They could then sell eight acre feet to the nearby city, at a price that would drive the price lower.

Another factor to consider is desalinization. The water is out there, but it hasn't been efficiently harvested yet. The technology isn't there to produce it. There's a plant in Tampa, Florida at the moment, and there's one being proposed in Carlsbad, California. Still, I don't believe desalinization will make sense for a long, long time to come. What we need right now is a system of free water marketing. Then, if not the water supply problem, at least the water allocation problem would go away.

Clearly, companies who can help solve these intractable problems are looking at very large demand for their products and services.

The result of the lack of supply and the addition of pollution is that the lack of clean water is the biggest single health problem in the world. Recently the World Health Organization reported that 80% of all diseases in the world are directly attributable to waterborne diseases and/or lack of water. It's much larger than cancer, AIDS, or anything else. This is a serious problem that needs to be solved — which leads me to the water industry. Clearly, companies who can help solve these intractable problems are looking at very large demand for their products and services.

To give some idea of the size of the water sector, there are 160 companies and about $200 billion in market capitalization worldwide, so it's pretty small. That's one reason why you don't see a lot of people in the sector — there just isn't enough room. In that context, it's an inefficient market. Many people expect the sector to grow. Lehman Brothers feels the market cap will grow 500% over the next 10 years. However, there will probably be 30 or so big regional utilities, with two or three dominant players in pipe, two or three dominant players in pumps, filters, etc.

The 160 companies in the space as we define it do not include General Electric, do not include ITT Industries, do not include companies that have 5% or 10% of revenues in the water sector. We're talking about companies where the majority of their revenues come from selling in the water space. I don't think you want to call GE a water stock because water only accounts for a small percentage of its revenues. You could look at market capitalization on a little more generous basis, but it wouldn't be hugely different.

If you go to a big investment firm and look at their oil and gas research department, they have analysts covering independent drillers, integrated big sister companies, oil and gas pipeline stocks, and a whole array of things including oil and gas service stocks (Schlumberger, Halliburton, etc.). Nobody would think of calling Schlumberger a machine tool company or Halliburton an industrial products company. They are oil service companies. On the other hand, no one looks at Gorman-Rupp or Northwest Pipe as water industrial stocks; they see Gorham-Rupp as a pump maker and Northwest Pipe as a pipe maker. If anybody covers these stocks, although usually they're not covered by Wall Street, it's by an analyst who's main coverage is machine tools or industrial products. He doesn't understand water or utilities; the dots are not connected. Yet these companies are selling into a business with a wonderful, wonderful business model.

How do you invest in the water industry? You invest in securities for companies in the water industry, which is something we've had to define ourselves because Wall Street and others don't define it. Wall Street has never really understood or paid much attention to water stocks or the water industry, for the most part because it's only 6% investor-owned. The water industry, in terms of assets deployed, is one of the three largest industries in the world. The other two are the energy business and the electricity generation and distribution business. There's a massive infrastructure in place for the water industry, but it's still considered a small business because of only 6% investor ownership.

Typically, water service stocks benefit from the same economics as in the utilities business model. Even though utilities are 94% municipal (a percentage that's changing rapidly in the U.S.), they still have a very good business model. In the water business, you first have a customer who must have your product on a daily basis. There is no substitute for water at any price. Think about it: There's a substitute for lots of things — gold for silver, kerosene for fuel oil, wheat for oats — but there isn't a substitute for water. You must have water. You must have it daily.

The way our system works, the company with the pipe into your house has the only conveyance and an enforced monopoly. There are huge, impossible barriers to entry. The only way to replace that pipe is to buy the company that owns the pipe. A new company doesn't come along and put in another pipe. It's not like having Conoco on one corner and Texaco on the other, and you can go across the street if Texaco's got gas a penny cheaper.

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The demand for water is unaffected by inflation, recession, or interest rates. It's economically insensitive. No one thinks, "Gee, times are tough. We're in a recession. I will take fewer showers. We'll only do two washings a week instead of three." The water industry has an incredibly consistent growth record in all kinds of economic conditions. Yet the underlying asset still does not reflect its true economic value.

In the 1793 *Farmers' Almanac* Ben Franklin says simply, "When the well is dry, we know the worth of water."

And in any utility-type business model, attention to service is absolutely critical. If you're a supplier selling to a municipally- or investor-owned utility and a pump goes out, the answer is fix it right now with no interruption of service. Water companies don't say, "Gee, we can't fix it until Monday because we don't want to pay overtime for the weekend." They don't say, "It's not in the budget this year." It's fixed right now, and when they buy a spare part, they buy two of them because they want to have a spare. The effect of being so critical trickles down in a positive way throughout the water industry — to the pipes, the pumps, the valves, the filters, and all the rest that has to be purchased and maintained.

The best and most current investment driver in the industry today is consolidation. It's what's really driving the stocks, for both utilities and suppliers. There are 56,000 small water utilities in the U.S. serving less than 2,000 customers. There are also many thousands more that are a little bigger and serve a higher number of people. However, these 56,000 are the least able to sustain themselves independently and are, in effect, the low-hanging fruit for consolidation of the industry. When you have just 2,000 customers, you don't have many economies of scale. You don't have a competitive business in the sense of competition for capital.

The best and most current investment driver in the industry today is consolidation. This is what's really driving the stocks, for both utilities and suppliers.

It's amazing that there are as many as 56,000 of these small water utilities, but they came about through the real estate development process. Here's a typical scenario. A developer buys a few hundred acres, puts in flatland, curbs, gutters, sewers, etc., cuts it up into lots, and, after a couple of years of selling the lots, he needs to have water and sewer service in order to sell the homes. The last thing he wants to do is run the water and sewer district permanently, so he has his attorney charter a special district municipal nonprofit entity. When the last house is sold, he turns the key over to the homeowners' association.

Now remember, water assets have a very long life, but they're not permanent. In these special districts, the local board has a meeting once a month, and gets someone to drive around the area and check the fire hydrants and the like. It goes on for a long while. Breakdowns occur in the middle of the night and that sort of thing, but it still isn't too serious. Everything's easy.

After the system is 20 or 30 years old, the board gets a knock on the door and hears, "Hello. I'm from the Environmental Protection Agency. I'm here to check your water." There are problems. The EPA finds the particulate count is too high. There's some chrome in the water. Chlorates are too this or too that. The filter system is too old. "Unless needed updates are performed, you're out of compliance with the Clean Drinking Water Act."

They call in a consultant who says, "We can fix it for $5 million, and we'll have it done in six months." The guys on the board look at each other and say, "Oh, my God. How do we get $5 million? People want their $50 a month water bill. We've got $300,000 in the bank for our maintenance. How are we going to get the money?"

They call the local banker who says, "Sorry. We don't make loans without personal guarantees, separate collateral, short amortization." They call the local stock-broker and ask, "How about a municipal bond issue?" He says, "Sorry — nothing less than $100 million and separate collateral is required." They know they're facing an EPA fine, and the only way they're going to get out of it is to assess the homeowners and that is not acceptable. People think it's a God-given right to have a $50 a month water bill. They're not going to stand for a $5,000 per household assessment.

They finally think to call Philadelphia Suburban or California Water or Southwestern Water who say, "Okay. We'll pay you $200,000 for your system. That's really just your closing cost. We'll commit contractually to buy and fix the system for $5 million, and we will guarantee in six months you will be in compliance. Your neighborhood will have clean water, guaranteed, forever." The directors, of course, can't wait to give him the key and do the deal.

It's a win-win proposition. The community gets out of a serious problem, and the water company gets a deal by buying an asset at less than replacement cost and less than book value. As a return on capital, it makes high-tech companies pale in comparison. We've seen these little utilities go out at $400 per customer, which includes the acquisition cost and the cost of the repair. The last eight public companies acquired in the U.S. (by mostly foreign investors) went out at $2,400 per customer, which was 26 times earnings and three times book.

The last eight public companies acquired in the U.S. (by mostly foreign investors) went out at $2,400 per customer, which was 26 times earnings and three times book.

The city of Atlanta has the same problem right now. The city of Indianapolis had the problem and recently did a deal with the U.S. filter division of Vivendi, and they privatized. Remember, there are 56,000 of these entities out there and these are just the low hanging fruit.

Wall Street hasn't noticed this opportunity because they don't pay enough attention to the performance of the industry as a whole. Among water utilities in the last five years, the average annual rate of return is over 16%, while the S&P 500 is down by around 0.5%. In the last 10 years, the water utility rate of return (specifically Columbus Water Works) is 14.9%, still well above the S&P 500 at 9.3%. Interestingly, in the last 20 years, water stocks are up 17.5%, but the S&P 500 is up only about 12%.

The fourth-best performing stock on the New York Stock Exchange over the last 20 years is American Water Works, exceeded only by Home Depot, Wal-Mart, and Merck. Not very far down the list with a 16.5% average annual return is Philadelphia Suburban. Further down the list by a couple of points more, at 15.2%, is San Jose Water in California. It's outperformed American Express, Disney, McDonald's, IBM, and all the market indices.

The fourth-best performing stock on the NYSE over the last 20 years is American Water Works.

It's clear water stocks have performed exceedingly well for a long time — in good markets and bad. The companies selling into that market, having those companies as customers, have done very well. At the same time, because of the aging and dilapidated infrastructure in this country, the pace of consolidation is picking up. For example, Philadelphia Suburban is doing a couple of deals a month, and there's a whole lot more coming. The economics created are very, very interesting.

The short-term investment driver is consolidation and privatization. In the very

The short-term investment driver is consolidation and privatization. In the very long term there are huge, intractable problems around the world that have to be solved by the water industry — by the same companies that are providing the pumps, valves, and filters in the U.S.

long term there are huge, intractable problems around the world that have to be solved by the water industry — by the same companies that are providing the pumps, valves, and filters in the U.S. Every time one of those little deals happens, the $5 million spent to fix up the system goes to our water industrials. These will ultimately be the same companies that will fix the problems around the world.

Because of the consolidation in the water industry right now, I would compare it to the electric utility business. In 20 years, you'll have 30-40 large regional utilities that have consolidated those 56,000 local utilities. Consolidation will go on in the water industrial sector, too. One of the biggest industrial consolidators is GE. They say this sector is one of their five main profit platforms in the next few years. They're up to roughly $900 million in revenues in the water sector and they're probably the most active buyer out there.

The catalyst for moving people to invest may well be an increasing round of privatization in the municipal sector. The one asset most municipalities own that can be monetized is the water system. You can't monetize the fire department or the schools, but you can a water utility. Politicians want to get rid of a problem and nobody ever won an election running on a "pipes for the people" platform.

