Features a Postscript on the Economic Collapse

"A TRIUMPHANT RETURN!
This new edition of *Four Pillars* reaffirms the vital, but simple, message of its predecessor. Reading it is like meeting an old friend who brings new wisdom into your life."
—JOHN C. BOGLE, Founder and Former Chief of Vanguard

The Four Pillars of Investing

LESSONS FOR BUILDING A WINNING PORTFOLIO

WILLIAM J. BERNSTEIN

bestselling author of *The Investor's Manifesto*

The Four Pillars of Investing

This page intentionally left blank

The Four Pillars of Investing

Lessons for Building a Winning Portfolio

William J. Bernstein

McGraw-Hill

New York Chicago San Francisco Lisbon
London Madrid Mexico City Milan New Delhi
San Juan Seoul Singapore Sydney Toronto

ISBN: 978-0-07-175917-5

MHID: 0-07-175917-4

The material in this eBook also appears in the print version of this title: ISBN: 978-0-07-174705-9,

MHID: 0-07-174705-2.

Contents

Preface

In the mid-1990s, I began writing a small book, *The Intelligent Asset Allocator,* which ultimately became a "successful failure": successful because it attracted positive notice and sold enough copies to please my publisher and myself, and a failure because it did not accomplish its ultimate goal. My aim had been to explain modern portfolio theory, a powerful way of understanding investing, to the general public. What I instead produced was a work comprehensible only to those with a considerable level of mathematical training and skill.

After initially failing to interest any publishers, the original electronic version of the book was placed on my Web site, www.efficientfrontier.com, at the end of 1996. Following a slow start, it gradually elicited much positive comment. The only problem was that almost all of its readers were scientists, engineers, or finance professionals.

Closer to home, my family and friends uniformly gave up on it with alarming dispatch: "Bill, you've got to be kidding. I fell asleep after five pages; this stuff is way over my head." The dividing line seemed to be slightly north of Statistics 101; if you never took it, or did but hated it, the book might as well have been written in Tamil. Eventually, in a show of unalloyed courage, McGraw-Hill did print it as a trade publication—aimed at professionals, not the general public.

The book was a methodical mathematical exercise. First, the behavior of multiple asset classes was statistically analyzed. Next, the theoretical basics of portfolio theory were examined. Ultimately, these two foundations, as well as a practical tour of the investment industry, were synthesized into a coherent investment strategy. The small minority of investors who thrive on such fare felt well rewarded. But, as with the electronic versions, most considered it more sedative than informative. Fortunately, *The Intelligent Asset Allocator's* limited success allowed me a second chance to write a book about investing for the general audience.

My watchwords in producing *The Four Pillars of Investing* were accessibility and enjoyment; I've used engaging historical vignettes wherever possible to illustrate key financial concepts and kept mathematical detail to a minimum. A well-known rule among scientists is that each successive mathematical formula cuts a book's popular readership in half; I've done my best to keep the math simple and the graphs as spare as possible. Now, almost a decade later, this title is in its seventeenth printing; so I suppose I've succeeded.

Special thanks go to those who have provided encouragement and help along the way, including Cliff Asness, John C. Bogle Sr., Scott Burns, Edward Chancellor, Mark Gochnour, Christian Oelke, John Rekenthaler, Bill Schultheis, Larry Swedroe, Robert Sidelsky, Richard Thaler, Mike Veseth, and Jason Zweig. I'll never understand what motivated Catherine Dassopoulos and Jeffrey Krames of McGraw-Hill to take an interest in an obscure electronic file by an unknown scribbler floating around in cyberspace, but their editorial and publishing support has been a constant source of delight and satisfaction. Thanks are also given to Stephen Isaacs, who shepherded this work through each step of the production process. There must be no harder job in publishing than getting an author to "kill his darlings" in the cause of producing a tighter and more muscular manuscript; Stephen accomplished this with aplomb and grace.

Author and academic Larry Cunningham and my friends Stephen Dunn and Charles Holloway spent many hours of their precious time hammering out the flaws in both finance and wordsmithing. Jonathan Clements brought not only his time but also his years of journalistic experience at Cambridge, *Forbes*, and *The Wall Street Journal* to bear in improving the book's detail and structure.

