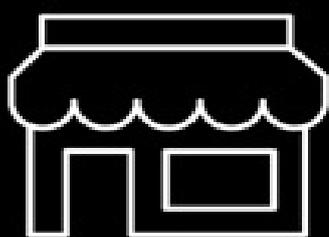
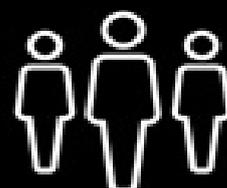
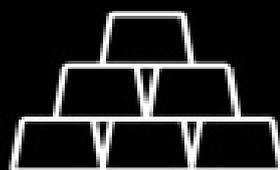


The Aspirational Investor



**Taming the
Markets to
Achieve Your
Life's Goals**



Ashvin B. Chhabra

The Aspirational Investor

Taming the Markets to Achieve Your Life's Goals

ASHVIN B. CHHABRA



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BUSINESS

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Dedication

FOR DANIELA

I HAVE LIVED A CHARMED LIFE SINCE THE DAY I MET YOU

Contents

Dedication
Acknowledgments

Introduction

PEOPLE

CHAPTER 1: The Investor's Worst Enemy
CHAPTER 2: The Psychology of Risk and Reward

MARKETS

CHAPTER 3: The Volatility of Markets over a Human Lifetime
CHAPTER 4: Speculative Bubbles and Market Manias

WEALTH

CHAPTER 5: How Do People Become (Very) Wealthy?
CHAPTER 6: How Much (Money) Do I Need?

A NEW FRAMEWORK

CHAPTER 7: The Wealth Allocation Framework
CHAPTER 8: Digging Deeper

OBJECTIVE-DRIVEN INVESTING

CHAPTER 9: Seven Steps to Implementation
CHAPTER 10: Owning the World

ASPIRE!

CHAPTER 11: Do Not Try This at Home
CHAPTER 12: The Aspirational Society

Notes

Index

About the Author

Credits

Copyright

About the Publisher

Acknowledgments

Inasmuch as this book is not just about the subject of investing, but an attempt to elucidate an entire new framework for how people should connect their goals and aspirations with their investments, *The Aspirational Investor* has been a work in progress for more than a decade.

I would like to start by thanking my two longtime collaborators, Ravindra Koneru and Lior Zaharoff. My thinking has benefited in innumerable ways from our conversations and collaborations.

This book is an evolution of my earlier paper “Beyond Markowitz.” Strong support and encouragement for the work came early on from many, including Harry Markowitz himself; Bruce Greenwald, professor at Columbia University and “guru to Wall Street gurus”; Charlotte Beyer, founder of the Institute for Private Investors; Jean Brunel, fellow practitioner and editor of the *Journal of Wealth Management*.

I have learned from so many people at Merrill Lynch, as the firm, clients, and financial advisors adopted various aspects of this new approach. I must thank Andy Sieg, who brought me back to Merrill to complete an unfinished journey, as well as John Hogarty and John Thiel. The backing of the big three, together with David Darnell’s enthusiastic support, made it evident that we were going to change the world of wealth management.

My six-year stint at the Institute for Advanced Study brought me back in touch with my scientific roots and matured me as an investor. The greatest influence was the chair of my investment committee, Jim Simons. Six years of closely working with a gentle and ever generous genius has gone to take you to a whole other level! A number of distinguished committee members were generous with their wisdom and helped shape my investment philosophy, notably Marty Leibowitz and Nancy Peretsman. Others, including Victoria Bjorklund, Neil Chriss, Robbert Dijkgraaf, Roger Ferguson, Robert Fernholz, Peter Goddard, David Marquardt, Eric Maskin, David Rubenstein, Eric Schmidt, Charles Simonyi, Peter Sventnilson, Shelby White, and Brian Wruble, kept me on my toes.

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Freeman Dyson at the institute introduced me to the Brockmans. Thank you, Max Brockman: you have been the perfect agent!

My editor and publisher, Hollis Heimboach at Harper, took a chance on a different kind of popular finance book and pushed me to find “my voice.” Thank you for your patience as years went by and for

turning on the right amount of pressure to get the job done!