Regulators are light on regulation, because people are whispering in their ear, "Keep rates of return attractive enough to appeal to private industry. Don't push on it so hard that nobody wants into the business, because then we're stuck with the problem." So consolidation and privatization are being done at numbers that are extremely beneficial to the acquirer. And that's where you'll find the good results we've seen. ■

John I. Dickerson is the primary portfolio manager of Summit Water Equity Fund, L.P., and chief executive officer of the General Partner since 1994. A professional value investor since 1968, he began a focused interest in water securities in 1978 in conjunction with a decade of serving as treasurer for a municipal water utility. Widely known for his strong record in water investing, he also served as a founding director of Vidler Water Company, engaged in the ownership of water rights and water storage projects in the western U.S.

He graduated from Colorado State University, and participated in graduate studies in Monetary Economics at George Washington University and American University, Washington, D.C., while employed as an economic analyst for the Central Intelligence Agency.

Hard Assets: Timber, Water and Art

Peter Sutton, PhD, The Bruce Museum

April 17, 2003

Art is not an investment class like water or timber because every work of art is unique, even in the case of multiples like photographs and prints. The problem is that there is no centralized and ready exchange for art. The global art economy is still surprisingly small — only about $23.5 billion in sales last year. And art has very little liquidity. You can't just trade it in on a given day. To dispose of a picture, be it an Impressionist, American or Old Master painting, you can consign it to a dealer and it can take several years to sell; or you can put it in an auction.

There are established seasonal auctions for different types of art each year in London or New York. May and November are Impressionist times; January and July are for Old Masters. So actually there are seasonal distributions of different types of works. But you can only hope that the picture sells. About 70% of the lots last year sold in auctions, constituting what we call a 30% "buy-in" rate. Art as an investment is not for the faint of heart. It's an expensive business.

For those of you who have not heeded the flashing red sign that says, "Don't buy art as an investment," and feel compelled to do it anyway, the very specific liquidity of buying art — and selling it — is a significant risk factor.

For those of you who have not heeded the flashing red sign that says, "Don't buy art as an investment," and feel compelled to do it anyway, the very specific liquidity of buying art — and selling it — is a significant risk factor. As I say, even in good times only 70% of auctions sell, so there is a significant possibility of the work failing to sell. Then the piece is considered "soiled" in the marketplace, and it is worth less.

From 1985 to 2001, the S&P 500 rose nearly 600%. During the same period, paintings of all kinds at auction grew only 223%.

Art has not done as well as equities or other investments over time. The British Rail pension fund discovered this the hard way in the 1980s when they had very good advice and bought a great deal of art, and then tried to dispose of it 10-15 years later. They found that they would have made more money in government bonds. From 1985 to 2001 the S&P 500 rose nearly 600%. During the same period, paintings of all kinds at auction grew only 223%. But in 2001, they still had not regained the height of the market, which came in 1990 when Vincent Van Gogh's "Portrait of Dr. Gachet" sold for $82.5 million. And virtually the same night, Auguste Renoir's "At the Moulin de la Galette" sold for $71 million. Both were sold to the same gentleman from Japan. These record prices still stand today. They have not been equaled since because those two sales were part of a speculative bubble driven by incredible buying from the Japanese.

In the last 15 years, some types of paintings have done better than others. Paul Cezanne surprisingly is more expensive than Claude Monet. Cezanne's landscape "Mont Sainte-Victoire" sold for $60 million in 1999. If you want a Monet, one of the "Rouen Cathedral" series sold for $33 million in 1998, another went for $24 million in 2000. The most expensive 20th century painter is Pablo Picasso, whose blue period pictures bring enormous sums. The most popular recent artist is Andy Warhol; you could have bought an "Orange Marilyn" in 1998 for $17 million. The most expensive living artist is Jasper Johns, whose "False Start" in 1988 brought $17 million. But art goes down as well as up. Jasper Johns' "Two Flags" brought $11 million in 1989, but just $7 million in 1999.

There are areas of the market that have done quite well. Remarkably, the area of painting that fared the best from 1985 to 2001 was Irish painting, which rose almost 12% per annum, no doubt because the Irish economy roared along in the 1990s.

There are areas of the market that have done quite well. Remarkably, the area of painting that fared the best from 1985 to 2001 was Irish painting, which rose almost 12% per annum, no doubt because the Irish economy roared along in the 1990s. It topped even Impressionist pictures, which increased at a value of about 10% per annum during that same period.

There is some evidence, though, to indicate that the great run-up in the value of art that began in 1967-1968 — when the Impressionists first crested the $1 million mark and then soared away from all other types of art, including the Old Masters — is now slowing down. For example, in the last six to eight years, Old Master paintings have finally matched the prices of Impressionist paintings; I'll give you some examples.

An Andrea Mantegna — rare as hen's teeth — that sold last year is the only one left in private hands. You have to remember that Monet painted 2,000 pictures; Eduard Manet many fewer. Artists like Mantegna simply don't come on the market. The Mantegna picture brought $28 million last year. The perennial favorites of the Old Master area are the vedute painters Giovanni Antonio Canaletto, and Francesco Guardi. These paintings regularly bring more than $10 million apiece, again, because of their scarcity. Peter Paul Rubens' "The Massacre of the Innocents" brought $76 million in July of 2000. This was a picture that had fallen out of sight and only reemerged spectacularly last year and generated a great deal of attention in the market.

It is interesting that in 1989 — when the Van Gogh and the Renoir that I mentioned sold — the highest price ever for a Rubens at that point was $5.5 million, who now sells for $76 million. In 2000, Rembrandt van Rijn's "Portrait of 62-year-old Woman" sold for $28 million, and his "Minerva" is now on the market for $40 million plus; the record for Rembrandt at public auction in 1989 at the high point of Impressionism, was $9.3 million. The Old Masters seem to have finally caught up not only with Van Gogh, Rembrandt, and Cezanne, but also with Picasso, Warhol, and Johns.

We have seen discrepancies in the history of the economics of the art market before. For example, Victorian pictures in the latter half of the 19th century brought more money than works by Michelangelo or Leonardo da Vinci. Queen Victoria paid more for "Her Majesty's Favorite Pets" by then-living artist Sir Edwin Landseer than the National Gallery paid for either Italian Renaissance master. But by 1969, Victorian painting had fallen so far down in value that Malcolm Forbes's son, William, wagered his father that he could assemble an entire collection of Victorian painting for the cost, namely $3 million, that Malcolm paid for one Monet "Water Lilies." He did. And that group included wonderful pictures by Landseer.

The collection assembled by William Forbes was sold this year for $26 million. On an original investment of somewhere around $2 million, that's a pretty good return. And a Landseer that he bought in 1983 for what seemed like an obscene amount of money — $100,000 — sold for $1.3 million, also a very good return. As always, there are rewards for buying in advance of taste.

When I worked for Christie's in the 1990s, we observed that over the last 40 years, the art market usually ran in fairly predictable eight-year business cycles following the financial markets, usually dipping about 18-24 months after a fall in the stock market. The art market in the last two years has been very selective and shaky. But it hasn't suffered as much as the stock market, in part because fewer new things are becoming available, as collectors hold back dearly bought assets in these uncertain times. They're not consigning things to auction. Auction investors have had less supply and fewer choices, which has had the effect of stabilizing prices.

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There is also a good deal of inventory with dealers. There are actually quite good buys this year. For example, at the Maastricht Art Fair, the biggest art fair in the world, for $3.5 million one could buy a picture by Ambrosius Bosschaert who is distinguished as one of the first painters of still lifes. That's high because it's a museum-quality picture. A picture once owned by Mrs. Paul Mellon — a beautiful oil on white marble by Gerard van Spaendonek — sold at auction for $400,000. You could buy it from the dealer now at an average markup of 100% for $800,000.

In the long term, art isn't a very good investment. It's first of all a luxury, which can be part of a diversified portfolio. In that regard, it pays pleasurable dividends every day, but should never be your primary investment. I would also encourage you to look before you leap. You scarcely needed a graduate degree in art history to collect. As a matter of fact, it's probably a drawback.

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You should, however, go to auction viewings and make the rounds of the dealers. Don't be shy. Knock on their doors. They are there to receive you. Visit the burgeoning art fairs — it's a very good way to research your investments and complements the way in which we shop — it's rather like a big mall for everyone. I would also encourage you to make the very small investment in a subscription to artnet.com where you can check prices on virtually any artist or work of art, so when the salesman says to you that it's absolutely priceless, you'll know it's not.

I also recommend working with an advisor until you're comfortable with your collecting. This can be a trusted dealer. It can be someone in an auction house that you rely on, or a private bank. I worked for CitiBank, and I promise you, those people are perfectly honest and don't misrepresent things. Museum people are also very happy to advise private collectors on the quality of objects, but they usually don't know much about prices. I've found curators rarely do.

Art collecting shouldn't be a serious financial decision. Rather, it should be a lifestyle choice.

Art collecting shouldn't be a serious financial decision. Rather, it should be a lifestyle choice. And, I assure you that it will enhance your life. ■

Dr. Peter Sutton is the chief executive officer of The Bruce Museum of Arts and Science. Founded in 1909, the Bruce has grown into a museum nationally recognized for its vitality and its creativity. Mr. Sutton is a leading scholar of Baroque art and is published extensively. Before the Bruce, he was the Director of the Wadsworth Athenaeum in Hartford, Connecticut. Mr. Sutton speaks with authority about art as an asset class thanks to his experience in the art advisory service at Citigroup and as the senior director of Old Master paintings at Christie's. His fine art qualifications include curatorial responsibilities at the Museum of Fine Arts in Boston, the Philadelphia Museum of Art, and a fellowship at the National Gallery of Art in Washington, DC. Mr. Sutton is a trustee of the European Fine Art Foundation in Maastricht. He received his BA degree from Harvard University and an MA and PhD from Yale University.

Trading Strategies and the Monetization of Ideas

Hilton Nathanson, Marble Bar Asset Management

June 19, 2003

In order to make the best trades, you need to bring together three things: Market sentiment, fundamentals, and technicals.

My fascination with and interest in the markets stems from very early days and it centers around the playing arena of buyers and sellers, the psychology behind it, and what makes people do what they do. In order to make the best trades, you need to bring together three things: Market sentiment, fundamentals, and technicals. The best trades are a combination of these; after that, essentially it's just the market playing out what people are doing — buying and selling. It's really no different from buying anything else, the market just happens to be in stocks and shares, but it's essentially the same process and the same people. So my interest is very much about what makes people do the things they do and then trying to gain an edge from that knowledge.