Particular thanks go to my business partner, Susan Sharin, whose unique combination of financial savvy, editorial skills, and command of the investment business landscape proved as essential in this effort as it was in my last book. Finally, to my wife, Jane Gigler, go the fondest thanks of all. Her cheerful and unending transmutation of large heaps of muddled verbiage into readable prose and amused tolerance of an obsessed author and husband are a constant source of pleasure and awe.

William Bernstein
Portland, Oregon

Introduction

I didn't start out my professional life in finance; my original training was in the sciences, and, later, in medicine. Practicing physicians, among whom I still count myself, have a richly deserved reputation as miserable investors. The conventional explanations for this are that our practices are so demanding that we don't have the time to do it properly, or that we're too egotistical to take professional advice.

In fact, neither is the case. Learning how to invest properly doesn't take an inordinate effort, and I don't find most of my colleagues overly egotistical. Medical practice is a profoundly humbling experience to anyone with a breath of intellectual honesty; the best doctors soon come to the conclusion that the more they see, the less they know. The same, not surprisingly, is true in finance.

The real reason that physicians are rotten investors is that it never occurs to them that finance is a science, just like medicine. Day-to-day medical practice is profoundly scientific, informed by a vast amount of underlying research; nowadays almost no drug or surgical treatment is adopted without rigorous trials comparing it to other accepted treatments or placebo. In short, most physicians would not commence a treatment for so much as a cold without a good deal of experimental and statistical evidence in back of it.

The most important work is reported in prestigious peer-reviewed periodicals such as *The New England Journal of Medicine* and *Lancet.* The key term here is "peer reviewed." Nothing appears in these high-level periodicals without being vetted first by the top experts in the field—requests for multiple extensive revisions are routine. Your own physician hopefully reads these top-echelon publications on a regular basis for data relevant to his practice.

Unfortunately, when doctors put on their investing hats, they completely forget their scientific training. There is, in fact, a rich and informative scientific literature about what works and what doesn't in finance; it is routinely ignored. Instead of depending on the *Journal of Finance* (the investing equivalent of *The New England Journal of Medicine*), they get their advice from *USA Today* or worse, from their stockbroker.

Of course, I'm only picking on my colleagues for fun—in this regard doctors are no different from lawyers, retail clerks, or anyone else. What's truly scandalous is that even most finance professionals are unaware of the scientific basis of investing, which consists of four broad areas, the Four Pillars of this book.

Pillar One: Theory

The most fundamental characteristic of any investment is that its return and risk go hand in hand. As all too many have learned in the past few years, a market that doubles rapidly is just as likely to halve rapidly, and a stock that appreciates 900% is just as likely to fall 90%. Or that when a broker calls suggesting that the price of a particular stock will rocket, what he's really telling you is that he is not overly impressed with your intelligence. Otherwise, you would realize that if he actually knew that the price was going to increase, he would not tell it to you or even his own mother. Instead, he would quit his job, borrow to the hilt, purchase as much of the stock as he could, and then go to the beach.

The first, and most important, part of the book will survey the awesome body of theory and data relevant to everyday investing. Don't be daunted by this; my primary mission is to present this information in terms that you will find both understandable and entertaining. We'll learn that:

- Whether you invest in stocks, bonds, or for that matter real estate or any other kind of capital asset, you are rewarded mainly for your exposure to one thing—its risk. We'll learn just how to measure that risk and explore the interplay of risk and investment return.
- Over the long haul, it is not that hard to measure the probable return of different kinds of stocks and bonds; yet even well-respected experts usually manage to do a bad job of this.
- Almost all the differences in the performances of money managers can be ascribed to luck and not to skill; you are most certainly not rewarded for trying to pick the best-performing stocks, mutual funds, stockbrokers, or hedge funds.
- The biggest risk of all is failing to diversify properly.

- It's the behavior of your portfolio as a whole, and not the assets in it, that matters most. We'll also learn that a portfolio can behave in ways radically different than its component parts, and that this can be used to your advantage. The science of mixing different asset classes into an effective blend is called "portfolio theory" and occupies center court in the grand tournament of investing.