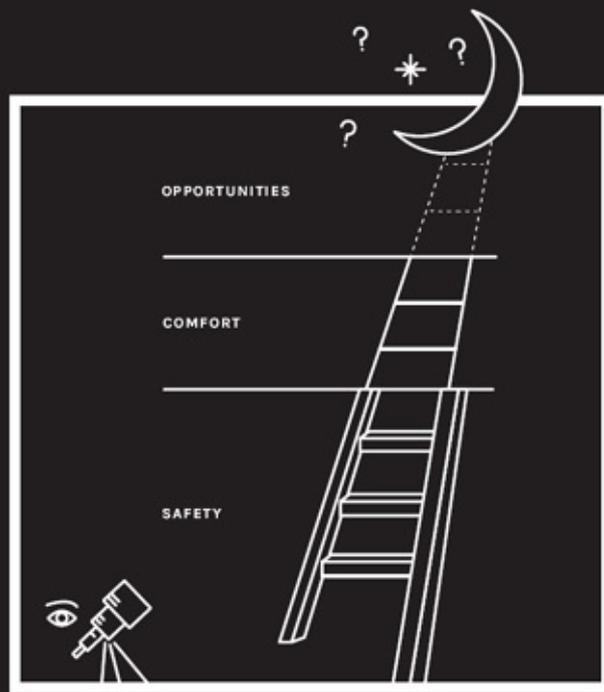
~~Perhaps not surprisingly, much more was required to get to a finished book—~~Len Costa was my editor through the many drafts over several years! Ever patient and professional, through the combination of his sharp pen and deep understanding of the subject matter, he has brought not only clarity but a reader's perspective.

As I searched for an illustrator who would bring these ideas to life, I was lucky to find, quite by accident, the talented Italian firm Accurat. Thank you, Gabriele Rossi, Giorgia Lupi, Marco Bernardini, and Marwa Boukarim for your enthusiasm, creativity, and collaboration.

I grew up in a family of journalists and publishers, so perhaps it was inevitable that I would write a book. My mother has writer's blood in her veins. My sister Sagari set the standard early on for the next generation. Thank you, Mom and Dad, for creating a wonderful home where one grew up *aspirin* to change the world.

My wife, Daniela, unrelenting in her pursuit of clarity of thought and writing when I was willing to throw in the towel, worked with me on every aspect of this book. My daughter, Maya, who at an early age is already an editor's editor, helped by editing several chapters, while my son, Sasha, was even willing to oppose all of my ideas, thus providing an effective counterpoint.

Lastly to you, the reader, thank you for reading this book. I hope it will have a lasting and positive impact well beyond your financial life!



Introduction

Money will not buy you happiness, but wealth does provide safety and comfort and, more importantly, it creates choices and opportunities. Whether your goal is to grow your wealth or simply to preserve it, how wisely you invest your assets will play a significant role in the quality of the life that you and your loved ones will lead.

Unfortunately, most investors, even those who are otherwise smart and successful, lack a basic understanding of financial markets. This causes them to make poor investment decisions. The problem is compounded by the fact that a great majority of us either do not realize our incompetence in financial matters or are simply unwilling to admit that it has a negative impact on our relationships and personal life.

Many investors do recognize their limitations and hand their money over to a professional advisor. Yet the process of delegating to a professional is fraught with peril. Most individuals have little understanding of what can (and cannot) be achieved through investing. After suffering through a major market disaster, such as the Great Crash of 2008, irate investors will fire their advisors and find someone else.

In the next market downturn, the cycle repeats.

The investment world has hardly helped matters. Despite more than sixty years of debate and research, academics and the financial services industry alike remain divided into two broad camps: the so-called *efficient market camp*, which holds that most investment managers simply cannot outperform the market, especially after taxes and fees are paid, and offers index investing as a prescription; and the *active management camp*, which seduces investors by pointing to track records of extraordinarily successful investors like Warren Buffett.

The average investor's results turn out to be quite dismal. Their portfolios under-perform not only the standard market benchmarks but also the individual funds they are invested in. We will explore this sad finding in detail.

The exciting and comparatively new field of behavioral finance highlights the role of psychology and emotion in investing. So far, however, research in that field has uncovered a lengthy list of psychological biases that lead many of us down a faulty path, but it offers little insight as to why the "mistakes" are so persistent and hard to correct.

Meanwhile, the 24/7 news cycle and the plethora of financial news websites mean that even casual viewers are constantly updated on every world event, big or small, and its supposed impact on financial markets. This abundance of information and analysis serves to alternately entertain and confuse, amplifying the noise and adding yet another barrier to sound financial decision making.

No wonder investors seem to lack the tools to succeed.

Your financial advisor may well be compounding the problem. If you work with a professional on a regular basis, chances are your meetings are animated by a variety of full-color graphics: pie charts detailing the allocation of your liquid assets and different ways to measure performance. The centrality

focus is likely to be your returns over the past few quarters or the most recent calendar year. Time and again, the conversation with your financial advisor probably focuses on the investments that did well and the fund managers that under-performed and may need to be fired, and other changes to make based on predictions about what the investment climate might look like over the next few years.

So what's wrong with this picture?

The problem is that this focus on liquid investable assets that, by the way, may account for only a portion of your total net worth and (short-term) investment performance, anchors the traditional advisory relationship to the wrong set of questions. The emphasis becomes "How can I increase my returns or consistently beat the market?" instead of "How can I achieve my major life goals with some degree of certainty?"

