

Chapter One

PROMISES, PROMISES

There's a sexy new way to make excuses for technosolutionism. It's called "abundance," as epitomized in Ezra Klein and Derek Thompson's book titled, well, *Abundance*. Their book makes a quantum leap from proposals to increase housing supply to an AI-enabled future where "most people can complete a full week of work in a few days, which has expanded the number of holidays, long weekends, and vacations. Less work has not meant less pay. AI is built on the collective knowledge of humanity, and so its profits are shared." And what, pray tell, will it take to usher in this utopia? According to Klein and Thompson, "to have the future we want, we need to build and invent more of what we need. That's it. That's the thesis. It reads, even to us, as too simple."

Perhaps they should have listened to their first instincts there – their thesis is too simple. Imagining what they believe a just future would look like and "work[ing] backward to the technological advances that would hasten its arrival," Klein and Thompson think the problem is that we've "lost the faith in the future that once powered our optimism," that we don't have enough "utopian thinking." In other words, their book is the

diametric opposite of this book. I'm making the case that we can't flatten all our problems into engineering puzzles, and that it's dangerous to give so much credence to the visions and outlandish promises of Silicon Valley's techno-optimists. Klein and Thompson want us to lean even further into those visions and promises. To help bring about the "utopias" dangled by Silicon Valley hype men, they want the innovation-industrial complex to be even more unconstrained by regulation than it currently is. Given Silicon Valley's track record of unrealistic and unfulfilled promises, it is hard to take this abundance approach seriously.

This book focuses on unrealistic promises to fix finance with "fintech," and the next four chapters will systematically debunk these promises in a way that highlights Silicon Valley's tendencies to fete rookies, disdain subject matter expertise, and completely miss the limitations of its own output. To show that these pathologies aren't unique to fintech, though, we'll first take a look at a few other Silicon Valley cautionary tales including Theranos, the Metaverse, and Juicero (and I couldn't resist including FTX in this murderer's row as well). Silicon Valley's tendency to overpromise and underdeliver is something that we should all keep front of mind – particularly as the industry tries to force feed us AI solutions like we're foie gras geese.

Given Silicon Valley's track record, it shouldn't be surprising that a lot of fintech misses the mark. That doesn't mean there isn't a lot to fix in finance. Our financial system has in many respects lost its way, with Wall Street becoming increasingly self-referential, serving itself more than it helps the broader economy to grow. Sometimes the financial industry takes advantage of its customers; sometimes it takes big risks and the rest of us end up on the hook for its losses. There are lots of

pain points to address but as we'll see, neither fintech startups nor the venture capitalists who fund them seem to understand the *why* of it, the root causes of these problems. There are centuries of experience to draw on to figure out how to make our financial system better – and, ahem Messrs. Klein & Thompson, just relaxing regulations to allow more financial products to be built isn't going to do it (we saw how well that worked out in 2008). Silicon Valley doesn't seem particularly interested in learning from our financial history, and there's no reason to expect that a bunch of rookies will be able to fix our financial system.

Rookies

The most obvious illustrations of Silicon Valley's empty promises are the notorious frauds that made front page news – frauds like FTX and Theranos. You could write entire books about each of those frauds, and several people [already have](#). The element I want to focus on here, though, is the suspension of disbelief it takes to think that these particular founders could *ever* deliver on their articulated visions. Although they talked a good game and engaged in some solid tech founder cosplay, Sam Bankman-Fried and Elizabeth Holmes entirely lacked the expertise needed to deliver on what they promised. Why didn't everybody consider that disqualifying from the beginning?

In the introduction, I wrote briefly about Sam Bankman-Fried, the now-disgraced founder of the crypto exchange FTX. Before it was revealed that Bankman-Fried and his affiliates had been using customer assets for their own purposes, FTX had been backed by Sequoia Capital, one of the biggest names in Silicon Valley venture capital. In a fawning [profile](#) published by Sequoia just weeks before FTX's collapse, the Sequoia partners

emphasized how compelling they found “the scale of SBF’s vision.” They said they rushed to invest in FTX because this vision “wasn’t a story about how we might use fintech in the future, or crypto, or a new kind of bank. It was a vision about the future of money itself—with a total addressable market of every person on the entire planet.” But why was Bankman-Fried’s vision for the future of money any more credible than, say, a stoned kid in his parents’ basement saying “you’re thinking of money all wrong, man...”? When Sequoia found out that Bankman-Fried had spent the entirety of their first Zoom meeting playing video games in split screen, that didn’t put them off but only made them love him more.

Bankman-Fried had certainly made a lot of money trading by the time he met with Sequoia, and he is by all accounts a math whiz. But he had no academic background in economics, or history, or public policy, or anything else that suggested he would understand how to design a new monetary system – and it seems unlikely that he was self-taught, given his own admission in the Sequoia profile that “I would never read a book. I’m very skeptical of books. I don’t want to say no book is ever worth reading, but I actually do believe something pretty close to that.” Bankman-Fried’s experience at the Wall Street firm Jane Street might lead people to believe he was qualified to design a trading platform, but not only was “trading platform” a lot less lofty than the “future of money” vision he had pitched to Sequoia, a lot of things Bankman-Fried wanted his trading platform to do betrayed a complete misunderstanding of how people and the financial system actually behave.