Pillar Two: History

It is a fact that, from time to time, the markets and investing public go barking mad. Of course, the madness is obvious only in retrospect. But a study of previous manias and crashes will give you at least a fighting chance of recognizing when asset prices have become absurdly expensive and risky and when they have become too depressed and cheap to pass up. The simplest way of separating managers who would be suckered into the dot-com mania (or, more recently, homeowners who took out interest-only liar-loan mortgages) from those who would not would be to administer a brief quiz on the 1929 crash.

Finance, unfortunately, is not a "hard" science. It is instead a social science. The difference is this: a bridge, electrical circuit, or aircraft should always respond in exactly the same way to a given set of circumstances. What separates the "hard" sciences of physics, engineering, electronics, or aeronautics from the "social" sciences is that in finance (or sociology, politics, and education) apparently similar systems will behave very differently over time.

Put a different way, a physician, physicist, or chemist who is unaware of their discipline's history does not suffer greatly from the lack thereof; the investor who is unaware of financial history is irretrievably handicapped. For this reason, an understanding of financial history provides an additional dimension of expertise. In this section, we'll study the history of finance through the widest possible lens by examining:

- Just what the centuries of recorded financial history tell us about the short-term and long-term behavior of various financial assets.
- How, from time to time, the investing public becomes almost psychotically euphoric, and at other times, toxically depressed.
- How modern investment technology has exposed investors to new risks.

Pillar Three: Psychology

Most of what we fondly call "human nature" becomes a deadly quicksand of maladaptive behavior when allowed to roam free in the investment arena. A small example: people tend to be attracted to financial choices that carry low probabilities of high payoffs. In spite of the fact that the average payoff of a lottery ticket is only 50 cents on the dollar, millions "invest" in it. While this is a relatively minor foible for most, it becomes far more menacing as an investment strategy. One of the quickest ways to the poorhouse is to make finding the next Microsoft your primary investing goal.

Only recently have academics and practitioners begun the serious study of how the individual investor's state of mind affects his or her decision making; we'll survey the fascinating area of "behavioral finance." You'll learn how to avoid the most common behavioral mistakes and to confront your own dysfunctional investment behavior. You will find out, for example, that most investors:

- Tend to become grossly overconfident.
- Systematically pay too much for certain classes of stocks.
- Trade too much, at great cost.
- Regularly make irrational buy and sell decisions.

Pillar Four: Business

Investors tend to be touchingly naïve about stockbrokers and mutual fund companies: brokers are not your friends, and the interests of the fund companies are highly divergent from yours. You are in fact locked in a financial life-and-death struggle with the investment industry; losing that battle puts you at increased risk of running short of assets far sooner than you'd like. The more you know about the industry's priorities and how it operates, the more likely it is that you will be able to thwart it.

The brokerage and mutual fund businesses form a financial colossus that bestrides modern financial, and increasingly, social, and political life. (If you doubt this, just turn on your television and time the interval between advertisements for financial services.) In the book's penultimate section, then, we'll examine how the modern financial services industry is designed solely to serve itself, and how it:

- Exists almost entirely for one purpose: the extraction of fees and commissions from the investing public, and that in fact, we are all locked in a constant zero-sum battle with this behemoth.
- Operates at a level of educational, moral, and ethical imperatives that would be inconceivable in any other profession. A small example: by law, bankers, lawyers, and accountants all have a fiduciary responsibility towards their clients. Not so stockbrokers.

Only after you've mastered these four areas can you formulate an overall investment strategy. Only after you've formulated a program that focuses on asset classes and the behavior of asset-class mixtures will you have any chance for overall success. A deficiency in any of the Four Pillars will torpedo this program with brutal dispatch.

Here are a couple of examples of how a failure to master the Four Pillars can bring grief to even the most sophisticated investors:

Big time players: The principals of Long-Term Capital Management, the firm that in 1998 almost single handedly crippled the world financial system with their highly leveraged speculation, had no trouble with Pillar One—investment theory—as they were in many cases its Nobel Prize-winning inventors. Their appreciation of Pillars Three and Four—psychology and the investment business—was also top drawer. Unfortunately, despite their corporate name, none of them had a working knowledge of Pillar Two—the long-term history of the capital markets. Focusing narrowly on only several years of financial data, they forgot the fact that occasionally markets come completely off the rails, often in ways never before seen. A working knowledge of Western financial history would have warned them that their investment strategy carried with it the near certainty of self-destruction.