In this book, I will argue that the grand debates in finance, particularly the clash between indexing and active management, are focused on a series of false choices. If the markets don't really care about you, as they surely do not, why should you spend all your time and effort trying to beat them? You certainly do not want the great successes of your life to be dependent on the future performance of financial markets.

And what about those so-called behavioral "mistakes"? Perhaps they are not errors at all. As we shall see, concentration and leverage—two of the biggest mistakes in finance theory—turn out to be the building blocks of substantial personal wealth for many entrepreneurial people. When smart and successful individuals constantly violate what seem to be straightforward guidelines of sound investing, such as diversification, there is clearly something more to the picture.

This book offers an entirely new approach to managing wealth—one based not on the markets but on achieving personal goals and carefully managing risks. The approach, which I call the *Wealth Allocation Framework*, begins with the idea that a truly comprehensive wealth management strategy must accommodate the dual need for financial safety and wealth creation, while also enabling you to maintain your standard of living through measured exposure to financial markets. The primary focus is around defining your personal objectives and then optimizing your financial assets and your human capital, or earning potential, around those objectives.

Conventional portfolio theory, ironically called *modern portfolio theory*, is a theory about optimizing risk and return from financial markets through optimal portfolio construction. What is needed is a theory that shifts the focus from portfolios and markets to individuals and objectives. I call this more useful and contemporary approach *objective portfolio theory*.

Intuitively, this *objective-driven approach* makes sense. We no longer live in a world of bountiful social safety nets, so exposing your entire net worth to the risk from financial markets in a quest for outsized returns is hardly a sensible strategy for achieving what is important in your life. Pensions and defined-benefit plans seem headed for extinction, and the future of Social Security benefits in their current form is in doubt. Secure company pensions have given way to the 401(k), which shifts the risk of running out of money from companies and the public sector to individuals. The traditional company job for life no longer exists. People are starting work much later, and living longer, at a time when health care costs continue to skyrocket. The reality is that, for most people, personal financial assets are no longer a supplement to a pension but represent everything they will have to live on.

Today all of us bear the burden of investing wisely. The demands on your portfolio will surely increase over time, yet you must be able to sustain your living standard and meet your financial obligations *throughout your lifetime and likely long retirement, regardless of prevailing market conditions*. Too much volatility at the wrong time can sink your strategy, unless you've properly insulated yourself against the whims of the financial markets.

Still, managing investments isn't just about financial safety. Attaining substantial wealth or creating a lasting impact often requires aspiring to lofty goals while managing and mitigating multiple risks. Whether it's launching a new business, holding on to a large, single-stock position, or investing in a promising project, there should be a place in your portfolio to pursue your aspirational ventures without jeopardizing your financial security. For many people, especially those with entrepreneurial leanings, a life of ignoring aspirations can be unfulfilling or, shall we say, filled with "aspirational regret."

The Wealth Allocation Framework is designed to accommodate the three seemingly incompatible objectives that should underpin every wealth management plan. The first is the need for financial security in the face of known and unknowable risks. The second is the need to maintain your living standard in the face of inflation and longevity. Third, but not last, is the need to pursue aspirational goals, be it for personal wealth creation, to create positive impact, or to leave a legacy.

I make the case for the new framework in the first four sections of this book. In "[People](#)," I examine the role of individuals, who, as noted earlier, are often their own worst enemies when it comes to investing wisely. Why do people throw good money after bad, regardless of whether markets are going up or down? Next, in "[Markets](#)," I tackle the volatile history of financial markets, which, contrary to popular belief, are often unstable even over long time periods, especially the most important one: a human lifetime. That helps explain why markets alone are not the answer to your investment strategy. In the section titled "Wealth," I'll review some surprising facts about how some people become very wealthy (hint: by breaking the "rules" of investing). Then I turn to the age-old question "How much money do I need?" and offer some practical strategies to help you identify, prioritize, and quantify your financial goals.

I then outline the Wealth Allocation Framework and explain how it connects your priorities with your current and future net worth, enabling you to build an investment strategy that helps you achieve your goals and aspirations. In the final section of the book, I reinterpret the strategies of two master value investor Warren Buffett and David Swensen, chief investment officer of the Yale University endowment, who pioneered the Endowment model. Examining their investment strategies through the lens of the Wealth Allocation Framework provides key insights into the strengths and weaknesses of each approach and the lessons for individual investors.

I conclude by examining the role of aspirational goals and aspirational investments in our lives and portfolios. While neglected by modern portfolio theory, our aspirations often embody what we live for, what drives and inspires us.

The book in your hands is a practical guide to a new approach to investing. If I've done my job properly, it will set you on a path to a more confident and fulfilling financial life.

PEOPLE



The Investor's Worst Enemy

What if I told you that you were unnecessarily giving up as much as two thirds of your investment returns? Your first impulse might be to blame inflation or the tax authorities. But inflation in the United States has averaged only about 3 percent annually over the last thirty years, and most market investments do keep pace with inflation. The highest long-term capital gains rate for investments held longer than a year is 20 percent. Any tax that claimed as much as two thirds of investors' returns would surely shut down the capital markets. So where does the blame lie?