For example, Bankman-Fried wanted to program his exchange platform to perform automated “margin calls” at any

moment, 24/7, for all of his customers. This would mean that any customer who borrowed money to invest in crypto bore the risk that algorithms would automatically sell off their investments if crypto market prices dropped too far (and crypto prices bounce around *a lot*). That model might be a good fit for a sophisticated hedge fund client like Jane Street, where there was always someone on hand to post more collateral to prevent portfolio liquidation. It might even have been a good enough fit for Bankman-Fried himself, who notoriously survived on beanbag catnaps. But your average retail trader can't monitor their portfolio all the time for the obvious reason that they need to sleep. Even for sophisticated players, there will always be situations in which rigidly automating financial transactions turns out to be a bad idea. Bankman-Fried seemed not to grasp that in the real world, scope for grace, discretion, and flexibility is necessary to cater for mistakes and unexpected events.

To be fair, it's possible that Bankman-Fried did understand these problems, and either didn't care or sought to exploit them. Maybe the plan was for Bankman-Fried's affiliates to scoop up liquidated customer portfolios on the cheap, for example. So many people were snowed by Bankman-Fried's ethical schtick as he waffled on about the philosophical constructs of utilitarianism and effective altruism, assuming that his schlubby appearance, his veganism, and his preference for a simple Toyota Corolla established his "good guy" bona fides. But after FTX failed, Bankman-Fried [admitted](#) that all his drawn out philosophizing about ethical imperatives was "not true, not really." Bankman-Fried is now serving a 25-year prison sentence.

The media sometimes jokes about the "Forbes to prison pipeline," and Bankman-Fried was featured in Forbes magazine's

“30 under 30” list in 2021. Caroline Ellison, who had been CEO of FTX’s affiliated hedge fund Alameda Research featured on that 30 under 30 list in 2022 (Ellison had also been romantically involved with Bankman-Fried for a time – an unexpected side effect of FTX’s collapse was that we all got to learn about polycule relationship status). Ellison pled guilty to fraud charges in 2022, and also [confirmed](#) that Bankman-Fried’s unruly-hair-and-cargo-shorts mien had been carefully cultivated to make him look like one of the good guys. At the end of 2023, Forbes published a *mea culpa* [article](#) titled *Hall of Shame: The 10 Most Dubious People Ever to Make our 30 Under 30 List*. Both Bankman-Fried and Ellison were included.

Elizabeth Holmes, founder of the healthcare startup Theranos and currently serving time in at a federal prison in Texas for defrauding *her* investors, was not included in the *Hall of Shame* because she never technically made that “30 under 30” list in the first place. However, Holmes was feted on the cover of Forbes Magazine and received an “Under 30 Doers Award” at the Forbes Under 30 summit before her fraud was exposed. Let’s call that an honorary mention.

Theranos promised to disrupt healthcare by using a pinprick instead of a needle to draw blood, making the process easier, cheaper, and less painful than available alternatives. The problem was that Theranos’ much-hyped Edison blood-testing machine didn’t really work: even though it was advertised as capable of performing over 200 different diagnostic tests, the FDA only ever certified it as reliably performing one single test – for herpes. The results of the other tests that the Edison machine could sort-of-perform were often wrong: patients were [misdiagnosed](#) with diseases ranging from diabetes to HIV to

cancer, and at least [one pregnant woman](#) was told she was losing her baby when that wasn't the case. For the vast majority of the advertised tests, though, Theranos needed whole vials of blood drawn with needles to run tests and used equipment developed by Siemens to perform them. But for many years, Holmes was able to ensure that neither her investors nor her regulators were aware of the Siemens machine behind the curtain.

If we stop to think about it, though, is it even remotely surprising that Holmes was unable to come up with a revolutionary blood testing apparatus? She was a Stanford engineering dropout who hadn't taken the time to develop any meaningful expertise in the biosciences. The other key leadership figure at Theranos was Sunny Balwani, who similarly had no knowledge or experience in any bioscience field (Balwani, who had secretly been romantically involved with Holmes while they were running Theranos, is now also serving time). Medical experts in lab-testing and pathology were not part of the upper echelons of Theranos' management; skilled employees who did raise concerns about the technology were often bullied and fired.

And yet Theranos found funding (and reputational backing) among the [Silicon Valley elite](#), including prominent venture capitalists and founders like Larry Ellison, Don Lucas, and Tim Draper (Draper is now a prominent [Bitcoin supporter](#), but we'll get to Bitcoin later). Holmes was admittedly vouched for by one engineer, Stanford professor Channing Robertson, but he didn't have any biomedical expertise (Phyllis Gardner, a Stanford medical professor Holmes had approached about the startup, rejected the idea as unworkable). Theranos' board also featured a lot of famous names – including former Secretaries of

State Henry Kissinger and George Schultz – but their expertise lay far outside the field of the biosciences.

The science behind Theranos' purported diagnostic testing innovation was never written up in any medical journal: John Carreyrou, who wrote *Bad Blood*, the definitive account of the Theranos fraud, observed that “sources who worked with [Holmes]...said that she never really showed any curiosity about what was going on in academia and industry.” In hindsight, it seems like the actual science of blood testing was an annoying impediment to Holmes' dreams of being a rich Silicon Valley founder (she was famous for wearing Steve Jobs-style black turtlenecks, and for using a contrived deep voice – she now admits that both were affectations she has since dispensed with). That Holmes was able to get away with her fraud for so long is symptomatic of a Silicon Valley culture that tends to devalue the importance of developing expertise in the area of the problem you wish to solve. Silicon Valley often fails to ask the fundamental first question “can this technology actually do this thing?,” optimistically assuming that the answer must be yes.