Small investors: On the other hand, the average investor most often comes to grief because of deficiencies in Pillars One and Three—theory and psychology. They usually fail to understand the everyday working relationship between risk and reward and routinely fail to stay the course when things get rough.

The above two examples are caricatures: the failure modes of individual investors are as varied as their personalities. In this tome, I want to provide you with these invaluable tools—the Four Pillars—to avoid the kinds of failures I've listed above. I also want to expose you to the wondrous clockwork and history of the capital markets, which are deserving of attention in their own right.

Arguably the most substantive domestic issue facing the republic is the fate of Social Security, with privatization the most frequently mentioned option. For the first time in history, a familiarity with the behavior of the financial markets has become a prerequisite for competent citizenship, apart from its obvious pecuniary value.

Using the Four Pillars

In the book's last section, we'll show how mastery of the Four Pillars can result in a coherent strategy that will enable you to accomplish investing's primary aims: achieving and maintaining financial independence and sleeping well at night. The essential mechanics of operating an efficient investment portfolio will be covered:

- Calculating how much you'll need to save and when you can retire.
- Allocating your assets among various classes of stocks and bonds.
- Choosing which mutual funds and securities to employ.
- Getting off dead center and building your portfolio.
- Maintaining and adjusting your portfolio over the long haul.

In Conclusion

Although I hope that I've conveyed my enthusiasm for financial theory, history, psychology, and strategy, I'll freely admit that I've been dealt the short straw in the subject scintillation department—this book, after all, is not a bodice-ripper or a spy thriller. There is no arguing with the fact that some areas of finance can be damnably opaque, even to cognoscenti. This book, then, should be consumed in small bites, perhaps ten or twenty pages at a time, preferably first thing in the morning.

Lastly, while I've tried to make this work as comprehensive and readable as possible, no one book can claim to be an all-encompassing source of investment instruction. At best, what is offered here is a study guide—a financial *tour d'horizon*, if you will. Personal finance, like most important aspects of life, is a never-ending quest. The competent investor never stops learning. As such, the most valuable section is the reading list of the end of Chapter 11. Remarkably, eight years after this book's original publication, it survives with only one change, which is to update the latest edition of Jack Bogle's amazing *Common Sense on Mutual Funds*. This list should guide you through the subsequent legs of the life-long journey towards financial self-sufficiency.

PILLAR ONE

The Theory of Investing

The Nature of the Beast

In 1798, a French expedition under the direct command of Napoleon invaded Egypt. His forces possessed only the most rudimentary maps and had almost no knowledge of the climate or terrain. It came as no surprise that the invasion was a disaster from start to finish when, three years later, the last French troops, dispirited, diseased, starving, and abandoned by their leader, were mopped up by Turkish and British forces.

Unfortunately, most investors muster the same degree of planning in their investing, unaware of the nature of the investment terrain. Without an understanding of the relationship between risk and reward, how to estimate returns, the interplay between other investors and themselves, and the mechanics of portfolio design, they are doomed to failure, much like Napoleon's troops. Each of these essential topics can be mastered and will be covered chapter by chapter in this book.

The first chapter, dealing with the historical returns and risks in the European and U.S. markets during the past several centuries, is the most critical. We cover a large expanse of historical territory, the premise being that the more history you know, the more prepared you will be for the future.

This page intentionally left blank

1

No Guts, No Glory

There are certain things that cannot be adequately explained to a virgin either by words or pictures. Nor can any description that I might offer here even approximate what it feels like to lose a real chunk of money that you used to own.
Fred Schwed, from *Where Are the Customers' Yachts?*

I'm often asked whether the markets behave rationally. My answer is that it all depends on your time horizon. Turn on CNBC at 9:31 A.M. any weekday morning and you're faced with a lunatic asylum described by the Three Stooges. But stand back a bit and you'll start to see trends and regular occurrences. When the market is viewed over decades, its behavior is as predictable as a Lakers-Clippers basketball game. The one thing that stands out above all else is the relationship between return and risk. Assets with higher returns invariably carry with them stomach-churning risk, while safe assets almost always have lower returns. The best way to illustrate the critical relationship between risk and return is by surveying stock and bond markets through the centuries.