What if I told you that you are both the victim and the culprit?

Every year, Dalbar, a respected research firm, analyzes in detail the returns individuals earn from their mutual fund investments. They then compare these returns to both market index returns and the returns from the funds the investors were actually invested in. No matter how you look at it, the results are not encouraging.

In the thirty-year period from 1984 to 2013, the broad-based Standard & Poor's 500 index delivered a very healthy annualized return of 11.1 percent. Over the same period, equity fund investors earned a paltry 3.7 percent per year, about one third of the index return. Bond fund investors fare even worse: with the Barclays Aggregate Bond Index returning an annualized 7.7 percent, individual investors captured just 0.7 percent (not a misprint!) in annualized returns. Inflation annualized at 2 percent during that period, which means that the average investor's return on a balanced portfolio consisting of 60 percent equities and 40 percent bonds, did not even keep up with inflation. The staggering under-performance is the cost that individual investors paid for following their instincts of adding or pulling money out of their funds (often at the wrong time) or for staying out of the market while it enjoyed an upswing. Retail investors, they found, under-performed both market indices and the very funds they were invested in.

Statistics like these can lead to plenty of hand wringing—and denial. Many investors look at their own returns with an air of resignation. "It's not me. It's the markets." Most investors, however, hold the mistaken opinion that their own returns were slightly above average or much better than they actually were.

Consider, by way of analogy, this simple question: What kind of driver are you? It turns out that in almost any group, a large number of people identify themselves as above average. In Sweden, where an early systematic study of this simple question was conducted, between 70 percent and 80 percent identified themselves as above-average drivers. In the United States, a country whose citizens are known for their optimism (at least about their own abilities), approximately 88 percent identified themselves as "above average." In a good sample, though, only 50 percent of drivers would be correctly identified as above average. Clearly, when it comes to the very definition of "average," our self-perception is not particularly accurate.

This *illusion of superiority* is widespread and holds across a wide variety of human endeavors including investing. It was studied intensively by two Cornell University researchers, Justin Krug and David Dunning, who found that this illusion comes with an interesting twist. Somewhat ironically, the most incompetent people in the group often rate themselves the *highest*. That crazy driver speeding and weaving across lanes, thinks his driving abilities are superior to yours! This is a everyday example of the Dunning-Kruger effect.

Alas, investors are no better at trading stocks. In the '80s advances in technology created user-friendly, scalable trading platforms. This allowed discount brokerage firms to offer self-directed online trading capabilities to retail investors. Not surprisingly, investors confident in their own trading abilities were early adopters. While financial firms loathe parting with investor data, two particularly persuasive University of California professors, Brad Barber and Terry Odean, were able to get their hands on the trading records of ten thousand anonymous, self-directed investors from a prominent brokerage house. Their work focused on trades conducted over a seven-year period (1987 to 1993) in which an individual sold one security and bought another on the same day. Then they analyzed whether or not, one year later, the stocks that investors bought had outperformed the ones they had sold.

Why is this method of analyzing the trades so clever? Because when you trade one security for another, the wisdom of the transaction does not depend on whether the market as a whole subsequently goes up or down; all that matters is whether, a year later, the stock you bought went up *more* than the stock you sold. The resulting profit or loss number is a clear and simple way of quantifying the profitability, and wisdom, of these trading decisions, irrespective of how the market as a whole performed.

The title of the paper, “The Courage of Misguided Convictions,” is a dead giveaway for the dismal results: in most cases, over the following year, the stocks that investors bought under-performed the ones that they sold—by a lot. The average return was roughly a *9 percent loss per trade*. Not surprisingly, Odean and Barber’s follow-up paper was called “Trading Is Hazardous to Your Wealth.”

The unfortunate truth is this: whether it comes to mutual fund investing or buying and selling individual stocks, individual investors have a propensity to make frequent, ill-timed, and costly trading decisions.

In other words, all too often, investors are their own worst enemies.

Still, active management is a zero-sum game, and there exists another set of market players that seems to make money fairly consistently: leading institutional investors and a highly skilled subset of other professional investors, including Wall Street trading desks and upper quartile mutual and hedge fund managers. How much of their success is passed on to you, the individual investor, if you are lucky enough to invest with them?

