Behavioral Finance

Unlocking the Mysteries of Irrational Investment Decisions

INVESTMENT PRODUCTS: NOT FDIC INSURED • NO BANK GUARANTEE • MAY LOSE VALUE

"In all its messy, miraculous complexity, your brain is at its
best and worst — its most profoundly human — when you make decisions about money."
Jason Zweig, *Your Money and Your Brain*

In hindsight, it all seems so clear — and yet still so puzzling.

Why would investors pay a king's ransom to buy stocks at the tail end of an aging economic boom in the late 1990s, but not be interested in buying some of the same stocks for a fraction of the cost in a market priced for a near-depression a decade later? Why did people try to "flip" condos in Miami, Las Vegas and other hot property markets after real estate prices had already skyrocketed? And why would otherwise rational people think the oil price would hit $200 a barrel after it had just tripled over a relatively short period?

Manias — and the panics they frequently spawn — are nothing new. Irrational behavior about money knows no geographic or time constraints. In 1635, a set of 40 tulip bulbs could be exchanged for food, beer, wine, swine, sheep, hogs, bedding, clothing and real estate valued at *666 times* the annual income of the average Dutch resident.[1] Intelligence also does not seem to play a role. Sir Isaac Newton lost heavily when his investment in the South-Sea Company went bust in the early 18th century. "I can calculate the motions of heavenly bodies, but not the madness of people," Newton said of his experience.[2]

Wall Street Journal founder Charles Dow also recognized that stock prices were impacted by more than fundamentals. In 1899, Dow wrote that "there is always a disposition in people's minds to think that existing conditions will be permanent." It wasn't until the late 1970s, however, that the field of behavioral finance (also known as behavioral economics) began to develop, spurred by the publication of *Prospect Theory* by Daniel Kahneman and Amos Tversky. Their work was among the first attempts to explain the impact of psychology on financial decision-making and strongly countered the prevailing view that economic models assuming rationality could account for how people save and invest.

Though the field attracted few practitioners — or followers — during the economic boom of the 1980s and '90s, behavioral economics gained new credibility following the bursting of the dot-com bubble in 2000. In June 2003, the Federal Reserve Bank of Boston invited several leading behavioral economists to address its conference on Cape Cod.[3] The formation and ultimate demise of the subsequent housing bubble provided additional proof that financial decisions cannot be adequately explained by theories which assume investor rationality and market efficiency.

What behavioral economists have to say is of more than academic importance. Since asset prices are not necessarily an accurate reflection of actual value, prospective investors should understand what drives people to buy and sell. This knowledge could help them avoid severely overvalued assets in overheated markets, understand the motivations behind their own behavior, and differentiate between extraneous "noise" (financial pundits spewing predictions, for instance) and useful information. Professional money managers are trained to be objective and to make those crucial distinctions.

Behavioral finance recognizes what efficient market theory does not: that *people don't buy numbers, they buy feelings.* "All people (even smart ones) are affected by psychological biases," wrote John R. Nofsinger in his book, *Investment Madness: How Psychology Affects your Investing…and What to Do About It.* "Traditional finance assumes that people are rational and tells us how people should behave in order to maximize their wealth. These ideas have brought us arbitrage theory, portfolio theory, asset pricing theory, and option pricing theory. Alternatively, behavioral finance studies how people actually behave in a financial setting."[4]

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[1] Charles MacKay, *Extraordinary Popular Delusions & the Madness of Crowds* (New York: Three Rivers Press, 1980): 95. Amsterdam Tulip Museum. http://www.amsterdam.info/museums/tulip-museum/

[2] http://www.squarecirclez.com/blog/isaac-newton-loses-his-fortune/

[3] Stephen J. Dubner, "Calculating The Irrational In Economics," *The New York Times*, June 28, 2003.

[4] John R. Nofsinger, *Investment Madness: How Psychology Affects Your Investing…and What to Do About It* (New York: Prentice Hall, 2001): 8.

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Though behavioral economists have long recognized the impact of emotion on financial decision-making, the new science of neuroeconomics has provided important clues about its underlying physiology. It turns out that two factions within the brain often are at odds: the intuitive or "reflexive" system, and the analytical or "reflective" system.