The juice ain't worth the squeeze

The answer to the question “can this technology actually do this thing?” is “no” when the technology can't solve the problem at hand; the answer is also “no” if there's not actually an identified “thing” for the technology to do. In the early days of the internet, it was abundantly clear to people that it was useful, even though the pathways to commercializing the internet weren't necessarily obvious at first. Today, it sometimes feels like that reality has been flipped on its head.

Members of the Silicon Valley elite (people who made their fortunes at the beginning of the internet era, or later, with the arrival of the smartphone) can seem like junkies chasing the dragon of another tech revolution high, pushing any new fad they happen upon, actual use cases be damned. Billions of dollars are poured into development, hype, and lobbying in an attempt to recreate the magic (and the profit) of days gone by...and with these kinds of sums available, the logic of market demand can be distorted. Silicon Valley offerings don't have to sink or swim on their own, but can instead be artificially buoyed as competitors are edged out and as laws are manipulated to try and create markets that the technology would struggle to sustain on its own.

While experimentation and failure are a critical part of any innovation process, for an industry that is hailed for “failing fast” and then moving on to the next thing, there are many tech projects that can more accurately be described as “beating a dead horse.” Amidst what surely seems to be a plateauing rate of internet-related technological progress, some “solutions” are thrust upon us that are uninspiring to the point of ridiculousness. Take my favorite Silicon Valley cautionary tale, [Juicero](#). Juceiro received \$120 million in startup funding from venture capitalists between 2014-2017 to manufacture machines that squeezed bespoke juice pouches. The machines required WiFi and an app to enable the squeezing, and retailed for hundreds of dollars. Unfortunately for the company, it turned out that their pouches could be squeezed just as well by hand.

Or take Mark Zuckerberg's dive into the Metaverse. In 2021, Facebook CEO Mark Zuckerberg decided to pivot Facebook's business model into building the kind of virtual world found in the science fiction novel [Snow Crash](#) (as we'll see

throughout this book, tech billionaires often seem to delight in trying to bring dystopian science fiction to life). The company changed its name from Facebook to Meta and ploughed about [\\$46 billion](#) into building the Metaverse. But even Meta’s executives and surrogates struggled to articulate a real vision of what the Metaverse was *for*.

In the summer of 2022, I spoke at a technology conference on a panel titled *Are the Metaverse and Web 3.0 Real or Hype?* It was a pretty high-profile panel, and team “Real” included the then-Global Director for Public Policy at Meta, as well as Metaverse-friendly regulatory commissioner Caroline Pham. I was there to call “Hype,” and found myself seated with the other speakers at a dinner the night before the panel. I sat uncomfortably at the table, knowing the next day’s panel would be very combative, mostly just listening as some of Meta’s biggest cheerleaders made the case for the Metaverse’s transformational power. They promised with great fanfare that in the Metaverse...

... Zoom meetings would be replaced with a video-game version of your office!

There are many reasons to make fun of the Metaverse, from its million-dollar virtual properties to its [legless](#) human avatars. But for me, nothing will top the banality of a Metaverse cheerleader describing it as “a video game of your office.” Dare to dream, kids.

Some have [suggested](#) that Meta’s motivation in trying to make the Metaverse happen was to allow employers to re-engage in workplace surveillance at a time when most people were working remotely. Personally, I suspected that Meta’s primary goal was to find a way to convert everyday human *interactions*

into virtual reality *transactions* – and to profit from being the platform that sat in the middle of all those new transactions, taking a little cut each time. But what impact would that have on the fabric of our society, if every single human interaction were transactionalized? That’s the question I posed on my panel back in 2022, and in case you’re wondering, it was not very well received by my fellow panelists.

In retrospect, though, I might have been guilty of a little criti-hype. It turned out that there was little to fear from the Metaverse because so few people were even remotely interested in going there. In September 2022, Meta’s VP of Metaverse [wrote](#) an internal memo to his own employees imploring them to please, please, please use the Metaverse: “Why don’t we love the product we’ve built so much that we use it all the time?” he wrote plaintively. “The simple truth is, if we don’t love it, how can we expect our users to love it?”

In my defense, it wasn’t guaranteed that lack of interest would doom the Metaverse – as I’ve already alluded to, there is so much money in Silicon Valley that some zombie tech businesses can survive for quite some time, despite a lack of user demand. And eventually, the world might be talked into thinking a problem exists for the techno-solution to solve. What really spelled the end of the Metaverse was growing interest in another shiny new technology: by March of 2023, much of the money and attention that had been focused on making legless avatars and virtual facsimiles of our world had shifted to AI.

Versions of technologies that get called “AI” have been around for quite some time, but it was the launch of the advanced chatbot ChatGPT at the end of 2022 that gave those two little

letters their ability to turn straw into gold. By 2023, savvy tech startups who wanted to attract funding from venture capitalists learned to say their product used AI in some way, shape, or form – which diverted attention away from problems that didn’t lend themselves to AI solutions, and encouraged the use of AI to solve problems it wasn’t suited to. We’re going to talk a lot more about AI in Chapter 5, but the short short version is that there are also lots of situations where regular old human intelligence can do the job more cost-effectively than AI tools and there’s no evidence that that’s likely to change any time soon. As with Juicero, the juice may not be worth the very expensive technologically-facilitated squeeze (and yes, I am aware that I am really torturing this juice analogy).