As we think about trading for profit, let me introduce three themes: 1) The differences between the European and U.S. markets. There is an unmistakable difference between these two cultures and how the markets trade, and it's worth examining. 2) The euro and how the impact of the currency is affecting the equity markets. The relationship between the euro and the markets is quite essential to European exporters. 3) A look at a typical trading day in the European market, and how the U.S. market in particular can affect the European markets during specific times of the day.

1. CULTURAL DIFFERENCES

Clearly there's a difference in culture between the European and the U.S. markets and we need to be aware of these different approaches. Understand that part of the difference in style comes from the abundance of bureaucracy in Europe. Look at how European stocks react to news and compare that to how the stocks act in the U.S., and you see a constant theme. In the U.S., when there is a profit warning or an upgrade to earnings or a shock to the market, you tend to find almost a market stampede. This is the cockroach effect, whereby a mass of players comes charging to the exit saying, "We want out of this stock; we don't like it; we don't trust it; we don't like these numbers." And quite often, the first move on the day of a profit warning in the U.S. can actually be the low point for some time. Not always, but certainly for some time, because it's quite often extended on day one.

The first move on the day of a profit warning in the U.S. can actually be the low point for some time. In Europe, it tends to be the reverse, and quite often the first move is followed by significant moves in the same direction shortly thereafter.

In Europe, it tends to be the reverse, and quite often the first move is followed by significant moves in the same direction shortly thereafter. The reason for this stems from the cultural differences between U.S. and European investors. Europe tends to be really swamped in bureaucracy and a committee culture. A planning oriented, "let's sort of talk about things" approach. There tends to be a slight lag time effect when it comes to how U.S. investors are trading relative to European investors. What tends to happen is that a large European institution may hold a share which has a profit warning and then they have to convene a subsequent meeting to decide what they should do. They have committee meetings that, remarkably, can sometimes take a couple of days. So when the institution actually goes to start selling the stock, they can then put additional pressure on the stock price and that share can continue to move. Whereas in the U.S., the culture is: "We want out and let's do it today."

Crowded trades do, however, present some opportunities. There's been a global proliferation of hedge funds in the last five years, with a lot of brokers servicing the hedge funds and generating a number of trading ideas on a daily basis. I think it's hard to justify the number of trading ideas that are disseminated into the market, and I believe that creates opportunities. Hedge fund managers are only human and sometimes they do trades that they don't know too much about. If you can be organized and look at where those crowded trades are, that can definitely create opportunities. Because if you know a specific idea has been carted around the market for the past few weeks and people have acted on the idea and have gotten themselves into a crowded trade, you don't want to be on the other side of that trade when the market is looking to cover.

Information flow significantly favors U.S. traders and they make it their business to be as switched on and plugged in as they possibly can be. I know when I trade U.S. securities, I'm always more wary of who's on the other side of the trade.

There are other differences between the two cultures. I've found that U.S. investors are significantly smarter and have far greater access to information flow than European investors. I don't think there's a clearer way of showing this other than having a look at how the ADRs trade at various times. By simple definition, an American Depositary Receipt is a dual listing of a stock that has its home denomination in a non-U.S. country. So if I look at stocks such as Vodafone or AstraZeneca, which trade a significant amount of ADRs, they trade probably 10 to 20 times more than that on the London market. Yet there are times when I will look at how the ADRs are trading to get a gauge for what's actually happening in a stock. When there is information or a catalyst or news coming out on a stock, I tend to find that the U.S. is significantly more plugged in than the European investors. And quite often, I'll find the ADR beginning to do something even before the home listing. That tells me a couple of things. Firstly, it tells me there are probably a significant number of hedge fund players who spend a lot of time just accumulating the information flow themselves. Secondly, there are fewer barriers to stop U.S. investors from just trading straight away, if you like, rather than the Europeans' predicament of having to wait and get a consensus about what to do.

Information flow significantly favors U.S. traders and they make it their business to be as switched on and plugged in as they possibly can be. I know when I trade U.S. securities, I'm always more wary of who's on the other side of the trade. Am I picking him off or is he picking me off? Am I the patsy in this game of cards? I'm certainly more on my guard when I'm trading in the U.S., even in ADRs, where, theoretically, I should have some sort of home-ground advantage.

In terms of how much information we rely on from brokers — we get some very good ideas from some very talented people — it's not really our focus. We're not really relying on ideas from the market on a daily basis. I think that's what we're paid to do and to come up with.

2. THE EURO

It is an interesting time to study the impact of the euro and what's happening in European markets, because the volatility in the currency markets has increased recently and significant trends are developing. Everything is cyclical, but at some point an event begins to get traction and starts to drive the markets. Over the last several months, the dollar has depreciated quite significantly against the euro and is now trading at about 1.19 against the European currencies. Historically, the dollar's depreciation would be very negative for the European markets, particularly the DAX, as the German market has a large component of autos and other exporters. But what we've seen is actually an appreciation of the DAX in absolute terms, but probably more significantly, an appreciation of the DAX allowing for the euro appreciation. The European markets' rally, even allowing for the strength of the euro, indicate that the trends we've seen in place for some time are beginning to wane. That doesn't mean you're about to have a trend reversal; it just means wake up to what's going on, beware, and be very alert.

Historically, the dollar's depreciation would be very negative for the European markets. But what we've seen is an appreciation of the DAX allowing for the euro appreciation. The trends that we've seen in place for some time are beginning to wane.

3. A TYPICAL TRADING DAY

When it comes to a typical trading day in Europe, it's worth going through how the European markets trade, what we look at, and what happens.

When I arrive in the morning (our markets open at 8:00), one of the first things I do is get a closing report of where all the European shares that trade ADRs closed. I get parities of where the main stocks trade. For example, did Vodafone trade up or down from the close in the U.K.? And I have a sheet that tells me which stocks are up or down. Quite often you tend to find that in the first half hour the stocks will open near or around where they closed in the U.S. the night before. So you already have an affect in the morning that takes those share prices toward the U.S. close. Between 8:30 and 11:30, the European markets effectively begin to trade as much as they can on their own. They try to gain as much independence as possible. They think that they are together the second biggest collective stock market in the world and sometimes they'll maintain their own direction. And sometimes they'll take great pride in thinking, "The DAX will be down 250 points but there's nothing to stop the European markets being up at 11:00, because between 8:30 and 11:00, they can often do their own thing."

By around midday, it becomes a different kettle of fish. It's as if the master comes to wake up the servant. The U.S. market gets ready to open and suddenly in the European markets, all bets are off. "Let's wait and see what the U.S. market is going to do." So we tread water between 11:30 and 2:00, and almost tick-by-tick, we're watching Globex; the S&P 500 Index; U.S. Treasury bonds; what's happening in the markets; what news is coming from the U.S market. Between those hours, the markets are virtually purely being driven by what's active in the U.S.

Between 2:30 and 3:45, we're very much watching the U.S. markets again, what's happening intra-day. The European markets often get another little bit of independence between 3:45 and 4:30, when some markets decide they're going to trade on their highs or their lows, and the market has a squeeze or a fall to the end of the day. But that is effectively how the markets work. We are very much a slave to the U.S., and the U.S. has had a huge increase in globalization and world markets over the past five years, and this is what we're seeing in the markets today.

Liquidity is absolutely vital. You're not going to get good pricing and capital commitment unless you are an active client and unless you have sufficient funds to make it worthwhile.

4. LIQUIDITY

A fourth element that I didn't initially list because it affects every other part of trading is liquidity. Being a large account is very important to the sell side of my strategy. It has pros and cons but I generally believe that the pros outweigh the cons quite significantly. Having access to good brokers is absolutely key. For my style of trading, which is quite aggressive in terms of getting in and out of the markets, what I look for is strong relationships with the sales traders and, possibly more importantly, capital commitment from the brokers. Being able to move my positions in and out of the market and trade my size is quite effective. Liquidity is absolutely vital.

You're not going to get good pricing and capital commitment unless you are an active client and unless you have sufficient funds to make it worthwhile. If I want to buy a million Vodafone and the stock's trading at 120 bid and 120-1/4 offered, quite often I just want to get a price and I'll say, "Where's the stock trading?" The broker will make a price and hopefully, nine times out of 10, I can put the phone down and know that I've dealt well. In order to get capital commitment, you need to be a fairly active client; you need to pay your way because at the end of the day, the investment banks are putting their capital at risk and they need to make sure that it's working for them.

There are three main competitors for capital and liquidity: mutual funds, hedge funds, and proprietary trading desks. In terms of their influence, I would rate mutual funds on top.

There are three main competitors for capital and liquidity: mutual funds, hedge funds, and proprietary trading desks. In terms of their influence, I would rate mutual funds on top. Whether hedge funds like it or not, mutual funds are bigger and when they play, they play in size and you've got to be mindful of that. In the past 18 months a lot of the prop desks in Europe have had quite a tough time. I think when the markets were liquid and they were making capital calls to a number of hedge funds, it affected the P&L of some of the desks. The managers of the prop trading desks have since tightened up on various risks. Generally, it's become a harder game to play.

If a firm has a position in a stock or there was a placing that didn't go well and the prop desk got caught with it, generally they will have a weak hand. In terms of flushing them out, they're probably one of the first to crack when a stock moves to a certain price. So you do want to have a sense of where the prop desks are positioned because the risk has tightened and therefore the stock losses will be lower. You may then be able to influence their stock losses sooner rather than later.

In terms of the competitiveness of mutual funds versus hedge funds, we've seen a lot of brokers servicing hedge funds aggressively. When the markets were quiet, hedge funds were often providing a lot of the revenue flow for proprietary trading desks, and certainly on the sell side most of the activity was from hedge funds. I think that game has changed. In the past few months, there's been a significant amount of liquidity in the markets and a push to service mutual funds once again, slightly to the detriment of hedge funds. So it is becoming very competitive. I don't believe mutual funds are becoming the life of the prop desk, if you will. I think they're still more traditional in their composition, but it's certainly becoming more competitive.

In terms of general market trends there are a few points to make. First of all, it's futile to ask a trader for an opinion. I've been asked many times whether I think markets are going to go up or down and in the majority of occasions when I have answered, it has cost me money. I feel that when I give my view, I actually lose my edge. It's a psychological thing. There are two things that go wrong. One is that it actually affects your style of trading, because you become more reluctant to trade on the long tack than the short tack because you've just told people you're bearish and therefore you almost by definition begin to trade bearishly and not listen to the markets.

