Investment Management for Mortals

Overconfidence and self-deception are part of human nature. But knowing this opens the way to better decisions and wiser allocations.

by Donald R. Chambers, PhD, Research Associate

Having taught finance full time for 30 years, it is difficult for me to finish a long series without offering the readers a quiz. But this is a fun quiz. The quiz on page EX—2 contains 10 questions. There are no trick questions, and the questions are not difficult. They are selected from a wide spectrum of topics about which all of us have some knowledge but few of us have great knowledge.

Please take a few minutes to grab a pencil, read the instructions carefully, and fill in the 20 blanks. Then please use the answer key on page EX—4 to find out what your answers reveal about yourself.

Interpreting your results. This quiz does not seek to measure how knowledgeable a person is with regard to the subject areas. It is all about measuring a person's level of confidence in their answers: Is a person overconfident, underconfident, or appropriately confident.

The quiz estimates how likely you actually are to be correct when you believe that you are 90 percent likely to be correct. With 10 questions, the ideal outcome is that one the 10 true answers would lie outside of the ranges. If a person accurately perceives their level of knowledge, then the expected number of true answers lying outside the specified ranges should tend towards one in 10. If you scored zero, one, or two answers outside the range, you did not exhibit substantial overconfidence. Results with three or four answers outside the ranges indicate likely overconfidence, and answers of five or more outside the ranges indicate extreme overconfidence.

I have given this quiz to many undergraduate students, with five

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(extreme overconfidence) being the typical score. Males tend to exhibit more overconfidence than do females, and students interested in finance are more confident than other students. Researchers have found that in many ways we are confident that we know things that we really do not know. Their findings are important for investors. People with limited information about a particular investment will act as though they make good predictions about how the investment will perform. Therein lies a powerful explanation for why people pursue foolish financial strategies and repeat their mistakes without any apparent recognition of the need to revise their thinking. The old saying applies: "Frequently wrong, but seldom in doubt."

In investments, most people assume that they can predict and control their financial outcomes more than they actually can. Further, they do not seem to change their beliefs despite evidence that they are consistently wrong.

Behavioral issues. MPT uses reason to prescribe the behavior that investors should follow: Diversify fully by investing in the market portfolio. If people were driven entirely by logic, it would probably be easy to embrace MPT and stick to its investment approach.

In practice, the human mind is surprisingly poor at making decisions in the face of some types of uncertainty. Many investors, for example, believe that most investment professionals can consistently pick stocks and time markets better than untrained people. The investment industry fuels this notion because it helps the industry attract clients. But I believe that there are very few investment professionals with the talent to earn consistently superior returns. The few investment professionals that have that talent work for hedge funds, the super wealthy, or for themselves, not for the common investor.

It is human nature to hope to be a winner in the investments game. It

Author **Donald R. Chambers** is the Walter E. Hanson/KPMG Professor of Finance at Lafayette College in Easton, Pennsylvania.

is human nature to hope that there are easy paths to higher investment returns. These types of hope can be dangerous.

Imagine that a person is confronted with 100 different types of complex gambles, but that all of the gambles have been carefully designed to offer expected payoffs that are less than the amount gambled. In other words, imagine that a person walks into a casino.

The typical visitor will search all 100 gambles looking for one that offers him or her an edge. If we were perfect and rational analysts, we would know we cannot consistently beat the casino. But nobody is perfect. People make errors in analyzing the 100 opportunities, and many will think they can find some attractive gambles—especially if played at the right time with the right system.

The gambler will select a favorite bet and will begin to devise strategies to increase his or her chances even further. Of course, the gambler has not found a superior bet, he or she has simply made a mistake in analysis. In fact, the bet the gambler chooses is the bet that they have most misunderstood!

When typical investors search efficient financial markets for superior opportunities, they will examine a lot of them and correctly conclude that they offer ordinary returns based on their risks. The investors will keep searching until they find an investment that appears to offer great returns and minimal risk. But they have not found a superior investment. Rather, they have just sunk money into the investment they most misunderstood.

Even after investors have been burned, they are likely to interpret the events in a way that denies their mistakes and perpetuates their hopes for the future. For example, even though the investment only earned 5 percent when the market rose 25 percent, they will tell themselves, "I made a profit, didn't I?" Or they will modify trading systems each time the old system fails, claiming, "I simply bought too late or sold too early and will do better next time."