As the always-insightful tech commentator Cory Doctorow [quipped](#), “The AI can’t do your job, but an AI salesman can convince your boss to fire you and replace you with a chatbot that can’t do your job.” A 2024 [study](#) by the freelancing platform Upwork supports that observation. It found that 96% of the executives they surveyed expected that AI-based tools would increase overall productivity at their company (with 39% of their companies mandating the use of such tools and 46% encouraging them), but nearly 47% of the surveyed employees using the AI tools had “no idea how to achieve the productivity gains their employers expect.”

One might have hoped that survey findings like these would prompt a reassessment of what AI tools are actually capable of, but instead, it seems that many executives are simply doubling down on their expectations that employees should be able to do more than ever before, despite how time-consuming it is to review AI-generated content for its inevitable mistakes.

Unless the bosses of the world wise up to the limitations of AI (or unless they're reined in by the law), we'll be left with mass burnout, an increased sense of precarity in the workforce *and* a world swimming in unintelligible AI-generated pablum (or, to use the technical term, slop).

People often think that technological advances can be willed into existence: that we'll eventually get there if we just keep plugging away, throwing more money at the same technology for long enough. The reality is, though, that technology isn't magic and there are some obstacles that it can't overcome. That's one reason why it's so dangerous to build an abundance-style policy agenda around the assumption that technological advances will inevitably solve our problems if we just let Silicon Valley forge ahead unhindered.

The problems with finance

There are a lot of different reasons why bosses and everyone else get sucked in by unrealistic and uninspiring tech promises. Dreams of profits certainly come into play – hardly a day goes by that I'm not reminded of Upton Sinclair's [quote](#) “it is difficult to get a man to understand something when his salary depends on his not understanding it.” But when dealing with complex technology, another important factor is the “bullshit asymmetry principle.” It's also referred to as Brandolini's Law, because it was coined on Twitter by Italian computer programmer Alberto Brandolini, but I think “bullshit asymmetry principle” is more fun to say and so I will stick with it. The [principle](#) stipulates that “the amount of energy needed to refute bullshit is an order of magnitude bigger than to produce it.” We all can and should listen to our inner skeptic when we hear too-good-to-be-true

promises from the tech industry – or if we hear them promise something and our reaction is “huh, why would I want that?” – but to systematically debunk those promises often requires a great deal of expertise. Finance is my domain of expertise, and that’s why this book focuses on the unrealistic promises that Silicon Valley has made to fix finance. Fortunately, in addition to being my area of expertise, finance is a particularly good field in which to showcase techno-solutionism in the wild.

Venture capital investors have thrown a ton of money at fintech startups notwithstanding that fintech’s track record is very, very mixed. In addition to FTX’s Bankman-Fried and Alameda’s Ellison, two other young fintech founders have made Forbes’ 30 Under 30 “hall of shame:” Charlice Javice, founder of a student financial aid platform called Frank, and Lucas Duplan, founder of payments rewards startup Clinkle. For those keeping score at home, fintech is therefore responsible for four out of ten of the most disgraced young founders from the last 13 years or so. But as I mentioned in the introduction, I’m less interested in the outright fintech frauds than I am in the more subtle grift of fintech industry claims that technological solutions can fix our financial system.

So many fintech sales pitches talk about making financial transactions as easy as sending a photograph or email – but losing money is a much bigger deal than losing a photograph or message. The stakes are high, and so techno-solutionism’s harms quickly come into sharp relief in this arena. And because the stakes are so high, finance has always been highly regulated: the rise of fintech therefore provides an excellent illustration of how Silicon Valley’s profit can come from manipulating the

surrounding legal environment, rather than from technological superiority.

In short, debunking the tech industry's promises to fix finance is a great way to demonstrate more broadly how dangerous techno-solutionism can be. But what exactly is fintech? The word “tech” has a vibe that is different and more specific than the broader universe of technology we rely on in our everyday lives – [broadly conceived](#), technology includes tools ranging from knives to roads to heaters that have become so commonplace that we often fail to appreciate them. The shorter version – “tech” – has a more specific feel these days. It tends to call to mind things invented in the post-internet (or at least the post-personal computer) era, and it's closely associated with Silicon Valley.

“Fintech” similarly means something more specific than the use of technology to provide financial services, which is long-standing and pervasive. The double-entry book-keeping system is an example of a critically important technology of finance, and it was widely used by [Italian merchants](#) in the 13th and 14th centuries. Even if we limit our focus to computer-based technologies, these have been an integral part of the financial services business since the 1970s. But the word “fintech” is usually used to describe the new wave of Silicon Valley-style financial service businesses that proliferated after 2008.

Fintech's foundational technologies include things like smartphones, blockchain, and AI. Some of these technologies work well, others (I'm looking at you blockchain) often aren't fit for purpose. Technologies are just tools, however, and the ability of even well-designed technological tools to solve problems will

depend on how they are deployed. The next few chapters will look at a range of different fintech business models, including fintech lending, fintech banking, stock trading apps, buy-now-pay-later, earned-wage access programs – and of course, crypto. Some of this fintech is occasionally useful, but this book will dissect much hyped claims about fintech’s ability to improve financial inclusion, efficiency, competition, and security, and – spoiler alert – find that that the reality is often very different. That doesn’t mean these over-hyped solutions will be unprofitable for the industry – only that their profits won’t be a win-win, that their costs and other harms are (or will be) borne by the rest of us.