The Fairy Tale

When I was a child back in the fifties, I treasured my monthly trips to the barbershop. I'd pay my quarter, jump into the huge chair, and for 15 minutes become an honorary member of adult male society. Conversation generally revolved around the emanations from the television set: a small household god dwarfed by its oversized mahogany frame. The fare reflected the innocence of the era: *I Love Lucy,* game shows, and, if we were especially lucky, afternoon baseball. But I do not ever recall hearing one conversation or program that included finance. The stock market, economy, machinations of the Fed, or even government expenditures did not infiltrate our barbershop world.

Today we live in a sea of financial information, with waves of stock information constantly bombarding us. On days when the markets are particularly active, our day-to-day routines are saturated with news stories and personal conversations concerning the whys and wherefores of security prices. Even on quiet days, it is impossible to escape the ubiquitous stock ticker scrolling across the bottom of the television screen or commercials featuring British royalty discoursing knowledgeably about equity ratios.

It has become a commonplace that stocks are the best long-term investment for the average citizen. At one time or another, most of us have seen a plot of capital wealth looking something like Figure 1-1, demonstrating that $1 invested in the U.S. stock market in 1790 would have grown to more than $23 million by the year 2000.

Unfortunately, for a number of reasons, no person, family, or organization ever obtained these returns. First, we invest now so that we may spend later. In fact, this is the essence of investing: the forbearance of immediate spending in exchange for future income. Because of the mathematics of compound interest, spending even a tiny fraction on a regular basis devastates final wealth over the long haul. During the last two hundred years, each 1% spent each year reduces the final amount by a factor of eight. For example, a 1% reduction in return would have reduced the final amount from $23 million to about $3 million and a 2% reduction to about $400,000. Few investors have the patience to leave the fruits of their labor untouched. And even if they did, their spendthrift heirs would likely make fast work of their fortune.

But even allowing for this, Figure 1-1 is still highly deceptive. For starters, it ignores commissions and taxes, which would have shrunk returns by another percent or two, reducing a potential $23 million fortune to the above $3 million or $400,000. Even more importantly, it ignores "survivorship bias." This term refers to the fact that only the best outcomes make it into the history books; those financial markets that failed do not. It is no accident that investors focus on the immense wealth generated by the economy and markets of the United States these past two centuries; the champion—our stock market—is the most easily visible, while less successful assets fade quickly from view.

And yet the global investor in 1790 would have been hard pressed to pick out the United States as a success story. At its birth, our nation was a financial basket case. And its history over the next century hardly inspired confidence, with an unstable banking structure, rampant speculation, and the Civil War. The nineteenth century culminated in the near bankruptcy of the U.S. Treasury, which was narrowly averted only through the organizational talents of J.P. Morgan. Worse still, for

