Investors Have Been Making the Same Mistake for 300 Years

If Isaac Newton could lose all reason in the pursuit of riches, so can anyone else.

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EARLY IN AUGUST 1720, Sir Isaac Newton was faced with a choice. In a year when London's stock market was roaring upward in an utterly unprecedented boom, should he sell the last of his safe investments to buy shares in the South Sea Company? Since January of that year, shares in the firm—one of the largest private companies in history—had gone up eightfold, and had made paper fortunes for thousands.

Already a wealthy man, Newton was usually a cautious investor. As the year began, much of his money was tucked away in various kinds of government bonds—reliable, uneventful investments that delivered a regular stream of income. He did own shares in a few of the larger companies on the exchange, including South Sea, but he had never been a rapid or eager market trader.

That had changed in the past few months, though, as he bought and sold into the rising market seemingly in the hopes of turning a comfortable fortune into an enormous one. By August, he'd unloaded most of his bonds, converting them and other assets into South Sea shares. Now he contemplated selling the rest of his bonds to buy still more shares.

He did sell nearly all of them. It was a disastrous choice. Within three weeks, the market turned. By Christmas, it had utterly collapsed. Newton's losses reached millions of dollars in 21st-century money.

Any investor can make mistakes. But Newton was no ordinary loser. He was the greatest mathematician alive, someone who thought deeply about change over time, risk, and calculations that turned experience into numbers.

This other Newton—not the unfathomable genius, but the player whose play failed—has had an uncountable number of heirs. The global financial system still breaks the same way it did 300 years ago. The dot-com bubble that collapsed from 2000 to 2002 and the real-estate bubble of 2007 and 2008 were part of a recurring pattern of boom, bust, and bankrupted people, institutions, and nations. Newton's errors matter, because we're still making them.

Months into a deadly pandemic that has ravaged the world and thrown millions of Americans out of work, the crisis that sparked the Great Recession seems like a distant memory. Forgetfulness is only one of the reasons bubbles happen again and again. From the moment Congress added new restrictions on risky trading a decade ago, the financial-services industry began angling to escape them. Yet past experience offers little reason to trust the wisdom and rationality of financiers or investors. Newton's contemporaries viewed him as the smartest man alive. If he could go so wrong—risking something like half his wealth in a reckless fashion—so could anyone. Research published last year by the mathematician Andrew Odlyzko into Newton's actions during the South Sea bubble illuminates not just the great thinker's long-ago mistakes, but also a pattern of human folly that recurs over and over again. When financial markets offer the temptation of ever-rising values, not even the smartest people can resist.

THE EVENTS OF 1720 were an early experiment in financial engineering that went badly awry. The enterprise at the heart of market boom and bust, the South Sea Company, was ostensibly a mercantile firm with monopoly rights to Britain's trade in goods and enslaved people bound for Spain's Latin American colonies. In that capacity, it would ultimately ship more than 30,000 stolen African lives across the Atlantic Ocean. But the company also played another role—that of a quasi-bank the British government used to help manage its debt.

For almost a decade, the company did a steady, if dull, business as a clearinghouse for certain types of bonds and similar securities. Interest payments came in from the treasury, and dividends went back out to shareholders, with just a handful of barely profitable trading voyages to distract the back office. Newton was one of those early shareholders, and the decisions that he made were captured in his letters, the recollections of others, and an inventory of his estate. He bought stock at about £100 a share, until by the end of 1719 he had accumulated holdings worth £13,000, or roughly £2 million in present-day British currency.

Then, in January 1720, the South Sea Company's governors grew much more ambitious. They proposed a financial maneuver that would transform Britain's entire national debt. Everyone who owned bonds, annuities, or any other official security could exchange their holdings for company shares—the hook being the chance to play for stock-market gains, instead of just a modest stream of interest payments. In turn, the company would cut the rate the treasury had to pay on its debt. All that was needed for the scheme to work were prices for its stock that climbed and stayed high enough to persuade debt holders to take the plunge. A well-bribed Parliament and ruling ministry accepted the idea in February, and the deal went live in April. It was a hit. Investors and gamblers swarmed London's Exchange Alley, bidding up the stock to £315 on the first day new shares went on sale, 8 percent up on the day and more than double the price of shares in January.

That was just the beginning. The shares hit £352 on April 25 and £487 on May 23—and then kept right on going. Investigations the following year revealed that the boom had help: The top South Sea leaders did all they could to pump the stock, lending money to fund purchases, secret share buybacks, the aggressive use of an early form of derivatives, and more.

The boom delivered seemingly limitless wealth. Contemporaries recorded the frenzy: In early May, the author Daniel Defoe wrote about how he couldn't hear the sermon in church that Sunday for the clamor. "While I was in the very Porch I heard a voice … cry out loud," he wrote. "How goes the Stock? Go, says t'other, it does not go, it flies."