Secondly and almost worse is, even if you are disciplined and you short stocks because you said it to an investor, you feel uncomfortable the day after and you decide to cut your shorts and go long. You can rest assured that the investor is going to think you stayed short during that period of time and they've expected you to have made money because you called a stock correctly, and therefore you're doubling their disappointment. So I don't think there's any upside whatsoever in giving your views to anybody that asks you what you think of the markets.

Having said that, if somebody asks me what the drivers are in the markets at the moment, there are certain things to look at. The first point is that liquidity has definitely come back into the markets in the past few months. I think liquidity has been the best that I've seen for the past two years. Six months ago there could have been a bear story around and the hedge funds may have driven prices down significantly, but now that's just simply not the case. There is a wall of money waiting to catch the other side of the trade and when the hedge funds have finished shorting, that wall of money is far more powerful and significant than many hedge funds.

Point two is that traditional relationships, which I made reference to in the currency market, are beginning to break down. When you have bonds doing what they've been doing, and equity markets rallying at the same time, and the fact that the European markets are rallying with a strong euro — these are new variables coming into what had been a very savage bear market for the past three years. It doesn't mean it's going to turn around, but it means you've got to be on your guard; things are changing and something's happening. I have no way of knowing whether or not this market's going to end up 20% down or 20% higher than these levels. I just know I need to be very much on my guard because of what's going on in the market. ■

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Hilton Nathanson is the chief investment officer and founding partner of the hedge fund group, Marble Bar Asset Management in London. Mr. Nathanson previously worked at Albert Sharp and Goldman Sachs. In July of 1998, he started to trade the Tomahawk Fund, which employs a system of signals and rules-based trading *methods. Jandakot, which launched in April of 2002, is his own discretionary fund. Mr. Nathanson is from Perth, Western Australia. He has a degree in Business and Commerce from the University of Western Australia, and an MBA from City University in London.*

Trading Strategies and the Monetization of Ideas

Netta Korin, Amgis Global Advisors

June 19, 2003

I'd like to describe short-term trading strategies by answering four important questions. First, what is a short-term trading fund and why do we think it is the right way to manage money? Second, what are the rules of trading? Third, how do we make money applying those rules? And fourth, how is trading different now than it has been in the past few years?

A short-term trading fund is basically a catalyst or event-driven fund that takes advantage of short-term opportunities in the market to gain more performance from any given stock than if we had just held the position long or short continuously throughout that time. The role of a portfolio manager in a short-term fund is similar to a conductor of an orchestra. We gather information from many different players, whether they're analysts or traders or sell side or buy side or industry contacts, and we build a book managing risk and understanding a little bit of what each of those players knows in detail. Thus the manager is a conductor making all the players come together. We continuously evaluate and re-evaluate positions in the book, looking at every position as the opportunity cost of not having something that could perform better in our book.

How do we do this? We apply several rules of trading, starting with the most important: Sell when you can, not when you have to. Always make a profit when you can and never hold out or be greedy; otherwise you inevitably end up losing money.

The second rule is: Sometimes the best trade is not to trade at all. It requires a lot of discipline and in my experience with traders it's also incredibly difficult to master. When there isn't anything going on out there, when there isn't a catalyst or event, or when you don't really understand what the market or the stocks are telling you to do, it's always best to sit on the sidelines and just watch. When the opportunities arrive, you'll probably have more money and a lot less fear in tackling those opportunities.

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The third rule is: Size matters. This is critically important. Even if my book and a different trader's book have the exact same positions on the exact same ideas, most probably I will profit more than an inexperienced trader because I understand how to position myself in those stocks in terms of size. Experience can tell when an idea becomes a 1% position versus a 10% position. Experience guides a trader to differentiate between having a conviction about a position or when to just play it for the sake of playing it.

The fourth rule is: Never fall in love. Never convince yourself that an idea is going to work. In my experience, the positions you fall in love with are inevitably the ones in which you lose the most money.

The fifth rule is: Have no ego. Never think you are better than the markets, because again, your ego will replace logic. Listen to what a stock is saying. Forget about fundamentals; just watch a stock; watch the market and find out what the stock is telling you to do. Is it acting like a long or is it acting like a short? Let go of any other thoughts other than what you're watching and then put on the position according to that.

It's very difficult, in my opinion, to make as much money trading or as much money in research as you can with a combination of both.

How do we make money applying those rules? It's a combination of research and trading skills. It's very difficult, in my opinion, to make as much money trading or as much money in research as you can with a combination of both. We apply the rules of trading to the market on a daily basis, combined with fundamental knowledge. I can present a couple of examples of how the trading or fundamental side would not have performed as well as a combination of the two.

The first example is Qualcomm, which my analyst — on a fundamental basis when the stock was at $30 — hated with a passion. He wanted me to short it, as did the rest of Wall Street. I knew that two large sellers had been cleaned up in the last week, and that the sentiment on the stock was quite negative on the Street, but the stock had not gone down anymore. It had stopped going down when it reached the $30 level. Instead of shorting it as we wanted to on a fundamental basis, we actually went long and we ended up making five points instead of losing five points. That's a very good example of how sometimes you have to forget about the fundamentals and just listen to what the stock is telling you to do.

Never fall in love. Never convince yourself that an idea is going to work. In my experience, the positions you fall in love with are inevitably the ones in which you lose the most money.

The second example shows how fundamentals help us trade. We were long Inter-Tel because we found out from industry contacts that business was stronger than generally supposed. However, the sell side was quite slow to discover this, and they were putting negative notes out on the company. When we took the position, the stock was around $16 or so, and because of negative news from the sell side, it went down. There were a lot of shorts and it ended up going to around $13. I felt I was the only bid, buying the stock all the way down. My analyst, who had incredibly good contacts, knew that when they reported their quarter or pre-announced positively, there was a potential for the short squeeze. Slowly the news started coming out and the stock rebounded from $13 back to $16 and we bought it all the way back up. When it got back to the price at which we had initiated the position — when it got back to our cost price — instead of selling it because we were finally flat on the trade, we bought more.

This is an example of what I mean by how to size a position. You know just from being involved in flows whether the sellers are real or they're short-sellers, and for that period I knew that shorts were pressing the stock and I was one of the only bids out there. The second the stock got to my cost price, I knew that if I could buy more and cause a short squeeze, we'd end up making a lot more money. The story has a happy ending: we sold the stock at approximately $22.

Risk management in our portfolio means that no stock is greater than 10% of our portfolio and we also maintain a 30% minimum short position at all times when we're using maximum capital. Liquidity is very important. I run a small fund of less than $100 million because I think liquidity is crucial to success. I'm able to get in and out of positions without necessarily affecting price.

Liquidity is important. I run a small fund of less than $100 million because I think liquidity is crucial to success. I'm able to get in and out of positions without necessarily affecting price.

How is trading different now than it has been in the past? A good trader, in my opinion, is able to make money in any environment. If you listen to the market, then you'll understand what it's telling you to do, whether or not the market is a short or the market is a long. Short-term traders have to change their style very, very frequently. For example, in the first quarter of 2003, we saw shorts being squeezed because of an end-of-war rally, then a small-cap rally, then a rally in value and defensive names, and then a return into large-cap market leader names. Very different sectors and very different types of investors buy or sell those securities, but as short-term traders, we were able to see where the flow was going and take advantage on the long side and on the short side regardless of where the flow was coming from.

Trading has changed the most with regard to the proliferation of hedge funds. It used to be unique if you had an analyst sitting in on a CFO or CEO presentation who could call you from the conference and tell you whether or not to buy the stock. Now every single fund has an analyst in the conference who's waiting for those words and has the exact same idea, so trades tend to be more crowded.

Another change that affected short-term trading is Regulation Fair Disclosure. The sell side was not able to give as much color as they were in the past, and that affected their ability to help the buy side trade, which is why — in my opinion — if you have a fundamental analyst with very good industry contacts below the CEO or CFO but throughout the supply chain, you have a significant edge over hedge funds that rely strictly on the sell side for information.

Psychology and emotion affect the opportunity set for short-term traders to a great extent. I try to figure out what Wall Street is thinking because some of the best trades occur when you take the opposite side of the Street. You avoid crowded trades. I joke about this, but when I find out that some of my ex-bosses are involved in the same positions that I'm in, I inevitably know that it's a crowded trade and I probably should get out. When you get three or four or five calls from the sell side about the same idea, or when you check with friends on the buy side and everyone seems to be thinking the same thing — when your trade becomes consensus — that means it's crowded and it doesn't necessarily work. It's often the trades you are not sure about, because nobody's in them with you, where you can make the most money.

When your trade becomes consensus, that means it's crowded and it doesn't necessarily work. It's often the trades you are not sure about, because nobody's in them with you, where you can make the most money.

I don't necessarily agree with those who say that all information is reflected in the price, or if there is no inside information, that the price already reflects inside information. I think we have a very efficient market, yes, so at some point all information is reflected in the price. But until the information is out there, it can't be reflected in the price, and that's what funds like my fund do. We try to find out the information about a stock that isn't out in the market and position ourselves for when

To become an effective short-term trader, you have to be very voracious and soak up as much information from all possible sources. You need to absorb as much as you can, like a sponge, and then be able to figure out what information to use and what not to use.

that information comes out. Whether it's ahead of earnings or ahead of some kind of news event — drug failure, drug acceptance, etc. — we take calculated bets, and with good risk management, position ourselves until the moment when the market efficiently prices those stocks again.

To become an effective short-term trader, you have to be very voracious and soak up as much information from all possible sources. You need to absorb as much as you can, like a sponge, and then be able to figure out what information to use and what not to use. ■

Netta Korin is the portfolio manager and founder of Amgis Global Advisors, a hedge fund employing a short-term trading strategy. Before founding Amgis, Ms. Korin built and managed the London trading desk of Sigma Capital Limited, and at the same time, was co-employed by SAC Capital to analyze and generate specific concentrated trading ideas. Before Sigma, she was an analyst and trader at GLG Partners in London, where she co-managed funds for private investors in addition to trading a short-term fund. She began her career as an investment banking analyst for the Lehman Brothers Israel team in 1994. Ms. Korin has a graduate degree in international economics from the Johns Hopkins University Paul H. Nitze School of Advanced International Studies.

Trading Strategies and the Monetization of Ideas

Ken Grant, Exis Capital Management

June 19, 2003

I'm not a trader, so I have a slightly different point of view on trading strategies, and maybe one that's useful from a couple of different perspectives. For one thing, I am a risk manager with a risk management point of view. I'm also a capital allocator; I have to look at trading from the position of why it makes sense to actually put dollars at risk in these strategies.