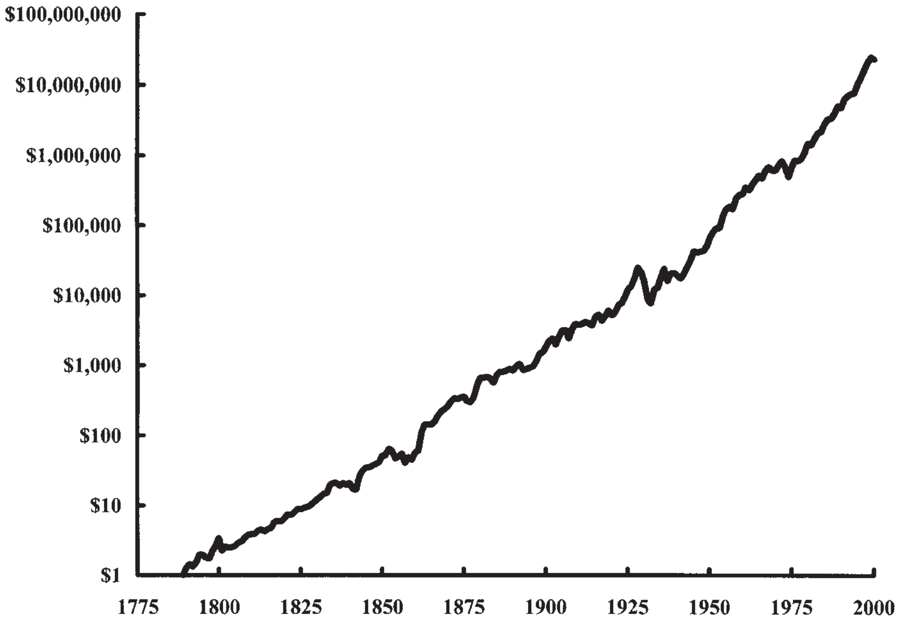

Figure 1-1. Value of $1.00 invested in U.S. stock market. (*Source:* Jeremy Siegel/ William Schwert.)

most of the past 200 years, stocks were inaccessible to the average person. Before about 1925, it was virtually impossible for even the wealthiest Americans to purchase shares in an honest and efficient manner.

Worst of all, in the year 2002, the good news about historically high stock returns is out of the bag. For historical reasons, many financial scholars undertake the serious study of U.S. stock returns with data beginning in 1871. But it's worth remembering that 1871 was only six years after the end of the Civil War, with industrial stocks selling at ridiculously low prices—just three to four times their annual earnings. Stocks today are selling at nearly ten times that valuation, making it unlikely that we will witness a repeat of the returns seen in the past 130 years.

Finally, there is the small matter of risk. Figure 1-1 is also deceptive because of the manner in which the data are displayed, with an enormous range of dollar values compressed into its vertical scale. The Great Depression, during which stocks lost more than 80% of their value, is just barely visible. Likewise, the 1973–1974 bear market, during which stocks lost more than one-half of their after-inflation value, is seen only as a slight flattening of the plot. And the October 1987 market crash is not visible at all. All three of these events drove millions of investors permanently out of the stock market. For a generation after the 1929 crash, the overwhelming majority of the investing public shunned stocks altogether.

The popular conceit of every bull market is that the public has bought into the value of long-term investing and will never sell their stocks simply because of market fluctuation. And time after time, the investing public loses heart after the inevitable punishing declines that stock markets periodically dish out, and the cycle begins anew.

With that in mind, we'll plumb the history of stock and bond returns around the globe for clues regarding how to capture some of their rewards.

Ultimately, this book is about the building of investment portfolios that are both prudent and efficient. The construction of a house is a valuable metaphor for this process. The very first thing the wise homebuilder does, before drawing up blueprints, digging a foundation, or ordering appliances, is learn about the construction materials available.

In the case of investing, these materials are stocks and bonds, and it is impossible to spend too much time studying them. We will expend a lot of energy on the several-hundred-year sweep of human investing—a topic that some may initially find tangential to our ultimate goal. Rest assured that our efforts in this area will be well rewarded. For the better we understand the nature, behavior, and history of our building materials, the stronger our house will be.

The study of financial history is an essential part of every investor's education. It is not possible to precisely predict the future, but a knowledge of the past often allows us to identify financial risk in the here and now. Returns are uncertain. But risks, at least, can be controlled. We tend to think of the stock and bond markets as relatively recent historical phenomena, but, in fact, there have been credit markets since human civilization first took root in the Fertile Crescent. And governments have been issuing bonds for several hundred years. More importantly, after they were issued, these bonds then fluctuated in price according to economic, political, and military conditions, just as they do today.

Nowhere is historian George Santayana's famous dictum, "Those who cannot remember the past are condemned to repeat it," more applicable than in finance. Financial history provides us with invaluable wisdom about the nature of the capital markets and of returns on securities. Intelligent investors ignore this record at their peril.