As a starting point for this debunking exercise, though, we need to understand what traditional finance is meant to do, and who it is supposed to do it for. Importantly, we also need to know where it fails to deliver, where the pain points are. There are lots of ways to think about these issues, but broadly speaking, the financial system does three useful things for society. First, it facilitates capital formation, which is fancy way of saying it connects people who have money and want to earn a return with those who need money to produce things and are willing to pay for that money. Second, the financial system allows people to manage risk: this can range from providing insurance products to providing ways to grow wealth (because wealth is its own kind of insurance against future uncertainty). Third, it provides the plumbing for payments and other kinds of financial transactions.

In addition to allowing individuals to prosper, these financial services collectively help the broader economy to grow, and the financial system also provides a channel for central banks like the Federal Reserve to engage in monetary policy (we’ll talk more about this later, but to oversimplify for now, central banks

use the banking system to help them match the supply of money in the economy to the economy's needs). These socially useful functions provide the "quid pro quo" justification for the many benefits and subsidies that financial institutions receive from the government, including things like deposit insurance and – when things go south – bailouts. But over time, many of the products and services offered by the financial industry have become further and further removed from these core functions of capital formation, risk management, transaction processing, and channeling monetary policy. If we judge our financial industry not by the profits it generates for its employees and shareholders, but by its ability to deliver on these core functions, then we can see many ways in which finance is failing us.

History is littered with examples of financial intermediaries who have abused the trust placed in them. To pluck just a couple from recent memory, there's [Wells Fargo's fraudulent account opening scandal](#) and [Bernie Madoff's Ponzi scheme](#). Bad apples are not the only problem, though; there are also systemic problems with our financial system. Sometimes, an entire category of financial products marketed to people to help manage their risks (like high-interest payday loans) can end up leaving users worse off than before. Capital formation can also lose its way: if it becomes less about channeling funds to productive enterprises and more about speculative gambling, then it devolves into social deadweight. And occasionally, too much consumer exploitation and financial speculation can combine into a conflagration that devastates the broader economy that the financial industry was supposed to support.

A quick and dirty primer on the 2008 financial crisis

To really understand the rise of fintech, it helps to understand the 2008 global financial crisis that set the scene for it. These days, I teach law students who were children when that crisis occurred, so it's probably helpful to provide a quick refresher on how the financial industry imploded back in 2008. Although that crisis had been brewing for several years, most people didn't appreciate what was going on as it unfolded; they were too distracted by the booming economy of the mid-2000s. I was working in the finance group of a New York law firm at that time, and we were so busy that I learned to never go to the bathroom without taking a notepad. More than once, I received instructions from a senior colleague from the next cubicle (and yes, I appreciate that that's gross).

The mortgage market started to implode in 2007 and the investment bank Bear Stearns failed in March of 2008, but that barely seemed to dampen the pace. The financial industry and their lawyers were Wile E. Coyote-ing, able to keep running in mid-air so long as they didn't look down. Ultimately, it was the weekend of September 13-14, 2008 that shattered any illusions that all was well – a weekend now referred to as “Lehman weekend,” because that's when it became clear that the storied investment bank Lehman Brothers would fail.

I still remember where I was during the pivotal Sunday afternoon of that weekend – and that was stuck on a stalled Amtrak train, just outside of New Rochelle, New York. While the train itself wasn't moving, the car I was in was vibrating with anxiety and the sounds of thumbs clacking across tiny Blackberry keyboards (yes, kids, this was still the era of Blackberry devices).

iPhones existed, but most businesses were still leery about their employees accessing work emails from personal smartphones). The little red light on my Blackberry kept flashing as I was assigned to work on one deal, and then another, and then another, as different proposals for mergers were trotted out in rapid succession to try and save cratering financial institutions. I vividly recall the guy in the seat in front of me, who identified himself as a JPMorgan derivatives trader, trying to pry open the train window and climb out to get to a trading floor. He didn't succeed.

Despite the frenzied weekend attempts to rearrange the deck chairs on the Titanic, Lehman Brothers filed for bankruptcy on Monday morning and a global financial panic was unleashed. Fast forward to 2010, and I was working with the staff of the [Financial Crisis Inquiry Commission](#) on their investigations into the causes of the 2008 crisis. Fifteen years later, I'm still researching financial crises and how we might prevent them. Later in this book, we'll talk about how crypto and other fintech are setting us up for a future financial crisis, but for now, let's keep looking back at the 2008 crisis. The financial engineering that produced that crisis was dressed up in the rhetoric of innovation and efficiency (rhetoric that bears more than a passing resemblance to the promises of innovation and efficiency that emanate from Silicon Valley today, but I'm getting ahead of myself). At the root of it all, though, were the mortgages.