Trading is a beneficial service that the market needs since it provides risk transference, price discovery, and liquidity.

First and foremost, trading is a beneficial service that the market needs since it provides risk transference, price discovery, and liquidity. I, for one, passionately believe that the market pays for what it values. We're providing a service to the marketplace and we expect to be paid on a routine basis for that service.

The second critical point that's sometimes overlooked is that trading is an actual bona fide skill set. I've gone so far in my own personal rhetoric to describe it as a science that lends itself to wide-ranging levels of skill across the marketplace. As in any other skill set, there are people who are outstanding at it; there are many people who are mediocre at it; and there are people who are dreadful at it.

If you're a short-term trader you need to worry about execution. You need to worry about the liquidity of the instruments you're trading. You need information fast. You need to be able to either hedge or liquidate your position very quickly.

I believe that if you take people with the innate skill set to trade, put them in a trading environment, and give them the resources and the support they need, they actually do have a genuine statistical advantage in the marketplace. Our methodology is to seek to exploit the trading environment. If you're a short-term trader you need to worry about execution. You need to worry about the liquidity of the instruments that you're trading. You need information fast. You need to be able to either hedge or liquidate your position very quickly. Everything we do is designed to harness opportunities and meet particular short-term challenges.

Our focus on creating a process to facilitate the trading decision affects risk management as well. As a result, we have very simple risk profiles where the risks are not only very easy to identify, but they're very easy to neutralize and eliminate altogether. For somebody like me, this is is a God-send. You wouldn't necessarily think that somebody in risk management would really want simple risks because all those complicated risks out there provide job security. Yet, the whole idea of being able to look at my screen and in a matter of seconds know exactly what I have and what I should do if we get into a situation where we need to intervene, is certainly something I consider a huge business advantage. I compare it to some other places where I've seen risks expressed in 25 currencies across 40 or 50 countries, every instrument class, and every asset class. It would take hours and hours just to understand where the pressure points were. I don't mean that as a criticism of those more complicated organizations, but if you can have it simpler, then you can react quicker. I think that is certainly a significant advantage.

For traders, the current landscape looks both good and bad. The equity markets have been more difficult for probably the better part of two years. The risk/reward curve has shifted in, perhaps not for all time, but I do believe the amount of reward in equity long/short trading on a short-term basis is probably less than it used to be for the amount of risk you have to take — certainly during the bubble and even in the year 2000 when the bubble burst and it wasn't too difficult to be net short.

The main factor that has damaged our business is price compression near the bottom of the market.

People have postulated as to why this is the case and certainly a lot of capital has come into long/short trading and because of it you had events like Regulation Fair Disclosure and decimalization. The main factor that has damaged our business is price compression near the bottom of the market. When two-thirds of the capitalization of the NASDAQ composite disappears, it's just not as easy to trade. In a more direct example, when you get all these high-flying tech stocks and they're trading in high double digits or even triple digits, they move around. Our lifeblood is volatility. When Nextel is at $5 and Cisco is at $12, there simply is no granularity. They don't move more than 20 or 30 cents, which means to get the dollar level of volatility you want, you have to trade a lot of shares. Then you give up your edge in terms of liquidity.

All of these occurrences have made the market a little bit more difficult than it was its heyday. Certainly we have seen signs of some improvement and I think there have been a couple of encouraging trends. Most notably, I think most trading strategies (this may be a little bit of blasphemy) will trade better in up markets than down markets, for a number of reasons: the uptick rule; the fact that when large institutions, mutual funds, and pension funds — the so-called "real money" — have inflows, it is easier to trade than when everything is going down; and finally, higher market prices are closely correlated to higher volatility bands and again, that's our lifeblood.

Another trend that will benefit us is the recent significant flood of capital into trading funds. While some succeeded in taking away a lot of what had been the great opportunities that existed two or three years ago, most of them have not succeeded in making any money in the process.

In early 2003, long/short equity trading has been very analogous to what happened to the foreign exchange market and the macro markets in the 1990s. A lot of people made some pretty easy money with the establishment of the European Monetary Union.

Investment strategies of all types cycle in and cycle out. In early 2003, long/short equity trading was very analogous to what happened to the foreign exchange market and the macro markets in the 1990s. A lot of people made some pretty easy money with the establishment of the European Monetary Union and the resulting convergence and trades that happened through the mid-1990s. But all of a sudden one morning that trade was gone. Then the volatility dropped through many quarters, there was a great deal of efficiency in the marketplace, and the opportunities simply were not there in abundance. Certainly that happened in things like foreign exchange and macro markets in the late 1990s, but I'm sure as every investor knows, most strategies have enjoyed a remarkable renaissance and my personal opinion is there are some good years coming ahead. I don't know that we are going to emerge immediately into a wonderful environment, but I do think that we will cycle out of it. We will get better trading conditions and we're going to be poised to make the most of them.

In terms of what's going to happen a little bit longer term, I see a trend where more and more of the way that the stock market is traded will look like what we do. I don't know if the holding periods are going to shrink to our particular levels, but I do believe there's going to be a continued trend to manage capital on a long/short basis. We see it in the proprietary groups of the sell side and we certainly see the big buy side institutions also moving in that direction.

There's going to be a continued trend to manage capital on a long/short basis. We see it in the proprietary groups of the sell side and we certainly see the big buy side institutions also moving in that direction.

The trend to combine long and short has to continue; otherwise the traditional funds will continue to underperform. They won't be able to pay their portfolio managers and they will operate at a disadvantage, which structurally makes no sense. Is this a good thing or a bad thing? Part of me says, "Well, we get this great advantage because mutual funds are strictly long." Another part of me — I think the greater part of me — says, "Fidelity Magellan trading long/short is something we need to fear, and it may actually create more opportunities than it takes away."

I have a great admiration for people who do short-term equity trading well. I think they are important to the market and I think they're an excellent part of any capital allocation. We are in the beginning of a process where people who are not at the upper end of the competency range in the short-term approach are having a great deal of difficulty. Capital will be disappearing as a result, and opportunities will be improving. I feel very confident about that. It's just a question of when improvement hits, because this isn't a game for amateurs. If you know what you're doing, you can do extremely well, but if you are operating at any kind of skill deficit, you can cause a lot of trouble.

When evaluating a short-term equity trading manager limited partners should remember that the psychological aspects are important. It is an important part of our selection process. I've observed that the people who do this job really well probably have some of these innate characteristics: They love the market; they are risk-seeking; they have a high attention to detail, an ability to really focus for long periods of time; and the whole challenge energizes them. Some of our best people are just hungry. They cannot wait for the bell to ring. Then when the bell rings again at 4:00, they cannot wait for 9:30 the next morning. That's something you simply can't teach. Our business does not lend itself to constant introspection. Reevaluating what went wrong on the trade three weeks ago is obviously not particularly adaptive.

The edge we have with our traders is not necessarily the selection process, since many hiring managers can recognize good trading skills and attitude. Rather, what we do by having them manage common pools of capital and watching screens on a tick-by-tick basis is that we can be very quick to intervene when things go wrong and to scale things up when they're going well. We can mix and match; we can hedge. These are the advantages of doing it on a single platform. In terms of how we evaluate somebody, I want to hear from them what it is that they are trying to accomplish by trading the markets all day long. What makes them buy? What makes them sell? How do they do portfolio construction? How do they hedge?

We are very quick to intervene when things go wrong and to scale things up when they're going well.

How do they get out of positions when things are going badly? How do they scale into them? How do they deal with catalysts? After you've been doing this for a while it's not difficult to spot inconsistencies where the inputs don't match up with the outputs. Any time you see that, it's obviously a big red flag. We're looking for people who really love this business, who we think understand and are comfortable in their role, and we give them a shot. But we also intervene pretty quickly when things don't go well, which is a big advantage of ours.

In contrast, I think the legion of day-traders that emerged in the late 1990s probably has some pretty serious deficiencies in competence. Going back to my comments about equity trading being a nonrandom skill set, day-trading is more of a dart-throwing process. Some people may be very skilled at throwing darts, but they're not necessarily skilled traders. If day traders want to devote themselves to the markets, they'll sit at home trading on a telephone hook-up line in an environment where nobody else is around and they don't have fundamental information flow. They don't have relationships and they're not doing fundamental analysis, which is precisely what puts them on the left side of the distribution. I think the vast majority of people in that business are probably doomed to failure. Not only because they don't have talent, but because they don't have the resources and they don't devote the energy like the people in most serious firms do. ■

Ken Grant is the managing partner of Exis Capital Management, a multi-strategy hedge fund in New York City. Before Exis, Mr. Grant spent four years at SAC Capital, first as their director of risk management and later as their chief investment strategist. He also spent two years as head of risk management for The Tudor Group. In the mid-1990's, he was the deputy treasurer for Société Générale in New York, focusing on foreign exchange and fixed income. He began his career in the Chicago futures markets, having spent four years as head of risk management for the Chicago Mercantile Exchange. Mr. Grant holds an MS in Economics from Columbia University and an MBA from the University of Chicago.

Fixed Income: Is the Party Over?

Michael Strauss, Commonfund Asset Management

February 12, 2004

The party ended in June 2003 for U.S. Treasuries. Ten-year notes at 4% are unsustainable. Over the last 50 years, 10-year Treasury notes have yielded about 2.5% or 2.75% above inflation. In the long term, inflation will go up as part of the business cycle. As the economy expands, corporations will reduce some of their price discounting and rising industrial commodity moves will add an upward bias to inflation over the next two years.

The recent history of 10-year Treasury yields presents a more disturbing situation. Since the advent of the modern budget deficit remember the day in the early 1980s when we hit $1 trillion in outstanding debt — we've now reached about $7 trillion in debt. Over the last 25 years, real 10-year Treasury yields have averaged about 4%, suggesting that if 4% is the norm under higher budget deficits, the yield on 10-year Treasury notes may move closer to 5%.

When the party ended for Treasuries, it required taking a very different view of corporate credit spreads and global bonds.

When the party ended for Treasuries, it required taking a very different view of corporate credit spreads and global bonds, in part based on the assumption that the economy would be in real recovery, which would spark a tremendous surge in corporate earnings. The surge would help the stock market and produce solid narrowing in corporate credit spreads.

High-yield option adjusted spreads have shrunk from 1,100 basis points to 400 basis points over triple A credits. These spreads do not offer much risk premium. The easy money in the high-yield area and in the risky junk credits game has already been made.

