CHAPTER 1

A Brief History of Financial Time

Many of life's deepest questions, I have found, get asked over lunch.

This particular midday meal occurred in 2000 at a Chinese restaurant in Manhattan, and my companion was a well-known hedge-fund manager and contributor to the academic finance literature. We puzzled, as did many in finance at the time, over the historically high prices of stocks.

"What I cannot figure out," my friend began, "is whether investors are really smart or really stupid." Seeing my puzzled expression, he continued, "Maybe the equity risk premium is still high, in which case prices will mean revert, which means that stock investors are really stupid. Alternatively, the equity risk premium has gotten a lot lower in the past 10 years, in which case prices will not mean revert, which means stock investors are really smart." Just what did he mean, and why was his question so important?

Since my friend is really smart and has worked in finance all his adult life, I have to translate his question into plain English: "In the past, stocks have had high returns because they have been really risky. But stocks are now so expensive that there are only two possibilities: either they are going to fall dramatically in price and then have higher returns after that (in which case investors are stupid for paying such high prices now), or there will be no big fall in price and little risk, but returns will hereafter be permanently low (in which case investors are smart). So which is it?"

We both knew that the intelligence or lack thereof on the part of investors, from the humblest 401(k) participant to the titans of finance, was of secondary importance. Rather, my friend's question cut to the heart of the nature of investing: the interplay between risk and return.

Sometime in the mid-1990s, people forgot about the risk/return nexus, and although the tech collapse of 2000–2002 briefly roused investors from their complacency, the damage was not deep enough, wide enough, or long enough to leave a lasting impression.

By contrast, by 2009 investors were fully aware of financial risk; whether they remain awake to its nature for another generation, as they did after the market collapse of 1929–1932, or for less than a year, as they did after 2002, remains to be seen. However long the current turmoil lasts, it provides an opportunity to explore a radically altered investing environment. This book focuses primarily on the critical relationship between risk and return and what it means to investors in the current turbulent environment.

In the Beginning

In order to understand the story of risk and return, we need to travel back to the dawn of civilization. We can divide the millennia-old saga of investing into three parts: the development of loan capital; the development of equity, or stock capital; and the development of the capital markets themselves.

From the beginning of human civilization, consumers have bought products from farmers and merchants, and all three have needed to borrow. In fact, the very first decipherable cuneiform clay tablets found in Mesopotamia, in what is now Iraq, primarily recorded production and business activity, and much of it consisted of credit transactions. Ordinary people often required credit to purchase food and shelter; farmers needed credit to buy seeds, tools, and both slave and hired labor; and merchants craved capital to outfit their trading expeditions with pack animals, ships, crew, trade goods, and currency.

Like any other commodity, money has its price. What we recognize as "money"—stamped silver, gold, and copper disks—would not be invented until the late seventh century B.C. by the Lydians in Asia Minor. But no matter. Almost any widely traded commodity can fill the bill, and for thousands of years before the invention of coins, grain, silver ingots, and cattle served as capital that could be loaned by creditors and borrowed by debtors.

To the ancient farmer, a bushel of seed grain or a head of cattle was capital enough. He could borrow them in one season and repay them, usually twice over, the next, a practice still observed in present-day primitive agricultural societies. At the origins of human agriculture, this investment return, referred to interchangeably as the "cost of capital" or the "interest rate," was 100 percent per growing season.

Why this very high rate of return? It happened for at least two reasons. The first was supply and demand. So poor were ancient agricultural societies, so great was their demand for capital, and so little was the excess of it available for lending, mainly in the hands of wealthy farmers and businessmen, that the possessors of capital could demand a sky-high price for it. The second factor that drove up the cost of capital was that all loans were considered risky. In those days, an equivalent of the risk-free Treasury bill (T-bill) did not exist, and every loan probably carried with it a significant probability of default. Not until the late medieval period did northern European governments begin to offer very secure "risk-free" notes and bills.

Which of these two factors—supply and demand or default risk—was the primary cause of the high rates? In my opinion, the supply/demand imbalance was the dominant one. Lenders have always demanded collateral in case of default, and in the ancient world, it could be draconian: the seizure of all of the debtor's property, or even his and his family's enslavement. These extreme measures offered lenders reasonable protection against default, and thus increased the supply of capital available to poor borrowers. Legislation that favors borrowers over creditors makes the latter less liable to lend, often causing more ultimate harm than good to the borrower; this is the essential tradeoff of bankruptcy law.