Policymakers in the United States have long focused on home ownership as the path to wealth and the American Dream, and low interest rates implemented after the dot-com bubble bust coupled with increasing financial deregulation (in the name of unleashing efficiencies by getting pesky legal impediments out of

the way) set the scene for rapid growth in the mortgage market in the early 2000s. Mortgage debt in the United States more or less [doubled](#) between 2001 and 2007: in a feedback loop, the demand for mortgages inspired the financial industry to start cooking up ways of turning mortgage debt into tradeable financial products (a.k.a. financial innovation), and then the appetite for those tradeable financial products generated incentives for lenders to keep making more mortgage loans – even to borrowers who might not have been able to pay them back.

The result was huge growth in the subprime mortgage market (in the movie [The Big Short](#), Margot Robbie drinks champagne in a bubble bath and explains “whenever you hear subprime, think ‘shit’” – thanks [Barbie](#)!). Some people have tried to portray subprime borrowers as the villains of this story, as people who lied and cheated to borrow money they shouldn’t have been entitled to. By and large, though, the subprime borrowers who were offered that ‘shit’ were victims too: victims of consumer abuses that weren’t reined in because financial regulators prioritized industry profitability over protecting consumers. I’ve already established that I take metaphors too far, and I’m going to lean into this one too: this turd was polished by painting the growth of the subprime mortgage market as a way of empowering homeowners who had traditionally been unable to get mortgages (particularly Black Americans and other racial minorities). Professor Keeanga-Yamahitta Taylor has since [coined](#) the term “predatory inclusion” to describe business models like these that include previously excluded marginalized communities, but exploit those marginalized communities in the process.

If you're wondering how it could be profitable to extend mortgage loans to people who might not be able to pay them back, some subprime mortgage lenders got comfortable by assuming that "housing prices always go up" – if lenders ended up having to foreclose on a defaulting subprime borrower, they thought they could always sell the house at a price that was higher than the amount of the loan. Other subprime lenders and the mortgage brokers they relied upon didn't even stop to care, because they didn't have any skin in the game. The expectation was that the mortgage loans would be immediately sold to some other financial institution to turn into a tradeable financial product. "I'll be gone, you'll be gone," they used to say, by the time things turn south. Some mortgage brokers were even paid extra "yield spread premiums" if they steered borrowers who could have gotten more traditional mortgages into subprime mortgages with higher interest rates.

In addition to high interest rates, subprime mortgages often had other features that exploited borrowers, although many of these didn't kick in until after a low-interest "honeymoon period" that lasted for the first few years. Many subprime borrowers had no idea how high their monthly repayments would be once the honeymoon was over – and this created a kind of cliff once housing prices started to fall nationwide and refinancing the old mortgage with a new honeymoon period was no longer an easy option. In 2006-7, borrowers started to default in record numbers. Because their mortgage loans had been packaged into complex financial products along with many other mortgage loans, there was limited flexibility to grant these homeowners modifications on their repayments. A mass foreclosure crisis ensued which disproportionately impacted [communities of color](#), and we're still feeling the ramifications in the mid-2020s (private

equity firms bought up a lot of the foreclosed properties on the cheap, arguably contributing to the current housing affordability crisis...but that's a story for another book).

There are three things I want to underline here. First, the contractual terms of the subprime mortgages were complex, making it hard for consumers to understand the risks they were getting into. Second, those terms were often rigidly enforced during the mortgage crisis, even though there were many situations where both the lender and the borrower would have been better off if the terms of the mortgage had been renegotiated. And finally, mortgages are the most familiar example of what is known as “leverage,” using borrowed money to increase your purchasing power. Leverage is great while housing prices are going up, because you can get a nice house with little money down *and* your return on your downpayment is multiplying. But if the house price falls, the borrower's small downpayment can be quickly wiped out and they can end up owing more than the house is worth.

Excessive amounts of complexity, inflexibility, and leverage are what went wrong on the ground with mortgages; they are also by and large what went wrong up in Wall Street's skyscrapers, turning problems in the mortgage market into a global financial catastrophe. Leverage was being deployed with abandon on Wall Street in the lead-up to 2008, although that leverage often took much more complex forms than a simple bank loan. In particular, entering into derivatives contracts (which are contracts that “derive” their value from something else) was a way for financial institutions to get practically unlimited exposure to the mortgage-backed financial products without actually purchasing the products themselves (these derivatives contracts

proliferated after Congress passed legislation in 2000 to “[remove impediments to innovation](#)” by forbidding their regulation). The underlying mortgage-backed financial products were also highly complex, which made figuring out their value – as well as the value of the related derivatives contracts – very challenging in the midst of a panic.

In addition to entering into derivatives, financial institutions also borrowed from one another to fund their investments, often promising to pay each other back overnight – which meant that the funding they relied upon could quickly disappear. Once the financial institutions that had invested in these complex mortgage-backed products started to panic about the quality of the mortgages that had been sliced and diced into them, some financial institutions could no longer use the products as collateral to borrow from their colleagues (at least, not to borrow the amounts they were used to and needed to keep functioning). That’s what happened to Lehman Brothers, which failed within a week.

As for the derivatives contracts that so many big banks had purchased to get exposure to mortgage-backed products without actually buying the products themselves, a lion’s share of those had been issued by the insurance giant AIG. The banks buying these derivatives had never thought that the mortgage-backed products might turn out to be risky, or that a firm like AIG might overcommit itself. And so they hadn’t initially asked AIG to provide much (or any) collateral to ensure it was good for any payouts it might need to make under the derivative contracts. As the mortgage market imploded, AIG was staring down counterparties demanding that it pony up collateral. But satisfying all of their margin calls would have tipped AIG into

insolvency – when I mentioned at the beginning of the chapter that Sam Bankman-Fried didn't understand the dangers of automated margin calls, this is one of the things I had in mind.