The four principles of MPT. MPT prescribes that investors buy and hold a well-diversified portfolio and stop making speculations through stock picking and market timing. MPT implies that investors should focus on four simple principles. They should diversify. They should maintain an appropriate level of aggregate risk. They should minimize transactions costs and management

Confidence Interval Quiz

For each question, provide a **lower value** and an **upper value** between which you are 90 percent confident that the true answer lies. Select the lower value for which you believe there is only a 5 percent chance that the actual answer is even lower. Select the upper value for which you believe there is only a 5 percent chance that the actual answer is even higher.

For example, consider a 90 percent confidence interval for the largest single-day drop in the Dow Jones Industrial Average. A financial expert might be 90 percent confident that the answer lies between -700 and -800. An inexperienced investor might be 90 percent confident that the answer lies between -100 and -1000. But this is not a survey of how much expertise you have in various areas. It is about confidence intervals.

With 90 percent probability, the actual value lies between these bounds

	lower bound	*upper bound*
1. How many people died in the sinking of the Titanic?	________	________
2. What is normal body temperature in degrees Celsius? (to the nearest one-tenth)	________	________
3. How many square miles are in Kansas? (to the nearest ten)	________	________
4. What year was Elton John born?	________	________
5. How many states did the U.S. have in 1825?	________	________
6. What is the height of the Washington Monument? (to the nearest foot)	________	________
7. What year was Harvard University founded?	________	________
8. How many air miles separate L.A. and Boston?	________	________
9. What is the world record men's one-mile run? (in minutes and seconds)	________	________
10. How many liters are in one U.S. gallon? (to the nearest one-hundredth)	________	________

When you are finished, please check the answers on page SI—4.

fees. And they should carefully consider tax implications.

Following the prescriptions of MPT helps investors and performs a role that is beneficial to the overall economy. In free markets, people serve each other by doing what they do best. I am a terrible plumber. I perform better as a teacher, and I am paid more to teach than to fix plumbing. When people pursue their interests, they make society a better place by contributing those skills that society values the most.

Financial speculation should be left to people with incredible analytical skills who can devote enormous hours to their analyses. Ordinary investors best serve themselves and others by being diversified. Somebody in society needs to bear the systematic risks generated by a modern economy. Investors who choose to do so are playing just as valid a role in society as the plumber and the teacher.

Some investors decide to keep all of their money in a safe place such as a bank. That is their right. Other investors opt to invest in the market in the hope of receiving, on average, a reward above the riskless rate. They may win. They may lose. But they definitely have contributed to society by bearing risk.

Holistic asset allocation. A common approach to investments is to hold a variety of accounts with various purposes and to hold securities in each account that satisfy those purposes. Retirement accounts might emphasize stocks for their long-term growth, and a vacation fund might hold short-term, low-risk bonds.

Investors might be wise to consider an alternative view of which securities to place into which accounts: Allocate a portfolio into various asset classes based on risk considerations. Then place those assets in various accounts based on issues such as taxation and transaction costs.

Doing this means following three steps. First, decide on an overall asset allocation (e.g., 60 percent in the market portfolio and 40 percent in the money market). Then, place stocks in accounts that are best for investments that offer capital gains such as taxable brokerage accounts. Finally, place bonds in accounts such as retirement accounts that are best for shielding interest income from taxes.

I label this a holistic approach to asset allocation. The idea is to manage risk through overall asset allocation according to a big picture. Since risk is controlled through allocation, the decisions of which assets to place in which accounts can focus on tax savings and other benefits.

Most investors do just the opposite. They tend to place bonds in taxable accounts that they view as short term and appropriate for safe assets. They place stocks in retirement accounts that they view as appropriate for longer term but riskier investments. The problem with this is that the taxation of retire-

Tax Advantages of Stocks

Stocks typically offer a substantial portion of their returns in the form of capital gains. This is the appreciation in the stock's price from the time it is purchased to the time it is sold.

In the U.S., stockholders do not pay federal income taxes on gains until the year in which the securities are sold. If the stock has been held long enough, the gains may be taxed at lower rates designed for long term capital gains.

The seemingly minor tax advantage of capital gains can substantially lower the present value of federal income taxes paid and, in most states, lower the state income tax paid. Here are seven tips for minimizing taxes for stocks held outside retirement accounts:

1. Time capital gains to occur in years when income tax rates are relatively low because of low income or in years prior to announced or anticipated legislative tax increases.