Over the centuries, with the gradual increase in wealth, capital became more abundant, and so its price—the rate of interest—fell. In the third millennium B.C., Sumerian borrowers paid 33 percent per year for loans of grain and 20 percent for loans of silver. A millennium later, the best Babylonian debtors borrowed silver at 10 percent. A millennium after that, the Greeks paid interest rates as low as 6 percent, and at the height of the Roman Empire, they fell as low as 4 percent.[1]

Just why have I spent the past few pages discussing this ancient history? After all, this is a book about modern-day investing. *Because for every consumer of capital, there is, more or less, a provider of capital.* That is where you, the investor—the provider of capital—come into the story. In the jargon of finance, the "cost of capital" to its consumers is exactly the same as the return to the investor, and as an investor, only by understanding the risks and rewards of the consumers of your capital can you truly understand the process.

So far, I have been dealing with what is known in the modern era as "debt financing." But throughout history, capital has also been supplied on another basis, which is through actual ownership shares, known today as "equity financing," in which the owner of excess capital gives it to the businessman or merchant in exchange for a share of the assets and future profits of the venture.

From the merchant or borrower's perspective, this is less risky than borrowing; if the merchant's venture fails, then he owes nothing beyond the investor's share of the residual assets of the venture, since there are no profits to distribute. But from the lender's perspective, providing equity capital is risky indeed, since he can lose capital more easily than with a loan.

Further, the equity investor finds it devilishly hard to calculate the potential upside of an equity investment; it might be astronomical, it might be puny, or it might be lost entirely. In the modern world, most large firms gather both debt capital from banks or from bond issuance and equity capital from shareholders. The lenders of capital—the banks and bondholders—are paid off first. Only then do the equity shareholders—the "residual owners"—get what remains.

> The stock shareholder is last in line to receive the payoff from a business. This is a risky proposition, and thus deserves a higher return, *on average*, than that earned by the bondholders, who get their money back first.

For these three reasons—the increased possibility of loss, the difficulty of estimating future profits, and the residual nature of equity ownership—a substantial return premium *should* be demanded by equity owners. This is the "equity risk premium" that my friend and I puzzled over that day at lunch.

Because of the risks of equity ownership, it did not develop on a large scale until relatively late in history. True, since ancient times small enterprises often spread ownership among individuals, but the first joint stock companies did not see light of day until the medieval period. Around A.D. 1150, a water mill in Bazacle in southern France divided its ownership into shares. When the Paris Bourse opened in the eighteenth century, these shares traded actively until 1946, when that nation's socialist government, apparently lacking a sense of economic history, nationalized the company.[2]

Around A.D. 1600, two much larger ventures, the English and Dutch East India Companies (hereafter referred to as the EIC and VOC, respectively, the latter by its Dutch initials), sold shares in their trading ventures, which were initially aimed at exploiting the fabulously profitable East Asian spice trade. The differences between the two companies spoke volumes about the power, wealth, and sophistication of these two nations, and about how investors were, and are, rewarded.

At that time, England was a backward, weak nation with almost no functioning capital markets. Queen Elizabeth I, who issued the EIC's charter, was, by modern standards, a corrupt monarch whose revenue came mainly from rents on royal lands and the sale of monopolies to court favorites (most famously, the sweet wine franchise to Sir Walter Raleigh). Lenders to the crown demanded high interest rates to compensate for the risk that monarchs could, and frequently did, renounce their debts at will.

Consequently, the cost of capital, that is, interest rates, in Tudor England were high. The lowest rates to high-quality borrowers with generous collateral were in the 10 to 14 percent range, while loan rates to riskier ventures and the crown were higher still.[3] The EIC, an even more uncertain enterprise, could not borrow capital at any price, nor could it even sell conventional shares. Instead, it was forced to offer fractional ownership in each annual expedition, return all of the investor's capital when the company's spice-laden ships returned from the East Indies, then raise capital all over again for the next expedition. Simply put, the EIC lacked permanent capital to sustain ongoing operations.

Fortunately for its investors, the EIC expeditions proved hugely successful, often paying returns in excess of 100 percent. Always remember, investment return and the cost of capital for business ventures are flip sides of the same coin. These very high returns meant that British business ventures paid dearly for their seed cash; this is not the way to grow an economy or make a nation powerful.

By contrast, the Dutch East India Company thrived in the Netherlands' sophisticated and trusted capital markets. By the late sixteenth century, its larger provincial governments and the best private borrowers got their capital at just 4 percent annual interest. When the VOC floated its stock shares, it was as permanent capital. The money was the company's to spend as it saw fit, and investors did not expect to see the initial investment back any time soon, beyond a regular stream of profits as dividends.