AT FIRST, ISAAC NEWTON resisted temptation. He held on to the South Sea shares he already owned but did not swap any of his roughly £19,000 in government securities for more company stock.

Then, at the end of April, he, like a handful of other cautious investors, decided that the South Sea Company had made him rich enough. Odlyzko recently published a comprehensive review of Newton's stock trading during the bubble year, which shows that over several weeks Newton cashed out, unloading almost all of his South Sea shares, at prices that ranged from about £400 to about £500. When he was done, he'd cleared a profit that Odlyzko estimates at about £20,000—or 200 years of his former annual salary as a professor at the University of Cambridge.

As Newton was selling, South Sea shares traded up from £350 to £595. On June 1, the company's value leapt forward even more. Brokers quoted £720 for the stock, then £770 five days later. By mid-June, Newton could no longer stand the thought of the money he'd "lost" by selling too soon—and began to buy back in. By mid-August, he was paying £700 to £1,000 a share, more than double the price he'd been willing to accept as a seller in the spring. All that prior profit and much more of his capital as well would now ride on how the market treated South Sea stock.

Throughout the summer, the stock traded in a fairly narrow range, from the £800s to about £900. But when investors lost confidence, it happened quickly. On August 31, South Sea shares stood at £810. In a week, the stock could be had for £700. On September 14, the quote was £570—and the plunge accelerated from there. Company stock brought £290 on October 1—wiping out the entire gain in the stock since the deal opened—and then slid below £200 by early November.

Newton's losses were catastrophic, likely £20,000—the equivalent of $4 million today—and by Odlyzko's calculations, possibly much more.

FOR NEWTON, THAT OUTCOME was at once a calamity and a mystery. How could such a thinker have failed so badly, when other, lesser minds had actually managed to recognize the enormous risk in the market at its peak? For example, a member of Parliament named Archibald Hutcheson had been able to run the numbers as early as March to show how South Sea stock would be dangerously overpriced at levels achieved early in the bubble. It was a clever calculation, but hardly a challenge for Newton, built as it was on concepts he had mastered decades before. Given that it was that simple, and that Hutcheson had published it for all to see, why hadn't Newton figured it out as well, and saved his fortune?

Newton had a simple explanation for his lapse. At the crucial moment, he'd lost his mind. Or rather, others around him had lost theirs. "I can calculate the motions of the heavenly bodies," his niece recalled him saying, "but not the madness of the people."

That was, of course, an excuse. Who could blame him if the world was irrational? With three centuries of historical distance, though, that explanation doesn't account for the specific timeline of Newton's decisions during the bubble spring, each of which can be seen to make sense as it was being made. The argument for his first move, his choice in April to sell, is perfectly straightforward: He concluded that he'd made enough money and was willing to take his profit. A similarly coherent story could justify a return to the market a few weeks later. The same basic idea had already worked for hundreds, perhaps thousands, who hopped in and out more than once; every day the market rose, they could count a gain. Why shouldn't it turn out that way for him?

It did until it didn't. What gnawed at Newton for years, and what still seems strange, is that his capacity for dispassionate analysis failed him when he needed it most. Here was a man who had calculated logarithms to 50 places. But in the thrill of the moment, he failed to do the math.

NEWTON'S INDIVIDUAL FAILURE points to a general feature of money manias. As the economic historian Anne McCants has argued, market crises are social phenomena: The emotions that humans feel and communicate to one another mold what we can convince ourselves are objectively "rational" decisions. That was true 300 years ago in the first recognizably modern financial disaster, and it remains so today. The question is whether anything can or will be done to control for the fact that none of us can expect to outthink Isaac Newton.

Starting in 1721, a new British parliamentary leadership moved to impose some measures to prevent a recurrence of the previous year's disaster. That's been a common response to subsequent financial disasters, including the Great Recession. There has also been a pattern of allowing such regulations to lapse as the memory of the prior collapse fades. Since 2017, the Trump administration has been systematically dismantling even the modest market guardrails that were put in place after the previous crash. If allowed to stand, these acts will amplify the harm to come when the next financial panic strikes.

Thus the last message Isaac Newton can offer, three centuries after he lost his shirt: He and his peers may be forgiven for failing to navigate a brand-new species of catastrophe. We do not have that excuse.

This post was adapted from Levenson's recent book, Money for Nothing: The Scientists, Fraudsters, and Corrupt Politicians Who Reinvented Money, Panicked a Nation, and Made the World Rich.

We want to hear what you think about this article. Submit a letter to the editor or write to letters@theatlantic.com.

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