BEHAVIORAL FINANCE

Finance for Normal People

By Meir Statman, PhD

Editor's note: This article is an excerpt from Finance for Normal People: How Investors and Markets Behave, *Oxford University Press, 2017.*

Behavioral finance is finance for normal people, like you and me. Normal people are not irrational. Indeed, we are mostly intelligent and usually "normal-smart." We do not go out of our way to be ignorant, and we do not go out of our way to commit cognitive and emotional errors. Instead, we do so on our way to seeking and getting the utilitarian, expressive, and emotional benefits we want. Sometimes, however, we are "normal-foolish," misled by cognitive errors such as hindsight and overconfidence, and emotional errors such as exaggerated fear and unrealistic hope.

Behavioral finance presented in my book is a second-generation behavioral finance. The first generation, starting in the early 1980s, largely accepted standard finance's notion of people's wants as "rational" wants—restricted to the utilitarian benefits of high returns and low risk. That first generation commonly described people as "irrational"—succumbing to cognitive and emotional errors and misled on their way to their rational wants. The second generation of behavioral finance describes people as normal. It begins by acknowledging the full range of people's normal wants and their benefits—utilitarian, expressive, and emotional—distinguishes normal wants from errors, and offers guidance on using shortcuts and avoiding errors on the way to satisfying normal wants.

People's normal wants, even more than their cognitive and emotional shortcuts and errors, underlie answers to important questions of finance, including saving and spending, portfolio construction, asset pricing, and market efficiency.

We want more from our investments than the utilitarian benefits of wealth. We want the expressive and emotional benefits of hope for riches and freedom from the fear of poverty, nurturing our children and families, being true to our values, gaining high social status, playing games and winning, and more.

The expressive and emotional benefits of playing investment games and winning attract billionaire investment professionals just as they attract amateur day traders and the rest of us. Listen to John Paulson of the Paulson & Co. hedge fund, known for the billions he made on mortgage-backed securities in the 2008–2009 financial crisis. Paulson, like many of his peers, does not intend to retire anytime soon even although his wealth vastly exceeds what he can spend in many lifetimes. "I'm still relatively young, you know, being 56," he said. "If you look at [George] Soros—he's 81, I think. [Warren] Buffett, he's 81. How old is [Carl] Icahn?"

Paulson is clear about investing as a game and candid about his wants for the expressive and emotional benefits of playing and winning. "Some people like playing chess, some like backgammon. This is like a game, and playing games is fun," he said, adding, "It's more fun when you win" (Kolhatkar 2012).

We often hear that behavioral finance is nothing more than a collection of stories about irrational people misled by cognitive and emotional errors, that it lacks the unified structure of standard finance. Yet today's standard finance is no longer unified because wide cracks have opened between its theory and the evidence. Behavioral finance is a unified structure that incorporates parts of standard finance, replaces others, and includes bridges between theory, evidence, and practice.

Standard finance is built on five foundation blocks:

1. People are rational.
2. People construct portfolios as described by mean-variance portfolio theory, where people's portfolio-wants include only high expected returns and low risk.
3. People save and spend as described by standard life-cycle theory, where people find it easy to find and follow the right way to save and spend.
4. Expected returns of investments are accounted for by standard asset pricing theory, where differences in expected returns are determined only by differences in risk.
5. Markets are efficient, in the sense that prices equal market values and in the sense that markets are hard to beat.

Behavioral finance offers an alternative foundation block for each of the five foundation blocks of standard finance, incorporating knowledge about people's wants and

their cognitive and emotional shortcuts and errors. According to behavioral finance:

1. People are normal.
2. People construct portfolios as described by behavioral portfolio theory, where people's portfolio-wants extend beyond high expected returns and low risk, to characteristics such as for social responsibility and social status.
3. People save and spend as described by behavioral life-cycle theory, where impediments, such as weak self-control, make it difficult to find and follow the right way to save and spend.
4. Expected returns of investments are accounted for by behavioral asset pricing theory, where differences in expected returns are determined by more than differences in risk, such as by levels of social responsibility and social status.
5. Markets are not efficient in the sense that prices equal market values, but they are efficient in the sense that markets are hard to beat.