Global credits offer some good opportunities. The U.S. dollar may fall another 5%, so don't bet on a bid drop there to help boost global bond returns. There is little chance of getting another 15% decline in the dollar, producing 15% or 20% returns or higher for global bonds. Fixed-income opportunities exist with many developed nations (excluding Japan) that have yields higher than the U.S. 10-year note.

The U.S. economy is the "real McCoy." Federal Reserve chairman Alan Greenspan is the most optimistic we've ever seen him. The Fed targeted 4% growth. The risk to that forecast is on the upside. Expect it to be stronger.

But even after a very strong second half of the year growth rate that averaged a bit more than 6%, why aren't we seeing employment growth? If the economy is solid — we know we're getting great productivity growth — don't corporations have to start hiring people? Of course they do, so why aren't the employment statistics more positive? Maybe the problem is that the government can't count; that is, their counting mechanism lags the actual rate of job creation.

Every Friday we get anesthetized to one employment number: the payroll employment report, which has remained very weak. Although payroll statistics have moved into positive territory, no one can get excited about 100,000 or 120,000 gains. But when we look at the household series, we see a difference in employment trends. In the last year, household employment has shown two million net new jobs and the payroll employment records have shown a goose egg. There are some tabulation differentials, but even with those netted out, there is a good reason to believe that payroll employment over the last year might be understated by a million workers.

Part of the payroll employment survey is based on companies that have been in existence for five years, and it does not capture turning points in the economy very well. It eventually captures them (five years later) when we're through the revisions to the data, but when we get changes in economic cycles — either to the upside where it understates employment, or to the downside, where it overstates employment — the payroll employment numbers are effectively a lagging economic indicator and certainly not a leading indicator.

The 1994-1995 economic cycle was termed the jobless recovery. We found out five or six years later that we had the strongest job growth in the 1990s recovery we'd ever seen. In the second year of the recovery, the government originally reported payroll employment rose by 300,000 but we found out five years later that the actual number was 1.6 million. And for the third year of the recovery, what initially was 2.2 million in jobs became 3.2 million. The same thing happened in the economic bounce off the test of a recession in 1985-1986.

Some hints that the payroll figures are inaccurately understated can include data like the Manpower Planning Survey; the Challenger Gray Surveys[1]; and the total number of people collecting unemployment claims, which has dropped by about 700,000 over the last seven or eight months. One other perceptible statistic that no economist talks about is the sum of state withholding tax receipts, which suggests much stronger employment numbers. It tabulates what individuals withhold from their paychecks and what revenues or corporations withhold from individual paychecks and send to their state governments. It is a significant indicator because if that number is going up, there are only two assumptions you can make: Either people are voluntarily giving more money to the government out of the goodness of their heart, or we're probably getting stronger employment growth. I'd pick the stronger employment growth scenario.

Reliance on erroneous statistics has mounting significance. If employment growth is understated, it means personal income is understated. It means the savings rate is understated. It means the wealth effect is probably a little bit stronger than suspected.

Reliance on erroneous statistics has mounting significance. If employment growth is understated, it means personal income is understated. It means the savings rate is understated. It means the wealth effect is probably a little bit stronger than suspected. So while three years ago there was gossip about the death dive of consumer wealth, today consumer wealth is at a new all-time high.

The Fed will not stay on the sidelines for long. Mr. Greenspan probably realizes the employment numbers are understated, but even if they weren't, the economy is in the third year of its recovery. Non-farm payroll numbers probably will start to expand to 150,000 or 200,000. And the Fed will be smart enough to recognize that the computation is understated.

The reaction to the "patience at the Fed" quote, where Greenspan indicated that now was not the best time to raise short-term rates, was overemphasized. The major point

1. Challenger Gray & Christmas is an outplacement consulting company that publishes many surveys.

actually was, "The real Fed Funds rate will need to rise to a neutral level." Greenspan stressed that the real funds rate will eventually need to rise toward a more neutral level. No one quoted it but it is right there in the text. Greenspan recognizes that excess liquidity needs to be removed from the system. With 2% inflation, a "neutral level" translates into a Fed Funds rate of 3%-4% by 2006.

The deflation scare is over. Inflation will not tick downward again. There may be a computational downtick when the year-over-year spike in energy prices is passed. But on balance, the story on inflation may become a story of corporations attempting to etch out modest profit margin increases. It will cost a little bit more to fly on an airplane, go to a hotel, or buy a car, because the dollar's weakness has led to some foreign import prices that will allow U.S. manufacturers to remove some of their discounting.

The Personal Consumption Expenditures deflator,[2] which is the inflation "drug of choice" for the Fed, is probably somewhere near 1.5%. When asked if the Consumer Price Index is understating or overstating inflation, I'm in the minority that says it is understating. Anyone with children going to college can certainly share in the notion that some of the CPI inflation numbers for education and housing costs may not be completely accurate.

Some other upticks to inflation may arise from commodity prices, industrial commodity prices, and the weakness of the dollar. People needn't worry that inflation is going to be 4% or 5%; the more likely scenario is that inflation may move to 2%-3%.

The real return for five- and 10-year notes has vanished. Part of the reason fixed income in general and U.S. Treasuries in particular have arrived at the state they're in is because foreign central banks are buying Treasuries with reckless abandonment. Japan and China have been pushing U.S. Treasury bill prices artificially high to support their currencies. Japan bought $175 billion worth of Treasuries in 2003. They bought another $60 billion in January 2004. They're going to continue to buy Treasuries into the end of their fiscal year in March; then the process will fade.

China's buying will also continue, but they recognize that buying a 1% investment — because all the buying is centered in the front end of the market — isn't making much of a return. In China's case, they have to buy U.S. Treasuries until they buy our exports. If they want to maintain their currency peg, and they probably do for the next year or two, they've got to take that trade surplus and invest it in dollar assets, and short-dated Treasuries have been their vehicle.

There are still some opportunities for positive returns in fixed income in global bonds, in corporate bonds, in credits that are improving, in a flattening yield curve, and in taking long/short positions. From the playing and improving credit game, earnings on the equity side are going to be up at least 15% in 2004. The equity market might be at a high valuation at 18 times earnings, but it's a lot lower than the earnings yield on five-year Treasury notes, which is around 30 or 35 if we assume a 3% five-year note.

Over time, the earnings yield on five-year notes needs to go down, which means yields probably have to go up. The Fed will tighten rates again. Greenspan is trying to give the market a warning very similar to in the one he gave in 1993 ahead of the mid-1990s tightening cycle.

The expectation for the next 12 to 18 months is that Treasuries will not earn their

There are still some opportunities for positive returns in fixed income in global bonds, in corporate bonds, in credits that are improving, in a flattening yield curve, and in taking long/short positions.

2. The Fed switched to using the PCE deflator rather than the Consumer Price Index after Greenspan indicated that this was his favored measure over the CPI.

coupon yield. What their coupon pays will probably be lost in price depreciation. Corporate credits bought ahead of upgrade expectations, there may be a 4%-6% potential return there. Opportunity also exists in the distressed debt area, particularly in its middle market. In global bonds, there's potential in the neighborhood of 4%-8%, depending on how much the currency moves. On balance, it's a lot different than the returns people have become used to over the last three or four years.

Global bonds (including non-U.S. dollar/dollar block entities) are attractive because of the unfolding convergence of yields, particularly in Europe. The end result for the European Monetary Union is that they will need to lower rates. Potential inflation risks are more limited in Europe. There are no commodity price pressures; commodity prices are flat or down because of the strength of the Euro. There are no industrial price pressures to speak of due to the slack economy. There are industrial labor pressures, but once Germany gets through a labor adjustment process, labor's pressure in the system will weaken, which may open the door for Europe to cut rates a little bit and narrow the differential between yields, particularly in the front end of the market.

U.S. budget deficits are a concern. I don't believe it will be as bad as the $525 billion deficit the administration estimates; I calculate approximately $300 to $400 billion in budget deficits. Right now the battle in Washington is who can spend more or who can cut taxes more, not who can cut spending and raise taxes to get the budget deficit in balance. The issuance of front-loaded Treasury bills and short-dated Treasury notes suggests that as long as we have budget deficits, the trade to make is to put on yield curve flattening trades and take positions biased toward higher yields, particularly in the front end — the two-, three-, and five-year sector — and in the back end as well. The Treasuries trades that have worked the best in the last three or four years will probably perform the worst in the next three or four years.

This is still a good time for equities. Be toward the top end of the range in equity allocation; be toward the low end of the range in fixed income allocation; hold onto fixed income; be careful on the duration side; and take some advantage through a long/short function.

In the high-yield sector, the triple C credits have rallied the most. Some companies may not make it, so there will be an attempt to reverse. Focus on higher-grade high yields and those that might become high-grade corporate bonds two to three years from now.

The challenge is to short the duration bogey, and be prepared for a backup in Treasuries and when the dynamics of the foreign central bank buying in the front end change. This is still a good time for equities. Be toward the top end of the range in equity allocation; be toward the low end of the range in fixed income allocation; hold onto fixed income; be careful on the duration side; and take some advantage through a long/short function so as to not get hurt by a backup in market rates. ■

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FIXED INCOME: IS THE PARTY OVER?

Cliff Viner, III Offshore Advisors

February 12, 2004

We're entering a very important transition phase in how fixed-income markets are going to act and how they're going to perform.

Is the party over in fixed income? My view is that alternative investment managers must recognize we're entering a very important transition phase in how fixed-income markets are going to act and how they're going to perform.

Fixed-income securities have enjoyed a classic and vigorous bull market for the past three years. The key point about the transition phase is that many alternative investment strategies which worked so well for the past several years either will not work as well, or will not work at all — whether the bull continues or not; whether the rally stalls out; or if we enter a correction or a bear phase.

Alternative investment managers in fixed income have benefited from the bull market in many ways.

First, volatility remains high. Many managers just made long macro bets. The risks of such a strategy from current levels are quite clear.

Second, many managers attained their bull objectives and limited their risk by purchasing calls. This strategy will be much more difficult going forward for at least two reasons. 1) Volatility remains high even though it's down from the very high levels earlier in the cycle. 2) With term yields lower and short-term rates pegged, the forward yields — and the at-the-money strikes for the calls purchased — are no longer so attractively above spot levels. Thus, the margin of error in the call strategy diminishes as much smaller rises in rates from today's spot levels will cause all premium in the call to be lost.