The answer is: not that much. Yale professor Roger Ibbotson and his collaborators Peng Chen and Kevin Zhu have documented this unfortunate finding. They analyzed mutual fund and hedge fund performance from 1995 to 2009, compared it to the returns from investing passively in an index, and found that the excess returns over a benchmark generated by the typical mutual fund manager were roughly equivalent to the fees they charged. In other words, even when individual investors aren’t themselves trading indiscriminately, mutual funds *on average* provided investors *with no incremental return* after accounting for fees. Hedge funds, during that time period, delivered respectable outperformance of about 6.8 percent a year on average. However, this result came at a hefty price: more than half of the excess return was lost to fees, leaving an actual excess annual return of about 3.4 percent. Fast-forward to 2013, and we find that the out-performance of hedge funds over mutual funds

has reversed post-2008. Most hedge funds lost more money in the 2008 crisis than expected, and since then, those that have maintained some degree of hedging or reduced market exposure have found it difficult to match the returns of buoyant post-crash markets.

The upshot? Even when you pick professional money managers, there's a strong chance that you would end up relinquishing a large part of your investment profits to fees, while, of course, solely bearing the risk of any losses. That's not exactly an attractive value proposition, as succinctly expressed by Charles Ellis in his influential and insightful 1975 article "The Loser's Game."

Such disappointing results provide numerical context for the life's work of eminent Princeton economist Burton Malkiel. After many decades of careful research, Malkiel concluded that the vast majority of money managers simply couldn't beat the markets over the long run. His evidence and conclusions are published in a book that first appeared in 1973, called *A Random Walk Down Wall Street*, which has sold more than a million copies and is widely recognized as an investment classic.

Malkiel's view combines the teachings of *modern portfolio theory*, a foundational model of finance, which holds that there is an optimal mix of asset classes for a desired level of risk, and the *efficient markets hypothesis*, which holds that securities' prices reflect all (or most) known information, thus making it impossible to consistently beat the market.

His simple proposal: figure out your tolerance to risk and identify an optimal asset allocation. Then, instead of looking for top money managers or trying to play the market yourself, simply buy index funds that broadly represent each asset class in your portfolio. For example, if your risk appetite leads you to a portfolio consisting of 60 percent stocks, 30 percent bonds, and 10 percent cash, you could allocate 60 percent of your portfolio to a low-cost equity index (e.g., the S&P 500 index or, better yet, a world equity index), 30 percent to a bond index (e.g., the Barclays Capital Aggregate Bond index), and put 10 percent cash in the bank.

Two years after Malkiel's book first appeared, investing gadfly Jack Bogle launched a new kind of money management firm based on the same premise. Bogle credits another prominent academic, Nobel laureate Paul Samuelson, for playing a major role in "precipitating the creation of the world's first index fund." Bogle gave investors a way to buy and hold the entire market, or pieces of it, through inexpensive predetermined indices. Today, the firm he founded, The Vanguard Group, is one of the leading purveyors of passive index investment products and ranks among the largest money management firms in the world, with more than a trillion dollars in assets. Vanguard's analysis seems to show that, with low fees and a simple approach, their index funds consistently beat most active money managers over the long haul. These numbers, they claim, are even more impressive when adjusted for the impact of taxes.

Malkiel and Bogle's approach, though compelling and easy to implement, provides an incomplete picture of the investing landscape. The fact is, some successful investors deliver consistently stellar returns by *concentrating*, not diversifying (much less indexing), their portfolios. One of the most famous, of course, is Warren Buffett. The chairman, CEO, and top shareholder of Berkshire Hathaway has delivered returns averaging close to 20 percent annually since 1968, beating the return on an equity index by a wide margin. A dollar invested in the S&P 500 in 1968 would be worth \$59 today, while a dollar invested in Berkshire stock over the same time period would be worth a cool \$6,540. For several decades, through Berkshire's annual shareholder letters, Buffett has shared his profound insights on the discipline of buying great businesses at the right price (read substantial discount), and an investing strategy known as value investing. When Buffett likes a company, he buys as much of it as he can—in fact, he often snaps up the entire company—and then holds on to it. In many cases, he has no intention of selling.

George Soros, the hedge fund speculator extraordinaire, would certainly agree with Buffett's view on the limitations of diversification. Soros is famous—and in some circles infamous—for his massive bets across multiple asset classes based on macroeconomic trends, such as his fund's 1992 wager against the British pound. Being right on that single trade netted Soros and his investors a billion dollars.

While these two legendary investors may have very different ways of looking at and investing in the financial markets, they share a common belief in conducting careful research and taking big concentrated bets that express their convictions. Their approaches, at least at first glance, run counter to the principles of asset allocation and diversification. As we shall see in the later chapters, so do the investment approaches of almost all families that have built great fortunes.

The upshot is that money managers, on average, fail to outperform the market, but some money managers do outperform, even over long periods. It is for this reason the world of investing remains divided into two warring factions: the *efficient market camp*, which holds fast to the data showing that the most active managers add little to no value, especially after you account for fees and taxes; and the *active management camp*, which points to the likes of Buffett and Soros as proof that consistent outperformance is certainly possible and cannot be attributed to luck alone.