The reflexive brain is constantly scanning for patterns and the rewards that those patterns might produce. When one is identified, a collection of neurons fires, triggering feelings of pleasure or greed. Similar activity occurs when expecting financial reward or a drug-induced high. Notably, anticipating what making a big profit will feel like brings more satisfaction than achieving the gain itself. The perception of a potential reward also triggers the release of dopamine in the brain, promoting a warm feeling of happiness and well-being.

Dopamine's connection to investing is through its addictive qualities. The long-term production of dopamine — a natural response to the "high" generated by making unexpectedly large sums of money — increases the number of dopamine receptors in the brain. And because more dopamine is released when the stimuli are unusual, investors "under the influence" are thus motivated to plow more money into obscure, riskier stocks or asset classes. Dopamine makes people addicted to the patterns that have brought pleasure, including those of rising stock, bond, or real estate prices that Charles Dow noted investors think will continue indefinitely.

But even if a "pattern" was once legitimate, history tells us that it won't last forever. And when the favorable pattern meets its inevitable demise, a very different brain activity takes hold. Now the action switches to an area of the brain known as the amygdala, home to the "fight or flight" response. In fact, the brain's fear center has an even stronger effect on behavior than does the greed response and the release of dopamine. "Losing money feels at least twice as painful as gaining the same amount feels good," wrote Jason Zweig in his groundbreaking book on the physiology of investing, *Your Money and Your Brain* .[5] That explains why investors are apt to bail out of stocks at precisely the time they should be piling in. In noting the absence of buyers after stocks had fallen by almost 90% between September 1929 and July 1932, financial journalist Andrew Tobias wrote that "Unreasoning greed had turned inside out. It had become unreasoning fear."[6]

For all the harm that unfettered emotion can inflict on an investment portfolio, its total removal from the financial decision-making process isn't ideal, either. One of the evolutionary purposes of intuition and emotion is to set up a reward system for wanting the things that human beings need to stay alive and well. The objective of prudent money management should be to harness emotions and put the double-edged sword of human intuition to good use.

That is where professional money managers could have an advantage over investors handling their own finances. It is not that professional investors don't feel emotion, but rather that they can perceive intuition and feelings in a more objective manner. They are trained to handle and interpret the "patterns" that can so easily trigger self-destructive financial behavior.

Professional managers that build wealth by realizing returns greater than the market but with lower volatility can help investors stay focused on achieving their financial objectives over the long term. Amid difficult or frothy market conditions, professional managers that employ stable investment strategies designed to reduce risk and preserve capital could help their clients resist the powerful "fight or flight" impulse that typically causes individual investors to make bad decisions — often at precisely the wrong times.

Of course, it is important to recognize that the application of behavioral finance does have limitations. It can't tell when bubbles will pop or when extended periods of irrationality will end. Similarly, it cannot help investors to profit from market excesses.

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[5] Jason Zweig, *Your Money and Your Brain* (New York: Simon & Schuster, 2007): 152.

[6] Charles MacKay, *Extraordinary Popular Delusions & the Madness of Crowds* (New York: Three Rivers Press, 1980): xi.

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It can, however, help investors to avoid the financially devastating "madness of crowds." There may be no more important objective in all of money management.

"Traditional finance assumes that people are rational and tells us how people should behave in order to maximize their wealth… behavioral finance studies how people actually behave in a financial setting."

John R. Nofsinger

Professor of Finance, Washington State University

Suggested Reading

Charles MacKay, *Extraordinary Popular Delusions & the Madness of Crowds* (New York: Three Rivers Press, 1980).

Jason Zweig, *Your Money and Your Brain* (New York: Simon & Schuster, 2007).

John R. Nofsinger, *Investment Madness: How Psychology Affects Your Investing…and What to Do About It* (New York: Prentice Hall, 2001).

Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk." *Econometrica*, Vol. 47, No. 2; pp. 263-291, March 1979.

Lorraine Chen Idson, Nira Liberman and E. Tory Higgins, "Distinguishing Gains from Nonlosses and Losses from Nongains: A Regulatory Focus Perspective on Hedonic Intensity." *Journal of Experimental Social Psychology*; Volume 36; pp. 252-274; 2000.