Third, the "bull carry" game is affected by the same formula used for forward yields. There is much less carry today and, therefore, much less room to be wrong, as yields can easily rise past today's much closer forward rates.

Just as the at-the-money strikes are no longer so attractive, the bid for out-of-the-money volatility has cooled somewhat as the mortgage market has stabilized.

Fourth, many bullish call or call spread strategies benefited from the high bid for out-of-the-money volatility by the mortgage segment of the market. This allowed managers to establish extremely attractive call spread strategies, capitalizing on the high prices for the out-of-the-money strikes. But this will be more difficult going forward. Just as the at-the-money strikes are no longer so attractive, the bid for out-of-the-money volatility has cooled somewhat as the mortgage market has stabilized.

Attempting to sell out-of-the-money now means selling at extremely low strikes. The low strike options naturally have far less implied volatility, as they're affected to some degree by what's called "log normal option pricing" as these lower strikes approach the zero rate boundary. This strategy will not be as attractively priced in the future.

Fifth, many bullish managers successfully used yield curve steepeners to express their bullish views. The risk/reward of these strategies has also diminished greatly. Spot and forward steepness levels at which to enter these trades are already much greater than earlier in this cycle. Furthermore, even in a continued bull, or even in a somewhat stable market, there is a substantial risk of "bull flattening" as shorter-term rates stop going down, as they begin approaching the zero boundary while longer-term rates can continue to decline.

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Additionally, any interest rate rises carry the potential risk of curve flattening as well. Even further, flatteners such as two-year Treasuries vs. 10-year Treasuries or especially 2s-10s exhibit what's called negative convexity, which increases at today's lower interest rate levels, further reducing the attractiveness of these steepeners.

Sixth, many bullish managers used "conditional steepeners" to profit from the bull market. These are trades where instead of just buying 2s versus selling 10s, the manager buys calls on 2s versus selling calls on 10s. This structure gives the manager the comfort of being the only one in a bull market below the strikes he chooses. It was a good strategy, but this trade now has shortcomings; its attractiveness is diminished by the fact that the price of the volatility on the twos has increased relative to the price of volatility on the 10s, causing the trade to be even more costly, or in other words, greatly increasing the "break-even strike spread."

Seventh, bullish managers may have purchased or pursued conditional "curvature strategies." Similar to steepener tactics, they benefit from the front part of the curve (2s-10s, e.g.) getting steeper against the back part of the curve (10s-30s). The new entry levels are far above previous levels and the unusual volatility advantage for conditional curvature using options that prevailed for several years has diminished greatly.

There are several other aspects to fixed-income performance in this transition phase that are going to have great bearing on whether the performance party is over or not. Credit spreads have narrowed dramatically, which created profit windfalls in many sectors.

Corporate bond managers, asset backed bond managers, junk managers, and emerging market portfolios have all benefited by as much as hundreds of basis points of relative yield declines in their sectors. These declines are as great or sometimes greater than the bond bull market decline in general yields. With credit spreads at relatively narrower levels, this party will be impossible to repeat.

The party in convertible bonds has benefited from sharply declining interest rates, a renewed equity bull market, and significantly lower corporate credit spreads.

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Fixed-rate mortgages have benefited from a bond bull market — what are called declining option adjusted spreads on fixed-rate mortgages — and a steep curve that creates forward yields reducing the value of the short call position embedded in mortgages. Further, mortgage prices recently have benefited from the modestly lower market volatilities as the value of the short call embedded in the mortgages has declined. And even further, fixed-rate mortgages have benefited from a dramatic rise in the share of new mortgage market originations coming from floating-rate loans. Short-term rates have plunged more than long-term rates, enticing borrowers away from fixed-rate borrowing.

The party in inflation-linked securities, especially in the U.S., has performed extremely well, despite significant declines in inflation. These securities were supposed to be akin to floating-rate securities. They were designed to float, to appreciate in tempo with inflation. Over the past few years, however, there have been significant declines in real yields, on the order of 100 to 200 basis points, causing sharp price appreciation. Whether real yields declined because they were simply too attractive at the start (which is my basic notion), or because they have some relationship to nominal yields (which is certainly possible), or whether the implied floor on the securities becomes more valuable in what could have been a deflationary environment, these factors are generally not repeatable to any significant extent, and therefore this sector's great party in a forthcoming bull or bear environment may have reached its limits.

In general, the astute manager can take his time and continue to find attractive strategies. Many industry strategies currently in use, however, are very similar, so fixed-income returns may be significantly disappointing in all segments. I am concerned about the enormous amount of money pouring into all alternative strategies and alternative fixed income. I see greater competition for the types of structures usually employed. I see a lot of capital chasing very few trades. I'm apprehensive about the leverage the alternative universe creates with regard to the purchasing power, because if one dollar moves from a conventional manager who owned one dollar worth of bonds, when brought into the alternative universe, an alternative manager may leverage two, five, 10, 15 or 20 times. In addition, the fund-of-funds manager investing in the manager may be leveraged two or three times. That same dollar that chased one bond can easily create five, 10, or 50 dollars chasing other bonds as we move into the alternative investment industry. It's 1997 all over again, when hundreds of new entrants into fixed income emerged. Margins got compressed, trades got crowded, returns were diminished, and a shakeout diminished the herd. At some point, there is potential for a shakeout. I don't see that coming immediately, but I do see increased competition and margin compression.

In general, the astute manager can take his time and continue to find attractive strategies. Many industry strategies currently in use, however, are very similar, so fixed-income returns may be significantly disappointing in all segments.

Most people have forgotten that the first equation of economics is that the private-sector deficit or surplus equals the government-sector deficit or surplus in opposite, plus the external. In 2000, we were running a government surplus of 3% of Gross Domestic Product. By definition, that's taking away 3% of GDP's Treasury bills from the private sector. So in 2000, the private sector was in a 3% savings deficit from the government alone. In addition, the private sector had an external balance of negative 4%, spending more on externals than they were buying. That's a total of a 7% net private nominal savings deficit. To be able to sustain consumption, you must borrow; it's the only way economic activity is sustained. The Fed helped borrowing by lowering interest rates. There's no infusion of liquidity. The Fed does nothing of the sort; all they do is control the overnight rate.

With several years of those surpluses, net private savings, in nominal terms, declined. With several years of external imbalances, private nominal savings declined. It is only with the restoration of significant large deficits that we will be able to restore net nominal savings back to the levels that you need for a healthy economy. We've had significant impetus from the Fed, allowing borrowing, mortgage refinancing, and cash outs, but we are still not restoring net nominal savings

Tax cuts and inflation were positive factors in sustaining the economy. They will be again this year, but to re-establish the real significant aggregate demand necessary to return the economy to its former strength, the U.S. needs bigger budget deficits sometime down the road.

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The U.S., as a fiat currency, does not borrow. It's a reserve drain. The money is spent and the excess debits in the system are drained using the Treasury or Fed offering a security to maintain a Fed funds rate.

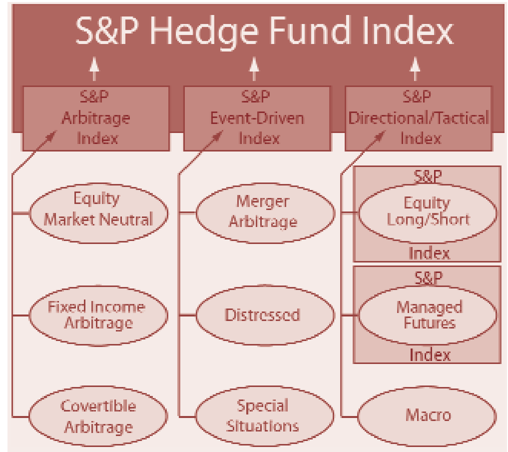
Europe has a different dynamic than the U.S. Europe has turned itself into a series of municipalities. And municipalities cannot run sustained deficits because the market will not allow them to run ever greater debt burdens.

There is potentially much greater opportunity in Europe because they are fiscally constrained from running the necessary deficits to increase aggregate demand. But they're also in a vicious cycle. Their deficits grow; they attempt to stop it by increasing taxes or reducing spending which only makes the economy worse; and tax revenues plunge and the deficits grow. The chance for an accident in Europe is relatively significant. One day they're not going to be able to roll over their commercial paper, and that will be that. It happened in 1969-1970 when one of the biggest corporations in the U.S., Penn Central, went into bankruptcy in a matter of minutes.

The U.S. doesn't want to have 1.2 billion Chinese competing with us in the marketplace. Exports are a cost, not a benefit. The last thing we would want is to encourage them to do anything but what they're doing right now, and that's providing us with extremely cheap sources of all the things we desire from them. That would only affect the level of the exchange rate and perhaps not necessarily the general level, because most foreign central bank buying is concentrated in the short end. The short end rates are basically administered by the U.S. central bank. ■

Cliff Viner is the co-founder of both III Associates (1982) and III Offshore Advisors (1993), which manage investor capital in relative value, fixed-income derivative strategies. Mr. Viner has been responsible, together with co-founder Warren Mosler, for the trading activities of all the investment funds managed by III and its affiliates for more than 20 years. From 1980 to 1984, he was a government securities trader and salesman for William Blair & Co. in Chicago. From 1975 to 1980, he was a portfolio manager for several equity mutual funds at Phoenix Mutual Life Insurance. From 1972 to 1975, Mr. Viner was an equities analyst with Phoenix in Hartford. He holds an MBA from the Wharton School and a BS from the University of Pennsylvania.

S&P Hedge Fund Index Data and Analysis



Standard & Poor's offers a growing family of hedge fund indices. The main S&P Hedge Fund Index offers investors an investable benchmark that is representative of the broad range of major strategies that hedge funds employ. The index currently has 40 constituents grouped into three sub-indices. The nine strategies are equally weighted to ensure well-rounded representation of hedge fund investment approaches and to avoid over-representation of currently popular strategies. The S&P Managed Futures Index and the S&P Equity Long/Short Index are expanded versions of their respective strategies in the main index with constituents added to ensure broader representativeness.

Standard & Poor's commenced calculation of S&P HFI values in October 2002, of the S&P MFI in January 2003, and the S&P ELSI in April 2004. The S&P Hedge Fund Pro Forma Indices returns are derived by Standard & Poor's from data received from the fund companies themselves to the extent available back to January 1998 for S&P HFI and S&P MFI and April 1999 for S&P ELSI. Standard & Poor's has not verified the validity or accuracy of this data and does not recommend any investment or other decision based on their results or on any other index calculation. The funds included were constituents of the S&P HFI as of September 2002, of the S&P MFI as of December 2002, or of the S&P ELSI as of March 2004. Past performance is not necessarily indicative of future results.