Standard finance, also known as modern finance or modern portfolio theory, dates to the late 1950s and early 1960s. Merton Miller and Franco Modigliani, each of whom went on to win Nobel prizes in economics, described investors as rational in 1961 (Miller and Modigliani 1961). Eugene Fama, who also won a Nobel prize, described efficient markets in 1965 (Fama 1965). Harry Markowitz (1952), another Nobelist, prescribed the initial form of mean-variance portfolios to investors who care only about portfolios' expected returns and risk, and Markowitz (1959) prescribed these portfolios in a more detailed form. William Sharpe, still another Nobel winner, adopted Markowitz's prescription of mean-variance portfolios as if it is a description of actual investor choices, and in 1964 introduced the capital asset pricing model (CAPM) (Sharpe 1964). According to CAPM, differences in expected returns are determined only by differences in risk.

Standard finance was preceded by what we might call proto-behavioral finance and followed, beginning in the early 1980s, by behavioral finance. Proto-behavioral finance was the "obese" era of finance. It acknowledged normal wants for utilitarian, expressive, and emotional benefits, and it described normal behavior guided by cognitive and emotional shortcuts and derailed by cognitive and emotional errors. But proto-behavioral finance was essentially unstructured and unfit, often going straight from anecdotes to general conclusions.

Standard finance ruled in the "anorexic" era of finance. Proponents of standard finance were busy excluding questions from the domain of finance rather than answering them. Hersh Shefrin and I, early proponents of behavioral finance, argued in a 1984 article that investors' wants and cognitive and emotional shortcuts and errors affect their preferences for particular stocks (Shefrin and Statman 1984). Merton Miller (1986), a founder of standard finance, responded in a 1986 article:

> *[S]tocks are usually more than just the abstract "bundles of return" of our economic models. Behind each holding may be a story of family business, family quarrels, legacies received, divorce settlements, and a host of other considerations almost totally irrelevant to our theories of portfolio selection. That we abstract from all these stories in building our models, is not because the stories are uninteresting but because they may be too interesting and thereby distract us from the pervasive market forces that should be our principal concern.*

Yet questions about the effects of family businesses, family quarrels, legacies, and divorce settlements are questions of finance. Underlying these questions are wants for utilitarian, expressive, and emotional benefits, instincts for taking cognitive and emotional shortcuts, and pitfalls of cognitive and emotional errors. We might splurge with our parents' bequest money but feel compelled to preserve for our children the money our parents labeled as a legacy. We might be reluctant to sell stocks and spend their proceeds, yet ready to spend dividends. Moreover, pervasive market forces are powered by our behavior. We cannot hope to understand these forces unless we understand that behavior.

Behavioral finance is still under construction today, as we strive for a "muscular and fit" finance. The concept describes the wants, shortcuts, and errors that affect the behavior of normal people and are reflected in financial markets. Behavioral finance includes explorations into our wants for expressive and emotional benefits of investments beyond the utilitarian benefits of high profits, the shortcuts we employ, the cognitive and emotional errors we commit on our way to our wants, how we construct our portfolios, why some investments tend to yield higher returns than others, and whether we can hope to beat the market. And behavioral finance includes lessons for people who strive to transform themselves from ignorant to knowledgeable and increase the ratio of smart to foolish behavior.

Normal People

We use the term "rational" in everyday language as equivalent to "normal-smart." Financial economists, however, use the term "rational" more narrowly in their writings and models. The brains of rational people, as economists have portrayed them, are never full; they are immune to cognitive and emotional errors and able to process huge amounts of information quickly and correctly. The brains of normal people, however, are often full, like the brain of the student in the Far Side cartoon, by Gary Larson, who raises his hand and asks, "Mr. Osborne, may I be excused? My brain is full."

Merton Miller and Franco Modigliani described rational people in their 1961 article about dividends. Rational people, they wrote, are people who "always prefer more wealth to less and are indifferent as to whether a given increment to their wealth takes the form of cash payments or an increase in the market value of their holdings of shares." This is a good beginning of a description of the rational people of standard finance.

The rational people of standard finance can be described more comprehensively as people who care only about utilitarian benefits and are immune to the entire range of cognitive and emotional errors. Rational

people "always prefer more wealth to less." They are never willing to sacrifice the utilitarian benefits of high wealth for lower wealth accompanied by expressive and emotional benefits such as those of social responsibility or social status. And rational people "are indifferent as to whether a given increment to their wealth takes the form of cash payments or an increase in the market value of their holdings of shares." They never commit framing errors that make a dollar of cash dividends seem larger than a dollar increase in the market value of their shares. Rational people also are immune to cognitive and emotional errors beyond framing errors. Rational people never commit cognitive errors such as hindsight errors, which mislead them to conclude they can see the future in foresight as clearly as they see the past in hindsight; and confirmation errors, which mislead them into looking for evidence confirming their views and overlooking disconfirming evidence. And rational people never commit emotional errors such as exaggerated fear and unrealistic hope.