For proponents of efficient markets, the evidence overwhelmingly points to the high cost and futility of average retail investors trying to beat the market. The best investment strategy, the reasoning goes, is to diversify widely and implement an investment plan using low-cost index funds. This message is perhaps hard to swallow: "The best you can be is average—like everyone else." Yet, as we have seen, the empirical evidence is compelling.

Conversely, active management adherents fervently believe that skilled managers can beat the market over sustained periods of time, and sometimes by wide margins. They feel it is dismissive, even insulting, to attribute Buffett's great wealth and impressive track record to luck. They also point to the fact that the market is a zero-sum game, so investors with skill and discipline will systematically earn money at the expense of those who are not so talented. Indeed, the dismal performance of most individual investors supports this point.

One of the most entertaining ways in which this debate has played out unfolded on the pages of the *Wall Street Journal*, which, inspired by Malkiel's work, ran a competition pitting active managers against dart throwers.

At least twice a year, from 1988 to 2002, the *Journal* recruited four leading stock pickers to suffer the potential humiliation. The result? The long track record showed professional stock pickers beating the dart throwers 61 percent of the time. But, inexplicably, the contest design had a deep flaw: it did not take into account dividends being paid out by various stocks. This led the professionals to game the system by choosing stocks that did not pay dividends, while the dart throwers were, by design, blissfully unaware of this flaw. A correction—by reinvesting dividends paid out—would have shrunk the money managers' lead. And although the professionals beat the dart throwers 61 percent of the time and garnered a higher return, they beat the index itself only 53 percent of the time: their victory had a margin so narrow that, from the statistical point of view, it fell within the range of pure chance.

The efficient markets camp pointed out yet another problem with the contest: much like in the real market, the game itself was influencing the result. Interested *Journal* readers were buying the stocks picked by the professionals after reading about them in the *Journal*. This demand caused the stocks picked to rise in price, thus providing the professionals with excess return completely unrelated to their actual stock-picking prowess. The excess return did not last, however. An analysis of the subsequent long-term performance of those stocks showed that, immediately after publication, the professional

stock picks had a short bump in price that then diminished over time, and the stocks collectively ended up under-performing the index. Thus, retail investors imitating the stock selections of the professionals once again ended up worse off than either group.

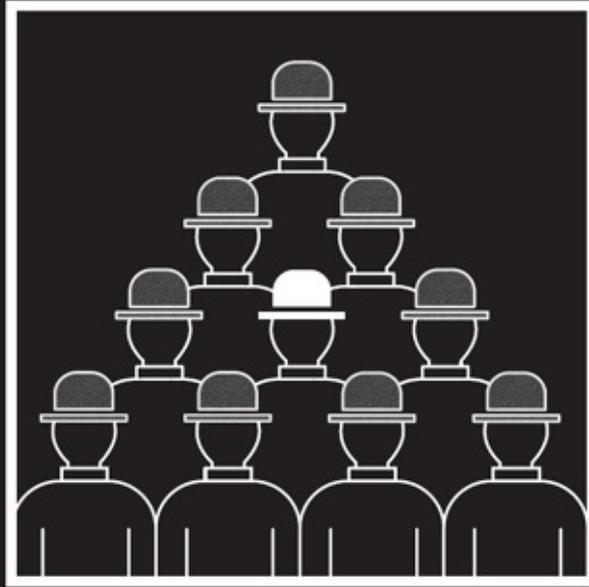
A better design, apart from incorporating the effect of dividends, would have been to hold the entire contest in secret and announce the final results at the end of the agreed time period. But that design would have lacked the excitement of a real-time contest and probably sold far fewer copies of the newspaper. Ultimately, after fourteen long years, the *Journal* abandoned the contest without declaring a winner, satisfying neither side.

What's fascinating here is not which camp won or lost but rather the mere fact that pitting dart throwers against professional stock pickers was even a meaningful competition. Would a similar contest questioning the utility of other professionals, such as doctors or engineers, endure for fourteen years and finish so inconclusively?

In the end, great entertainment is too hard to pass up. Catering to the illusions and aspirations of individual investors, the *Journal* continued the portion of the contest that pitted dart throwers against *Journal* readers. More than a decade later, in April 2013, the *Journal* ended that contest with the darts decisively beating the *Journal* readers 30 to 19 over forty-nine contests. The *Journal's* final words: "We are winding down the print-only version of the Dartboard contest and have introduced a more dynamic online version of the contest with our colleagues at MarketWatch." The games must go on!

The downside of great entertainment is that it can distract us from what really matters. Amid the perennial debate between the *efficient markets* camp and *active management* proponents—an important one, no doubt—a fundamental idea has gotten lost: investing should not be about "beating the market" but rather about achieving your goals with a reasonable degree of certainty. The Wealth Allocation Framework can help you refocus your investing activities on more practical and productive outcomes.

To understand the power of the approach, we must first explore why it is the case that so many investors, despite their best intentions, end up going so far astray when they hitch their fortunes to the financial markets.