Daily Indicative Index Series Return Summary (as of June, 2004)

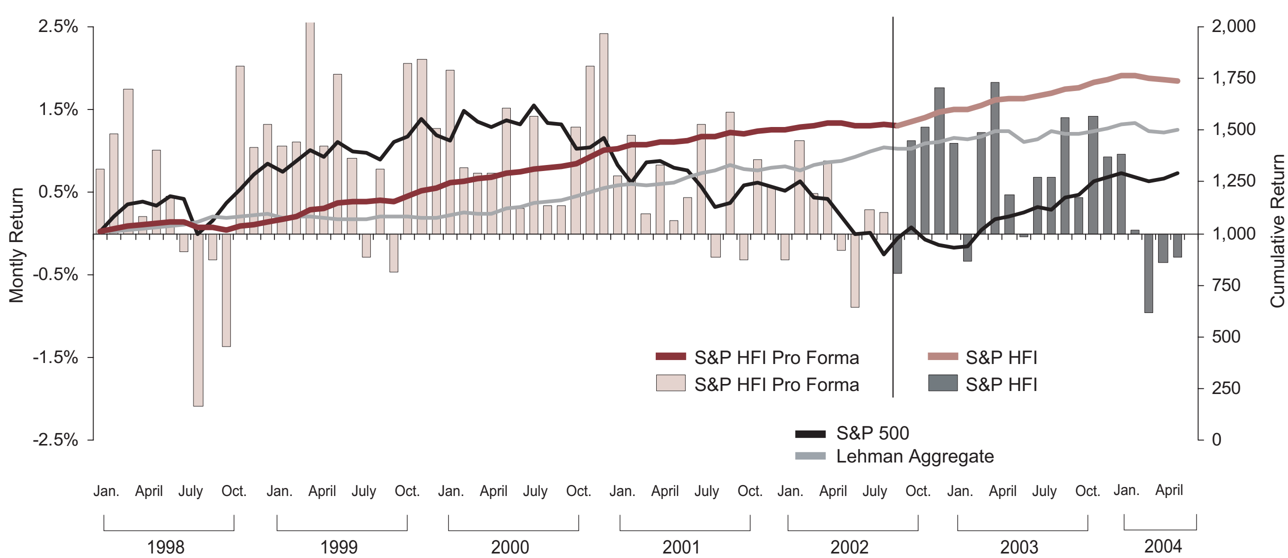
Index	MTD	QTD	YTD	ITD[1,2,3]
S&P Hedge Fund Index	-0.25%	-1.52%	0.34%	13.27%
S&P Arbitrage Index	-0.22%	0.06%	0.66%	3.76%
S&P Directional/Tactical Index	-0.91%	-4.71%	-1.67%	13.97%
S&P Event-Driven Index	0.37%	0.15%	2.03%	22.15%
S&P Managed Futures Index	-4.72%	-13.79%	-6.51%	1.77%
S&P Equity Long/Short Index	0.29%	-2.04%	-----	-2.04%

1. Inception (9/30/02) to Date for S&P HFI and three sub-indices.
2. Inception (12/31/02) to Date for S&P MFI. 3. Inception (3/30/2004) to Date for S&P ELSI.

www.sp-hedgefundindex.com

See the above Web site for a daily, dynamic update of this Index Return Summary, as well as historical returns, pro forma returns, methodology, announcements, and constituents.

Monthly and Cumulative Returns of S&P HFI and Pro Forma Index with S&P 500 and Lehman Aggregate Bond Index



Correlation to Other Asset Classes and Similar Indices (January 1998 - June 2004)

	S&P Hedge Fund Index	S&P Arbitrage Index	S&P Directional /Tactical Index	S&P Event-Driven Index	S&P Managed Futures Index	S&P Equity Long/Short Index	S&P 500	S&P Small-Cap 600	Lehman Agg. Bond Index	Merrill High Yield Master II	CSFB Tremont HF Index	HFR Fund Wgt. Comp.
S&P Hedge Fund Index	1.00											
S&P Arbitrage Index	0.51	1.00										
S&P Directional/Tactical Index	0.64	-0.11	1.00									
S&P Event-Driven Index	0.72	0.28	0.12	1.00								
S&P Managed Futures Index	0.27	-0.08	0.76	-0.34	1.00							
S&P Equity Long/Short Index	0.65	0.03	0.47	0.64	0.01	1.00						
S&P 500	$\boxed{0.25}$	-0.09	0.01	0.54	-0.36	0.55	1.00					
S&P SmallCap 600	$\boxed{0.45}$	-0.01	0.20	0.65	-0.25	0.70	0.72	1.00				
Lehman Aggregate Bond Index	$\boxed{0.14}$	0.02	0.33	-0.15	0.42	-0.13	-0.22	-0.16	1.00			
Merrill High Yield Master II	0.50	0.24	0.05	0.70	-0.27	0.37	0.47	0.53	0.07	1.00		
CSFB/Tremont HF Index	0.65	0.26	0.38	0.59	-0.03	0.84	0.40	0.60	0.01	0.41	1.00	
HFRI Fund Wgt. Comp.	0.64	0.09	0.34	0.74	-0.19	0.91	0.72	0.84	-0.10	0.55	0.82	1.00

Performance of Various S&P Indices and Other Asset Classes

	1999 (%)	2000 (%)	2001 (%)	2002 (%)	2003 (%)	2004 YTD* (%)	Last 12-Month Return (%)	3-Year Annual Return (%)	5-Year Annual Return (%)	3-Year Ann. Std. Dev. (%)	5-Year Ann. Std. Dev. (%)	5-Year Sharpe Ratio
S&P Hedge Fund Index	15.35	13.48	9.36	4.15	11.12	0.32	5.03	6.33	8.68	2.60	2.73	2.10
S&P Arbitrage Index	13.20	14.52	13.01	6.96	2.08	0.54	0.81	4.49	8.19	1.86	2.68	1.95
S&P Directional/Tactical Index	17.30	12.32	6.74	4.76	15.28	-1.80	5.85	7.09	8.76	5.36	6.16	0.94
S&P Event-Driven Index	15.52	13.40	8.47	0.69	15.97	2.21	8.09	7.15	8.88	4.36	3.91	1.52
S&P Managed Futures Index	6.29	15.92	5.70	20.03	8.89	-6.50	-5.18	8.76	8.49	18.15	17.34	0.32
S&P Equity Long/Short Index	37.84	12.29	6.71	-5.15	17.41	0.31	9.88	4.05	10.19	5.24	7.61	0.95
S&P 500	21.04	-9.10	-11.89	-22.10	28.68	3.44	19.10	-0.70	-2.21	16.50	16.68	-0.31
S&P 500/Barra Value	12.72	6.08	-11.71	-20.85	31.79	4.17	22.26	-0.57	0.13	18.04	17.11	-0.17
S&P 500/Barra Growth	28.25	-22.08	-12.73	-23.59	25.66	2.72	16.02	-1.09	-4.97	15.78	18.56	-0.43
S&P 500 - Consumer Discretionary	25.18	-20.00	2.79	-23.82	37.41	0.95	18.13	-0.41	-1.15	20.75	20.74	-0.20
S&P 500 - Consumer Staples	-15.09	16.78	-6.40	-4.26	11.57	6.13	16.01	6.25	2.65	10.22	14.32	-0.02
S&P 500 - Energy	18.73	15.68	-10.40	-11.13	25.63	13.14	31.84	5.39	5.44	16.96	16.92	0.15
S&P 500 - Financials	4.12	25.70	-8.95	-14.64	31.03	2.38	19.33	2.27	3.87	17.25	21.23	0.04
S&P 500 - Health Care	-10.66	37.05	-11.95	-18.82	15.06	2.14	5.59	-0.20	1.04	12.35	16.49	-0.12
S&P 500 - Industrials	21.50	5.88	-5.74	-26.34	32.20	7.37	28.99	-0.29	1.64	18.56	19.08	-0.07
S&P 500 - Information Technology	78.74	-40.90	-25.87	-37.41	47.23	0.24	25.42	-6.33	-10.41	34.57	38.64	-0.35
S&P 500 - Materials	25.26	-15.72	3.48	-5.46	38.19	0.73	31.87	9.20	3.32	21.50	22.77	0.02
S&P 500 - Telecommunication Services	19.14	-38.81	-12.25	-34.11	7.08	3.99	6.99	-12.88	-16.72	31.72	28.94	-0.68
S&P 500 - Utilities	-9.18	57.19	-30.44	-29.99	26.26	3.80	11.49	-10.03	-2.01	20.97	21.67	-0.23
S&P MidCap 400	14.72	17.51	-0.60	-14.51	35.62	6.08	27.98	6.58	9.05	17.24	17.87	0.34
S&P SmallCap 600	12.40	11.80	6.54	-14.63	38.79	10.05	35.25	9.35	10.69	19.10	19.61	0.39
CBOE Volatility Index (VIX)	-4.18	14.74	-11.36	20.25	-36.02	-21.68	-26.54	-9.05	-7.42	54.67	52.10	-0.20
S&P REIT Composite	-5.53	28.86	14.15	4.19	36.11	5.80	26.44	15.57	14.71	14.80	14.11	0.83
S&P Commodity Index	7.23	42.43	-31.68	27.19	21.74	10.33	25.63	12.73	11.52	15.88	16.12	0.53
S&P Global 1200	25.13	-10.79	-15.01	-19.55	32.94	3.72	23.77	1.30	-0.95	16.15	16.03	-0.24
S&P 700	32.60	-13.28	-20.26	-15.55	40.87	4.08	30.57	4.60	1.08	17.22	16.94	-0.11
S&P/IFCI (Investable Emerging Market)	67.11	-31.76	1.77	-3.94	57.16	0.69	35.12	14.90	5.14	21.68	22.16	0.10
S&P/IFCG (Global Emerging Market)	62.70	-28.77	-0.28	-5.65	54.44	1.50	33.04	13.24	4.32	19.61	19.92	0.07
U.S. T-Bills	4.66	5.85	3.45	1.60	1.02	0.52	1.00	1.48	2.96	0.19	0.55	-----
Lehman Aggregate Bond Index	-0.83	11.63	8.42	10.27	4.11	0.15	0.33	6.36	6.95	4.61	3.94	1.01
Merrill High Yield Master II	2.49	-5.14	4.49	-1.84	28.14	1.37	10.18	8.82	4.80	9.84	8.95	0.21

*As of June 30, 2004

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