Risk and Return Throughout the Centuries

Even before money first appeared in the form of small pellets of silver 5,000 years ago, there have been credit markets. It is likely that for thousands of years of prehistory, loans of grain and cattle were made at interest; a bushel or calf lent in winter would be repaid twice over at harvest time. Such practices are still widespread in primitive societies. (When gold and silver first appeared as money, they were valued according to head of cattle, not the other way around.) But the invention of money magnified the prime question that has echoed down through investment history: How much return should be paid by the borrowers of capital to its lenders?

You may be wondering by now about why we're spending time on the early history of the credit markets. The reason for their relevance is simple. Two Nobel Prize-winning economists, Franco Modigliani and Merton Miller, realized more than four decades ago that the aggregate cost of and return on capital, adjusted for risk, are the same, regardless of whether stocks or bonds are employed. In other words, had the ancients used stock issuance instead of debt to finance their businesses, the rate of return to investors would have been the same. So we are looking at a reasonable portrait of investment return over the millennia.

The history of ancient credit markets is fairly extensive. In fact, much of the earliest historical record from the Fertile Crescent—Sumeria, Babylon, and Assyria—concerns itself with the loaning of money. Much of Hammurabi's famous Babylonian Code—the first comprehensive set of laws—dealt with commercial transactions.

A small ancient example will suffice. In Greece, a common business was that of the "bottomry loan," which was made against a maritime shipment and forfeited if the vessel sank. A fair amount of data is available on such loans, with rates of 22.5% for a round-trip voyage to the Bosphorus in peacetime and 30% in wartime. Since it is likely that fewer than 10% of ships were lost, these were highly profitable in the aggregate, though quite risky on a case-by-case basis. This is one of the first historical demonstrations of the relationship between risk and return: The 22.5% rate of interest was high, even for that period, reflecting the uncertainty of dealing with maritime navigation and trade. Further, the rate increased during wartime to compensate for the higher risk of cargo loss.

Another thing we learn from a brief tour of ancient finance is that interest rates responded to the stability of the society; in uncertain times, returns were higher because there was less sense of public trust and of societal permanence. All of the major ancient civilizations demonstrated a "U-shaped" pattern of interest rates, with high rates early in their history that slowly fell as the civilizations matured and stabilized, reaching the lowest point at the height of the civilizations' development and rising again as they decayed. For example, the apex of the Roman Empire in the first and second century A.D. saw interest rates as low as 4%.

As a general rule, the historical record suggests excellent investment returns in the ancient world. *But this record reflects only those societies that survived and prospered, since successful societies are much more likely to leave a record.* Babylonian, Greek, and Roman investors did much better than those in the nations they vanquished—the citizens of Judea or Carthage had far bigger worries than their failing financial portfolios.

This is not a trivial issue. At a very early stage in history we are encountering “survivorship bias”—the fact that only the best results tend to show up in the history books. In the twentieth century, for example, investors in the U.S., Canada, Sweden, and Switzerland did handsomely because they went largely untouched by the military and political disasters that befell most of the rest of the planet. Investors in tumultuous Germany, Japan, Argentina, and India were not so lucky; they obtained far smaller rewards.

Thus, it is highly misleading to rely on the investment performance of history’s most successful nations and empires as indicative of your own future returns.

At first glance, it might appear that the above list of winners and losers contradicts the relationship between risk and return. This is an excellent example of “hindsight bias”; in 1913 it was by no means obvious that the U.S., Canada, Sweden, and Switzerland would have the highest returns, and that Germany, Japan, Argentina, and India, the lowest. Going back further, in 1650 France and Spain were the mightiest economic and military powers in Europe, and England an impoverished upstart torn by civil war.

The interest rate bottom of 4% reached in Rome is particularly relevant to the modern audience. Never before, and perhaps not since, have the citizens of any nation had the sense of cultural and political permanence experienced in Rome at its apex. So the 4% return at Rome’s height may represent a kind of natural lower limit of investment returns, experienced only by the most confident (or perhaps overconfident) nations at the top of their game.

The Austrian economist Eugen von Böhm-Bawerk stated that the cultural and political level of a nation could be discerned by its interest rate: The more advanced the nation, the lower the loan rate. Economist Richard Sylla notes that a plot of interest rates can be thought of as a nation’s “fever chart,” with upward spikes almost always representing a military, economic, or political crisis, and long, flat stretches signifying extended periods of stability.