One thing to note is that here, at the tippy-top of the financial system where the largest financial institutions traded with one another, there was often a whole lot more grace, discretion, and flexibility than was available to subprime borrowers. Counterparties like Goldman Sachs came to the table and renegotiated with AIG instead of strictly enforcing margin call provisions that could have tipped AIG into bankruptcy as early as 2007. In 2008, the US government came through with a bailout for AIG to prevent it from failing – a failure that would have had serious ripples of consequences for Goldman Sachs and AIG's other big bank counterparties. Authorities in the US Treasury Department and the Federal Reserve feared that if any of *those* banks failed, the whole financial system would collapse, and so AIG was saved.

No one can really agree on how much the 2008-era bailouts actually cost the US government. MIT Professor Deborah Lucas [puts](#) the number at \$498 billion, for example, while ProPublica instead [reports](#) a government *profit* of over \$100 billion dollars. And it's almost impossible to estimate how much it would have cost the overall economy *not* to do bailouts. Personally, I am in the camp that thinks that bailing out Wall Street was the right thing to do. I think that if government intervention had not staunched the panic, we might very well have faced an economic depression that would have made life orders of magnitude worse for everyday people. As it was, retirement savings were decimated, and people lost their jobs as the economy cratered.

But while I agree that bailouts were necessary in 2008-9, I also understand why people were outraged by how they were structured. Relief had been extended to the largest financial institutions at a time when there was little grace available for people who missed their mortgage payments – many of whom had their homes unceremoniously foreclosed upon. There also weren't any real meaningful consequences for the financial institutions involved: while proposals were made at the time to break up the big banks or prohibit them from engaging in speculative investment activities, in the end, no fundamental structural changes were made to the financial industry. The reform we got, in the form of 2010's Dodd-Frank Act, made important fixes to financial regulation, but very few people think it went far enough to prevent a future financial collapse. It remains quite likely that the financial industry will keep taking outsized risks, and socializing the losses to the rest of us.

The rise of fintech

Given this history, it's no surprise that many people are hungry for their own ways to cut the big banks down to size – ideally, to get rid of the need for intermediaries altogether. I very much understand the appeal of a fintech alternative, at least superficially. In particular, I understand the knee-jerk embrace of anything that claims to be able to cut out the financial institution middlemen. But intermediaries are often unavoidable: as we'll see in the coming chapters, fintech's peer-to-peer lending soon became dominated by existing financial institutions; fintech banking can't survive without partnering with actual banks; and crypto soon developed powerful intermediaries of its own. There will always be situations where people don't have the time or the

ability to do something for themselves (life is busy and complicated, and we all need to outsource sometimes), and intermediaries will always be willing to step in when there is money to be made by doing so.

These are long-standing economic forces, and the existence of new technological tools is not going to fundamentally disrupt intermediation. The myth of fintech (particularly crypto) hurting the profitability of the big banks is often just that – a myth. Banks have found ways to acquire, partner with, and adopt fintech technology to entrench their own market share. Tech giants like Meta and Amazon *might* be in a position to disrupt traditional financial institutions and change who our financial intermediaries are, but there’s no reason to think they’ll treat us any better than the old financial intermediaries. As we’ll explore in Chapter 3, as much as we might not like the old guard, there’s some truth to the saying “better the devil you know.” And yet the unrealistic hope that “this time will be different” is just so tantalizing that many of us get sucked into stories about Silicon Valley disrupting and disintermediating finance for the greater good...

The period after the 2008 crisis was characterized not only by understandable distrust of traditional finance, but also by historically easy monetary policy. The Federal Reserve had zeroed interest rates to juice the economy after the 2008 crisis, and then did so again in 2020 as a response to the Covid pandemic – with standard and staid investments not producing much return, institutional and high net worth individual investors poured money into riskier investments like venture capital funds (colloquially known as “VC”) that might make them more money. That meant that the VC funds needed to go shopping for

startups...and fintech (particularly crypto) businesses were some of the hottest commodities.

We'll get into this in more detail later, but to provide a quick preview, VC [deal volume](#) began to increase in 2014 and then almost doubled between 2017 and 2018. It continued to grow at a reasonably steady pace until 2021, when US VC funds received a record-breaking influx of investment and funded a record-breaking number of deals – \$329.9 billion worth of deals to be precise (compared to \$166.6 billion worth of deals in the previous year). Eighteen percent of VC investment in 2021 went to fintech businesses, with crypto being the fastest growing sector among them, [according to](#) Silicon Valley Bank (before it failed in 2023, Silicon Valley Bank was the bank of choice for the VC industry and the startups they funded – you'll be shocked, shocked to hear that all of their accounts got bailed out upon the bank's failure).

VCs expect that a lot of their startup investments will end up worthless. This means that each VC fund needs to have a few home run startups in its portfolio that will deliver explosive growth before the fund closes (a period of roughly five or six years, once you factor in the fund's ten-year term and the time it takes to pick and sell off startups). Many VCs therefore seek out "solutions" that don't need a lot of research and development or physical plant – fintech certainly fits that bill, whereas biomedical and renewable energy solutions often don't.