2. Time capital losses to occur in years when income tax rates are relatively high.

3. Defer capital gains to later years to take advantage of delayed taxation and the positive time value of money.

4. Subject to limitations, take capital losses soon. The resulting tax shield can provide immediate tax savings that can be reinvested.

5. Donate stocks with substantial gains in lieu of cash in order to receive full tax deductions without having to pay income taxes on the unrealized gains.

6. Pass stocks through the taxpayer's estate. Heirs can sell the stock and pay income taxes only on the gains made prior to the date of inheritance.

7. Gift stocks to children and others in lower tax brackets in lieu of cash from the proceeds of selling the stocks and paying taxes while in a high bracket.

ment accounts occurs at withdrawal and does not differentiate between income and capital gains. The tax advantages to capital gains are lost.

The tax advantages to stocks should not be treated lightly. In addition to the potential for preferred tax rates on long-term capital gains, stocks offer seven other advantages from capital gains timing as the box on page EX—3 indicates. Under current federal income tax laws, most stocks offer qualified dividends that are taxed at a lower rate than bond interest. Bonds are highly taxed and tend to be appropriate for retirement accounts (as long as equity returns are not enormously higher than bond returns).

On bubbles and panics. It is dangerous when people dismiss past price movements as bubbles or panics. This view tends to suggest that bubbles and panics can be predicted.

In classroom settings, I often play a game that illustrates my view of so-called speculative bubbles and panics. I tell my students that I am thinking of a number of dollars that a particular thing is worth and that I want them to guess it. After each guess, I tell them whether the number they guessed was too high or too low.

I usually pick a number around $50 billion. The guesses almost always begin with an upward trend that goes something like this: $20, $100, $1,000, $100,000, $10 million, $10 billion, $100 trillion. At that point, I finally say that the number is too high and the remaining guesses go something like this: $1 trillion, $1 billion, $100 billion, and so forth.

When these numbers are placed on a graph with dollars on the vertical axis and time on the horizontal axis, it almost always forms the same pattern as the so-called classic stock market bubble followed by a so-called panic. There is a long steep and increasing slope followed by a massive decline and then a narrowing zigzag pattern.

My students are not in a speculative frenzy or a widespread panic. They are simply making rational estimates in the face of high uncertainty.

I do not pick a number near $50 billion at random. I pick it as a ballpark approximation of the median value of the 100 or so largest firms in the U.S. The students' guesses more or less echo the expectations of a typical investor looking at a new company. Maybe the company will grow to be worth $50 billion, maybe it will fail.

The pattern of guesses that I obtain in class reflects rational responses by the students. But when we observe the same price pattern in financial markets, many of us succumb to our overconfident human nature. We assume that we can detect price patterns before they are complete and by doing so beat the market.

When investors look at market prices in retrospect they can mistakenly see bubbles and panics that they think are predictable. That is one reason why people are reluctant to buy and hold well-diversified portfolios. If investors fail to implement the advice of MPT they run the risk that their emotions will swing between fear and greed, that they will take needless speculations, overtrade, generate transactions costs, and miss tax-saving opportunities.

Final remarks. Financial markets play a powerful role in facilitating the incredible lifestyles enjoyed by most citizens of modern economies. But sophisticated economies can be a double-edged sword.

In 1986, I was asked to serve as an expert witness in two litigations that involved the terrible decision by a broker to recommend the purchase of call options for two retirement plans. Shortly afterward, in October 1987, the stock market crashed. Soon I was being contacted by many attorneys searching for an experienced expert witness.

Over the next decade or two I was asked to consult on perhaps 200 potential legal disputes regarding investment losses. I saw massive losses generated by options, futures contracts, margin debt, junk bonds, churning, and poor diversification. I saw ruined retirements, shattered dreams, and strained marriages. What I saw led me to devote much of my subsequent professional efforts to informing investors about how to avoid major investment mistakes.

This 10-part series, which concludes with this installment, is a formal exposition of the approach I believe offers increased chances of long-term investment success with decreased chances of major losses.

Happy investing.

Grading the Quiz

Use the correct answers to determine which answers lie within the range you provided and which answers lie outside that range. Count how many times the correct answer was *outside* your lower and upper bounds. (Some of these numbers are rounded and some differ slightly by source.)

1. 1,517 people 2. 37.0 degrees 3. 82,280 sq. miles 4. 1947 5. 24 states 6. 555 feet 7. 1636 8. 2,600 miles 9. 3:43 minutes 10. 3.79 liters