The Psychology of Risk and Reward

Most of us have a healthy understanding of risk in the short term. When crossing the street, for example, you would no doubt speed up to avoid an oncoming car that suddenly rounds the corner. Humans are wired to survive: it's a basic instinct that takes command almost instantly, enabling our brains to resolve ambiguity quickly so that we can take decisive action in the face of a threat.

The impulse to resolve ambiguity manifests itself in many ways and in many contexts, even those less fraught with danger. Glance at the adjacent picture (Figure 2.1) for no more than a couple of seconds. What do you see?



Figure 2.1: Anonymous German postcard (1888)

Some observers perceive the profile of a young woman with flowing hair, an elegant dress, and a bonnet. Others see the image of a woman stooped in old age with a wart on her large nose. Still others—in the gifted minority—are able to see both of the images simultaneously.

What is interesting about this illusion is that our brains instantly decide what image we are looking at, based on our first glance. If your initial glance was toward the vertical profile on the left-hand side, you were all but destined to see the image of the elegant young woman: it was just a matter of your brain interpreting every line in the picture according to the mental image that you already formed, even though each line can be interpreted in two different ways. Conversely, if your first glance fell on the central dark horizontal line that emphasizes the mouth and chin, your brain quickly

formed an image of the older woman.

Regardless of your interpretation, your brain wasn't confused. It simply decided what the picture was and filled in the missing pieces. Your brain resolved ambiguity and extracted order from conflicting information.

What does this have to do with investing? Much like the lines in the image, every event and piece of information relevant to the financial markets can be interpreted differently according to your perspective. Does new data inform us about near-term risk or herald long-term return potential? For some, a 10 percent drop in the stock market is a strong signal to head for the exit. For others, it's a chance to snap up bargains.

Every trade has a seller and a buyer: your state of mind is paramount. If you are in a risk-averse mental framework, then you are likely to interpret a further fall in stocks as additional confirmation of your sell bias. If instead your framework is positive, you will interpret the same event as a buying opportunity.

The challenge of investing is compounded by the fact that our brains, which excel at resolving ambiguity in the face of a threat, are less well equipped to navigate the long term intelligently. Since none of us can predict the future, successful investing requires planning and discipline.

Unfortunately, when reason is in apparent conflict with our instincts—about markets or a “hot stock,” for example—it is our instincts that typically prevail. Our “reptilian brain” wins out over our “rational brain,” as it so often does in other facets of our lives. And as we have seen, investors trade too frequently, and often at the wrong time.

One way our brains resolve conflicting information is to seek out safety in numbers. In the animal kingdom, this is called “moving with the herd,” and it serves a very important purpose: helping to ensure survival. Just as a buffalo will try to stay with the herd in order to minimize its individual vulnerability to predators, we tend to feel safer and more confident investing alongside equally bullish investors in a rising market, and we tend to sell when everyone around us is doing the same. Even the so-called smart money falls prey to a herd mentality: one study, aptly titled “Thy Neighbor's Portfolio,” found that professional mutual fund managers were more likely to buy or sell a particular stock if other managers in the same city were also buying or selling.

This comfort is costly. The surge in buying activity and the resulting bullish sentiment is self-reinforcing, propelling markets to react even faster. That leads to overvaluation and the inevitable crash when sentiment reverses. As we shall see, such booms and busts are characteristic of all financial markets, regardless of size, location, or even the era in which they exist.

Even though the role of instinct and human emotions in driving speculative bubbles has been well documented in popular books, newspapers, and magazines for hundreds of years, these factors were virtually ignored in conventional financial and economic models until the 1970s.

This is especially surprising given that, in 1951, a young PhD student from the University of Chicago, Harry Markowitz, published two very important papers. The first, entitled “Portfolio Selection,” published in the *Journal of Finance*, led to the creation of what we call *modern portfolio theory*, together with the widespread adoption of its important ideas such as asset allocation and diversification. It earned Harry Markowitz a Nobel Prize in Economics. The second paper, entitled “The Utility of Wealth” and published in the prestigious *Journal of Political Economy*, was about the propensity of people to hold insurance (safety) and to buy lottery tickets at the same time. It delved deeper into the psychological aspects of investing but was largely forgotten for decades.

The field of behavioral finance really came into its own through the pioneering work of two academic psychologists, Amos Tversky and Daniel Kahneman, who challenged conventional wisdom

about how people make decisions involving risk. Their work garnered Kahneman the Nobel Prize in Economics in 2002. Behavioral finance and neuroeconomics are relatively new fields of study that seek to identify and understand human behavior and decision making with regard to choices involving trade-offs between risk and reward. Of particular interest are the human biases that prevent individuals from making fully rational financial decisions in the face of uncertainty.