Think of a rational person whose $50,000 wealth consists of 100 shares of company stock with a current share price of $500. She is immune to framing errors that make a dollar of company-paid cash dividends seem larger than a dollar increase in the market value of her shares. She is indifferent about receiving a 3-percent company-paid cash dividend, amounting to $1,500, and not receiving a dividend. This is because, in the absence of taxes and transaction costs, the price of the shares can be expected to drop by 3 percent to $48,500 once the dividend is paid, leaving her with the same $50,000 of wealth she would have had if the company did not pay a dividend.

Normal people, however, are not always indifferent about wealth in the form of capital and equal wealth composed of capital and dividend. Framing wealth into distinct mental accounts—buckets of capital and buckets of dividends—helps normal people control their spending when self-control is too weak to withstand spending temptations. Normal people do so by following the rule "spend dividends, but don't dip into capital." Rational people have no use for such a rule because they are immune to framing errors, knowing that an increment to their wealth in the form of dividends is identical to an increment in their wealth in the form of capital, and because perfect self-control protects them from spending temptations.

> *"Cognitive and emotional shortcuts turn into errors when they take us far from our best choices. Emotional shortcuts stirred by the fragrance of fresh cookies might induce us to buy a house they were baked in, overlooking a shaky foundation and leaky roof."*

Cognitive and Emotional Shortcuts and Errors

Which restaurant should we choose for dinner tonight? We care about a range of benefits and costs when choosing a restaurant, including its meal price—high, medium, or low—its meal quality, whether it has, say, one, three, or five stars, and its distance away, whether one, two, or six miles.

Rational people's brains are never full. They are able to rank all restaurants by benefits and costs quickly and accurately, and choose the best. But ranking all restaurants by the three sets of benefits and costs is complicated, and the brains of normal people are often full. We begin with a cognitive shortcut that simplifies the problem, perhaps by deleting consideration of stars, or limiting distance to one mile and the price to medium. We might add an emotional shortcut, making Italian cuisine more appealing tonight than French or Japanese. We dine that evening at a good restaurant, even if not the best—a medium-priced Italian restaurant one mile away.

Good shortcuts take us close to the best choices, solutions, and answers. An Italian restaurant one-and-a-half miles away might have been the best choice if we did not limit our search to restaurants within a mile. But the choice of an Italian restaurant one mile away comes close enough to our best choice.

Cognitive and emotional shortcuts turn into errors when they take us far from our best choices. Emotional shortcuts stirred by the fragrance of fresh cookies might induce us to buy a house they were baked in, overlooking a shaky foundation and leaky roof. Cognitive shortcuts that simplify choices induce us to buy 100 shares when a stockbroker offers a choice of 100 or 200 shares, when we would have chosen to buy no shares if it were among the presented choices.

System 1 and System 2

Intuition, reflected in cognitive and emotional shortcuts, leads us right in most of life. But reflection leads us better when intuition misleads. Psychologists Keith Stanovich and Richard West and Nobel Laureate psychologist Daniel Kahneman described two systems in our minds, System 1 and System 2 (Stanovich and West 2000; Kahneman 2011). System 1 is the intuitive "blink" system—automatic, fast, and effortless—whereas System 2 is the reflective "think" system—controlled, slow, and effortful.

We might begin with a System 1 intuitive claim or hypothesis, such as the claim that stocks of companies paying generous dividends yield higher returns than stocks of companies paying no dividends. But then we subject that claim to the reflective System 2, examining the claim by the tools of science—logic and empirical evidence—in a controlled, slow, and effortful process.

Use of System 2 is easier when we have time to engage it, and it is most beneficial when the consequences of poor choices by System 1 are substantial. Choosing the fish entrée by our System 1 gut is a good cognitive and emotional shortcut when a waiter hovers over us and our tablemates are

impatient. So is recoiling by System 1 instinct from a tossed rubber snake. But choosing to buy a house without use of System 2 thinking is an error, and so is a choice to forego diversification in our portfolios.