Dutch capital markets, with relatively low returns, a safer investment climate, and low-rate loans with which to fuel the nation's entrepreneurs, presented the mirror image to those in England, where investors earned higher returns, but only at the price of higher risk.

We now have two of the three elements in place needed to answer my friend's plaintive lunchtime question in the year 2000: debt and equity capital, and the difference between the costs of the two, the *equity risk premium.* In order to give us some idea of what to expect in terms of risk and return, all that is needed is an appreciation of the markets where they trade.

That debt and equity capital exist does not necessarily mean markets for them also do. The loan of a bushel of grain by one farmer to another in Mesopotamia in 2500 B.C. remained simply an agreement between these two men. Yes, the loan could be counted as an asset on the part of the lender, but it could not be easily sold by him to another investor. Likewise, until the establishment of the Paris Bourse, the owner of a share in the Bazacle mill could not easily sell it to someone else, although apparently, shares were occasionally traded among private individuals.

Near-Death in Venice

The real story of the capital markets begins in the fifth century A.D., when the collapse of the Roman Empire in the west drove a small group of refugees to seek shelter. They found it in an island group situated in an obscure lagoon nestled in the northern corner of Italy's Adriatic coastline. This tiny city-state, Venice, prospered in the burgeoning maritime trade of the western Mediterranean. By the beginning of the second millennium, its galleys were filled with the most profitable commodities of the era: slaves and grain from the Black Sea, spices from East Asia, incense transshipped from Alexandria and Cairo, and a host of other luxuries from the far corners of the globe.

Venice also found itself almost continuously at war with its more powerful neighbors and trading rivals, especially Genoa and the Ottoman Turks. In order to finance these conflicts, *la Serenissima*—the most serene republic—levied a curious kind of tax upon its wealthiest citizens, the *prestiti.*

Prestiti were bonds issued by the state that yielded 5 percent. The Venetian treasury forced the rich to buy these securities, and their purchase was onerous because the going rate of interest was higher, about 6 percent in peacetime, and as high as 15 to 20 percent in the teeth of a crisis, when the treasury was most likely to issue them.

Citizens paid the principal to a central treasury office, which then remitted periodic interest payments to their registered owners. The modern bond market was born when the treasury allowed owners to reregister these securities in someone else's name. Soon enough, what is now called a "secondary market" in prestiti arose, not only in Venice, but in other nations as well.

Figure 1.1 plots prestiti prices over the two-century span between A.D. 1300 and 1500, and what a saga this graph tells. For the first 75 years of this plot, Venice enjoyed relative tranquility, and prestiti prices remained lofty, trading as high as par (100 percent of face value). As late as 1375, they sold at 92.5 percent of face value.

Then, between A.D. 1377 and 1380, Venice fought a catastrophic war with Genoa. Initially, fiscal shock, not military defeat, damaged prestiti prices; the upcoming war expenditures forced the republic to suspend interest payments and issue a massive amount of new bonds. This depressed their prices as low as 19 percent of face value at the conflict's onset. Worse followed: In 1379, the Genoese penetrated the

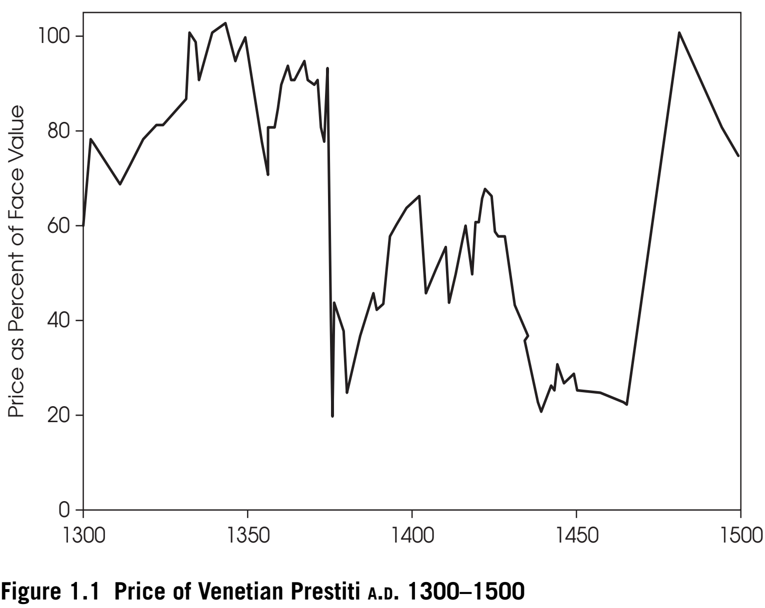

Figure 1.1 Price of Venetian Prestiti A.D. 1300–1500
Source Data: Sidney Homer and Richard Sylla, *A History of Interest Rates* (Hoboken, NJ: John Wiley & Sons, 2005), 99, 107.