As behavioral economists have documented, our propensity for herd behavior is just the tip of the iceberg. Kahneman and Tversky, for example, showed that people who were asked to choose between a certain loss and a gamble, in which they could either lose more money or break even, would tend to choose the double down (that is, gamble to avoid the prospect of losses), a behavior the authors called “loss aversion.” Building on this work, Hersh Shefrin and Meir Statman, professors at the University of Santa Clara Leavey School of Business, have linked the propensity for *loss aversion* to investors’ tendency to hold losing investments too long and to sell winners too soon. They called this bias the *disposition effect*.

The lengthy list of behaviorally driven market effects often converge in an investor’s tale of woe. *Overconfidence* causes investors to hold concentrated portfolios and to trade excessively, behavior that can destroy wealth. The *illusion of control* causes investors to overestimate the probability of success and underestimate risk because of familiarity—for example, causing investors to hold too much employer stock in their 401(k) plans, resulting in under-diversification. *Cognitive dissonance* causes us to ignore evidence that is contrary to our opinions, leading to myopic investing behavior. And the *representativeness bias* leads investors to assess risk and return based on superficial characteristics—for example, by assuming that shares of companies that make products you like are good investments.

Several other key behavioral biases come into play in the realm of investing. *Framing* can cause investors to make a decision based on how the question is worded and the choices presented. *Anchoring* often leads investors to unconsciously create a reference point, say for securities prices, and then adjust decisions or expectations with respect to that anchor. This bias might impede your ability to sell a losing stock, for example, in the false hope that you can earn your money back. Similarly, the *endowment bias* might lead you to overvalue a stock that you own and thus hold on to the position too long. And *regret aversion* may lead you to avoid taking a tough action for fear that it will turn out badly. This can lead to decision paralysis in the wake of a market crash, even though, statistically, it is a good buying opportunity.

Behavioral finance has generated plenty of debate. Some observers have hailed the field as revolutionary; others bemoan the discipline’s seeming lack of a transcendent, unifying theory. The one thing is clear: behavioral finance treats biases as mistakes that, in academic parlance, prevent investors from thinking “rationally” and cause them to hold “suboptimal” portfolios.

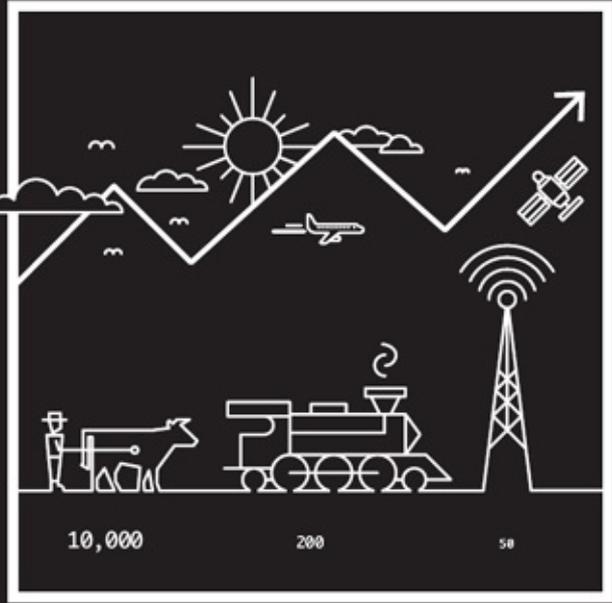
But is that really true? In investing, as in life, the answer is more complex than it appears. Effective decision making requires us to balance our “reptilian brain,” which governs instinctive thinking, with our “rational brain,” which is responsible for strategic thinking. Instinct must be integrated with experience.

Put another way, behavioral biases are nothing more than a series of complex trade-offs between risk and reward. When the stock market is taking off, for example, a failure to rebalance by selling winners is considered a mistake. The same goes for a failure to add to a position in a plummeting market. That’s because conventional finance theory assumes markets to be inherently stable, or “mean-reverting,” so most deviations from the historical rate of return are viewed as fluctuations that will revert to the mean, or self-correct, over time.

But what if a precipitous market drop is slicing into your peace of mind, affecting your sleep, your relationships, and your professional life? What if that assumption about markets reverting to the mean doesn't hold true and you cannot afford to hold on for an extended period of time? In both cases, it might just be "rational" to sell and accept your losses precisely when investment theory says you should be buying. A concentrated bet might also make sense, if you possess the skill or knowledge to exploit an opportunity that others might not see, even if it flies in the face of conventional diversification principles.

Of course, the time to create decision rules for extreme market scenarios and concentrated bets is when you are building your investment strategy, not in the middle of a market crisis or at the moment a high-risk, high-reward opportunity from a former business partner lands on your desk and gives you an adrenaline jolt. A disciplined process for managing risk in relation to a clear set of goals will enable you to use the insights offered by behavioral finance to your advantage, rather than fall prey to the common pitfalls. This is one of the central insights of the Wealth Allocation Framework. Before we can put these insights to practical use, we need to understand the true nature of financial markets.

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