Another notable feature of the VC model has been the tendency of VC-funded startups to take a "break-it-til-you-make-it" approach to the law. The rise of Uber is the most familiar illustration of this: Uber often didn't comply with local taxi

regulations until it had successfully lobbied to get those regulations changed. This is a very different mindset from what we typically see from the traditional financial industry. To be clear, there is a lot of financial regulation that the financial industry does not like, and the industry will lobby against and seek to engineer ways around that regulation – many of the complex mortgage-backed financial products that contributed to the 2008 financial crisis were created as a way to avoid banking regulation, for example. But as an industry that has long been highly regulated, finance by and large accepts that regulations are part of the landscape when it comes to providing financial services. The Silicon Valley vibe, on the other hand, is often more like “rules? What rules? I didn’t see any rules...”

Because the fintech “revolution” was in large part funded and guided by the VC industry, the result has been the confluence of two different sets of well-established economic incentives. The tendencies towards leveraged risk-taking and complexity that proved so toxic in 2008 didn’t go away, and now they are being turbocharged by the VC industry’s focus on short-term, explosive growth at all costs – even if it involves breaking the law. This has the potential to be a very dangerous combination, both for fintech customers and our economy at large.

And the dirty little secret is that the "secret sauce" for many of these fintech businesses is not their technology, but rather, their ability to avoid the laws that constrain the bad behavior of their competitors. Part of the reason they get away with this is that so many of us are enthralled by the shiny promise of new technological solutions. I already quoted you a little bit of the movie *The Big Short*, but here’s another little nugget that I

like. In describing the financial innovation that contributed to the 2008 crisis, it says:

It's pretty confusing right? Does it make you feel bored, or stupid? Well, it's supposed to. Wall Street loves to use confusing terms to make you think only they can do what they do. Or even better for you to just leave them the fuck alone.

If we sub out “excited” for “bored,” and “Silicon Valley” for “Wall Street,” that in a nutshell is how techno-solutionism succeeds in getting past laws that are intended to protect the public. But I’m getting ahead of myself. Laws and the VC industry and the magical power of “innovation” will be covered later in the book. Before we get to them, I want to engage in a good-ole-fashioned debunking of fintech’s over-hyped promises to fix our financial system.

So what exactly is fintech promising? I figured if I wanted fintech hype, I would get that hype in its purest form if I asked an AI tool to scour the internet for me and summarize the promises from the countless web pages touting fintech solutions. So I did what I would otherwise never do and asked ChatGPT to write something for me. In response to the prompt “how can fintech fix our financial system?,” here’s what I got:

Fintech (financial technology) has the potential to address several key issues within our financial system, improving efficiency, accessibility, transparency, and security. Here are some ways fintech can contribute to fixing our financial system:

1. Enhanced Financial Inclusion

Fintech can provide financial services to underserved populations, including those in remote areas or without access to traditional banking. Mobile banking, digital wallets, and microfinance platforms enable people to save, borrow, and transfer money without needing a physical bank.

2. Increased Efficiency and Lower Costs

Automation and advanced algorithms in fintech reduce the need for manual processes, thereby lowering operational costs and minimizing errors. This efficiency can lead to lower fees for consumers and faster transaction times.

3. Greater Transparency and Reduced Fraud

Blockchain technology and smart contracts can enhance transparency and security in financial transactions. By providing a tamper-proof ledger, blockchain can help reduce fraud and ensure the integrity of financial records.

4. Improved Customer Experience

AI and machine learning can personalize financial services, offering tailored advice and products to consumers. Chatbots and automated customer service platforms can provide 24/7 support, enhancing customer satisfaction and engagement.

5. Better Risk Management

Fintech solutions like predictive analytics and real-time monitoring can help institutions better manage risks. These technologies can identify potential issues before they become significant problems, improving the stability of the financial system.

6. Facilitation of Peer-to-Peer Transactions

Fintech platforms enable peer-to-peer (P2P) lending and payments, allowing individuals to lend to or pay each other directly without intermediaries. This can lower borrowing costs and provide more flexible financial solutions.

7. Increased Competition and Innovation

The rise of fintech startups fosters competition in the financial sector, encouraging traditional banks to innovate and improve their services. This competition can lead to better products and services for consumers.

8. Enhanced Regulatory Compliance

Regtech (regulatory technology) helps financial institutions comply with regulations more efficiently. Automated compliance monitoring and reporting can reduce the burden of regulatory adherence and lower the risk of non-compliance.

9. Access to Alternative Funding

Fintech platforms like crowdfunding and initial coin offerings (ICOs) provide alternative ways for startups and small businesses to raise capital. This diversifies funding sources and reduces dependency on traditional banks.

10. Data-Driven Decision Making

Fintech leverages big data and analytics to provide insights into consumer behavior and market trends. This data-driven approach can help financial institutions make more informed decisions and develop products that better meet customer needs.

Challenges and Considerations

While fintech offers numerous benefits, it also presents challenges such as data privacy concerns, cybersecurity risks, and the need for effective regulation. Ensuring that fintech solutions are inclusive, secure, and well-regulated is essential for their successful integration into the financial system.

To give credit where credit is due, ChatGPT is very good at uncritically rehashing hype – that’s a pretty exquisite spiel of fintech propaganda it spit out right there. But there’s a lot of horseshit lying therein, as we’ll start to explore in the next chapter...