lagoon, occupied Chioggia at its southern edge, used it to blockade la Serenissima, and nearly overran the island city. By 1380, when the city seemed about to capitulate, a daring last-ditch, counter-blockade of Chioggia by the Venetians broke the will of the Genoese and forced them to retreat.[4]

Thereafter, Venice's military fortunes improved, but continued high military expenses meant equally heavy issuance of prestiti, which kept their prices in the secondary market relatively low for nearly a century until the republic's debt was refinanced in 1482.

Once again, just what does all this medieval history have to do with today's markets? Everything and more, for the history of the prestiti demonstrates, at a relatively early point in financial history, the close relationship between risk and return. Venetians who purchased prestiti at high prices in the secondary market during the calmest years earned the lowest returns. Contrariwise, those who bought at low prices when things looked the bleakest reaped the largest rewards. The brave soul who purchased prestiti in 1377 at a price of 19 percent of face value in the secondary market collected not only 26.3 percent interest (5 percent divided by 0.19), but also a large dollop of subsequent capital appreciation as well. Of course, the risk that la Serenissima could have fallen to the Genoese, thus rendering the prestiti worthless, was substantial; hence the term *risk premium.*

This roller coaster ride aside, the price series of Venetian prestiti was a relatively happy one; la Serenissima continued to issue debt and pay interest on it for more than four centuries after its near-death experience in 1377–1380. Among developed nations, recovery from military and economic travail is the rule, and very high returns are usually made by those brave enough to invest when the sky is blackest.

Markets, however, do not always recover. Until World War I shut down the St. Petersburg exchange in 1914, the Russian stock and bond markets were among the world's most respected and active. They never reopened. During the twentieth century alone, military and political upheaval rendered not just St. Petersburg's bourse, but also many other once-vigorous securities markets, defunct, or at least moribund: Cairo, Bombay, Buenos Aires, and Shanghai, to name a few.

> For the past 200 years, things have always worked out well in the long run for the owners of U.S. stocks. History shows that it is entirely possible that our luck will run out one day.

Here is the central question for today's investor: Are we in Venice in 1377, or in St. Petersburg in 1914? In most aspects, today's financial markets resemble the former. They are indeed distressed, and for good reason. Although there is every probability that the world economy, and the securities markets along with it, will recover and provide courageous investors with high returns, as did prestiti in 1377, it is also possible that things will turn out worse than most predict. We just do not know for certain. Again, this is the very definition of a risk premium: the reward for bearing the risks of the unknown. Further, the greater the perceived risk, the greater the reward if things eventually turn out well.

The Incredible Shrinking Risk Premium

Eight years after lunch with my friend in the Chinese restaurant, the markets seem to have answered his question with a vengeance. Stock investors had indeed been stupid because they did not learn the lesson of just how risky even the seemingly safest assets can become, and even more critically, for accepting a low equity risk return premium for taking those risks.

In 2000, many finance professionals did indeed grasp the shrinking equity risk premium. Unfortunately, many of them, particularly my friend's brethren in the hedge fund world, made a fatal mistake: Since risk premiums were low, they reasoned, the only way to earn higher returns was by borrowing large amounts of capital to multiply—"leverage," in financial parlance—those paltry premiums. As so elegantly put by the dean of American financial writers, James Grant, in a slightly different context:

> Imagine a man at the top of a stepladder. He is up on his toes reaching for something. Call that something "yield." Call the stepladder "leverage." Now kick the ladder away. The man falls, pieces of debt crashing to the floor around him.[5]

Summary

- Throughout history, there have always been providers and consumers of capital; today it is no different.
- Also throughout history, that capital has taken two basic forms: loans (including bonds) and equity (partnership or stock). The latter has a lower legal standing than the former, and it is thus riskier and necessitates a higher long-term return to attract investors.
- During times of great social, political, and military turbulence, the prices of both stocks and bonds usually decline precipitously. Most often, this sets the stage for high future returns. Less frequently, however, the losses can be permanent and even total. Financial history demonstrates vividly the fact that just because this has not happened in the U.S. stock and bond markets *yet* is no guarantee that it might not occur in the future.