Reflect on a question from the Cognitive Reflection Test (CRT): "If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?" The intuitive answer, processed by System 1, is 100 minutes but the reflective answer, processed by System 2, is 5 minutes.[1]

Rational people use the reflective System 2 whenever the intuitive System 1 misleads, whereas normal people regularly forego reflection once they have found an answer by System 1. Yet normal people vary, standing at points along the range from ignorant to knowledgeable. Knowledgeable people have learned, imperfectly and with much effort, to use System 2 when System 1 misleads.

From Ignorant to Knowledgeable

Teachers of economics and finance guide students in the search and application of financial-facts, human-behavior, and information knowledge. They guide students to ignore sunk costs—costs that already have been incurred and cannot be salvaged—even when cognitive and emotional errors prod them otherwise; and they apply sunk-cost lessons in life beyond investments. Professors of economics are likely to leave disappointing movies earlier than professors of biology or the humanities, acknowledging that it is best to ignore sunk time spent watching the early part of a bad movie, as that time cannot be salvaged, and not sink additional time salvageable by leaving the theater (Larrick et al. 1993).

Experience also can be a good teacher. People learn the diversification benefits of international stocks in their portfolios (Bekaert et al. 2015). The proportion of such stocks increased over the years in the portfolios of both older and younger people. Moreover, educated people possessing financial-facts knowledge allocate more of their portfolios to international stocks than less educated people.

Ignorant people have not learned to proceed beyond the intuitive System 1 even when it misleads. Moreover, these people often mistrust financial-facts knowledge. A survey asked economic experts and average Americans whether they agree with statements such as: "It is hard to predict stock prices." Answers reveal that 100 percent of economic experts agreed, whereas only 55 percent of average Americans did. The mistrust of average Americans in financial-facts knowledge is evident in the finding that the proportion of these Americans who agreed that it is hard to predict stock prices declined from 55 percent to 2 percent when told that economic experts agreed with the statement (Sapienza and Zingales 2013).

In fact, there is much evidence that it is difficult to forecast stock prices, qualifying that difficulty as a financial fact. Neither amateur investors, nor writers of investment newsletters, nor Wall Street strategists are good at predicting stock prices. Indeed, predictions of above-average returns generally were followed by below-average returns, and predictions of below-average returns generally were followed by above-average returns (Fisher and Statman 2000).

Still, although System 2 generally points us toward better answers than System 1, it does not always deliver us to sure and correct answers. Approximately 39 percent of economic experts agreed that chief executive officers are overpaid, but most experts disagreed or were unsure. Approximately 95 percent of economic experts agreed that the North American Free Trade Agreement (NAFTA) increased economic welfare, but a few experts disagreed or were unsure. And the proportion of economic experts who agreed that the benefits of the economic stimulus package of 2009 exceeded its costs was only slightly higher than the proportion of those who disagreed or were unsure.

We pay in money, time, and exertion, both physical and mental, when we transform ourselves from ignorant into knowledgeable in any activity, whether it concerns medicine, driving, or investments. And we pay in money, time, and exertion when we substitute the reflective System 2 for the intuitive System 1. Transformation is worthwhile when benefits exceed costs. It is generally worthwhile for Americans to pay the cost of transformation into knowledgeable drivers staying on the right side of the road. But it is not generally worthwhile for them to pay the cost of transformation into knowledgeable drivers keeping to the left side of the road, as in Britain, Australia, and South Africa. Still, it is worthwhile for Americans, Britons, Australians, and South-Africans to transform themselves from ignorant into knowledgeable investors.

I was among the students transformed from ignorant to knowledgeable about dividends by Miller and Modigliani's 1961 article. I came to the article as ignorant, confusing frame and substance in the belief that dollars received in the form of company-paid dividends are different in substance, not only in frame, from dollars received from the sale of shares of stocks. Specifically, I thought that the two are different because dollars from company-paid dividends tend to be stable from year to year and, therefore, less risky than dollars from the sale of shares of stock whose prices can fluctuate greatly day by day. Miller and Modigliani's exposition transformed me.

Approximately 59 percent of mortgage borrowers committed refinancing errors—52 percent chose mortgages with less-than-best interest rates, 17 percent waited too long to refinance, and 10 percent committed both errors. Knowledgeable borrowers made smaller errors, refinancing at rates closer to optimal and waiting less time after mortgage rates were optimal. Moreover, borrowers transformed themselves from ignorant to knowledgeable as they learned from their refinancing errors, committing smaller errors on their second refinancing than on their first.

Still, financial-facts knowledge is widely deficient. The Financial Industry Regulatory Authority (FINRA) found that only 37 per-

cent of people have high financial literacy, meaning they could answer correctly four or more questions on a five-question financial literacy quiz (FINRA 2016). We constantly need to learn and check ourselves about what we know.

Conclusion

Behavioral finance is finance for normal people and with normal people. It is about what we—normal consumers, savers, investors, and managers—want as we make financial choices, what we know, think and feel about financial choices, how we behave, and how our behavior affects financial markets and is reflected in them.

Behavioral finance is also about the transformation from a normal-ignorant stage to one of being normal-knowledgeable, learning the lessons of behavioral finance and applying them to reduce ignorance, gain knowledge, and increase the ratio of smart to foolish behavior on our way to seeking and getting what we want.

Shortcuts are the intuitive "blink" System 1 in our normal minds, leading to good choices in most of life. But shortcuts turn into errors when they mislead us into poor choices. System 2, the reflective "think" system in our minds, leads to better choices when System 1 misleads. Still, we are not doomed to ignorance or to being misled by System 1. We can learn and transform ourselves from normal-ignorant to normal-knowledgeable. We have learned by System 2 that the earth is round, even though System 1 tells us that it is flat, and we can learn by System 2 that predicting stock prices is difficult, even if System 1 tells us that it is easy.

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Endnote

1. System 1 would have led more of us to the correct answer to an equivalent question. "If it takes 9 women 9 months to give birth to 9 babies, how long would it take 100 women to give birth to 100 babies?"

References

Bekaert, Geert, Kenton Hoyem, Wei-Yin Hu, and Enrichetta Ravina. 2015. Who Is Internationally Diversified? Evidence from 296 401(k) Plans (April 21). http://ssrn.com/abstract=2417976.

Fama, Eugene F. 1965. The Behavior of Stock-Market Prices. *Journal of Business* 38, no. 1 (January): 34–105.

Fisher, Kenneth, and Meir Statman. 2000. Investor Sentiment and Stock Returns. *Financial Analysts Journal* 56, no. 2 (March/April): 16–23.

FINRA. 2016. Americans' Financial Capability Growing Stronger, but Not for All Groups: FINRA Foundation Study (July 12). https://www.finra.org/newsroom/2016/americans-financial-capability-growing-stronger-not-all-groups-finra-foundation-study.

Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.

Kolhatkar, Sheelah. 2012. Paulson Forgoes Prognostication as Greatest Trade Sequel Flops. *Bloomberg* (June 28). http://www.bloomberg.com/news/2012-06-28/paulson-forgoes-prognostication-as-greatest-trade-sequel-flops.html.

Larrick, Richard P., Richard E. Nisbett, and James N. Morgan. 1993. Who Uses the Normative Rules of Choice. In Richard E. Nisbett, ed., *Rules for Reasoning* (Hillsdale, NJ: Lawrence Erlbaum Associates, Inc., 1993): 277–294.

Markowitz, Harry. 1952. Portfolio Selection. *Journal of Finance* 7, no. 1 (March): 77–91.

———. 1959. *Portfolio Selection: Diversification of Investments*. New York: John Wiley & Sons.

Miller, Merton. 1986. Behavioral Rationality in Finance: The Case of Dividends. *Journal of Business* 59, no. 4 (October): 451–468.

Miller, Merton, and Franco Modigliani. 1961. Dividend Policy, Growth, and the Valuation of Shares. *Journal of Business* 34, no. 4 (October): 411–433.

Sapienza, Paola, and Luigi Zingales. 2013. Economic Experts versus Average Americans. *American Economic Review* 103, no. 3: 636–642

Sharpe, William. 1964. Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *Journal of Finance* 19, no. 3 (September): 425–442.

Shefrin, Hersh, and Meir Statman. 1984. Explaining Investor Preference for Cash Dividends. *Journal of Financial Economics* 13, no. 2 (June): 253–282.

Stanovich, Keith E., and Richard F. West. 2000. Individual Differences in Reasoning: Implications for the Rationality Debate? *Behavioral and Brain Sciences* 23, no. 5: 645–665.