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ECONNED

HOW UNENLIGHTENED SELF INTEREST UNDERMINED DEMOCRACY AND CORRUPTED CAPITALISM

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To my mother

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INTRODUCTION

> The great enemy of the truth is very often not the lie—deliberate, contrived, and dishonest—but the myth, persistent, persuasive, and unrealistic. Belief in myths allows the comfort of opinion without the discomfort of thought.
>
> —John F. Kennedy

In the early 1990s, one of my clients was the biggest securities firm no one had ever heard of. O'Connor & Associates was a proprietary derivatives trading business with over 750 employees. It was cutting edge on a number of fronts: an early entrant and then leader in equity and foreign exchange options, regularly accounting for 5% of New York Stock Exchange transaction volume in the course of hedging its options positions; a technology innovator, running the largest private Unix network in the world on sleek NeXT workstations; and an early adopter of a casual dress code when suits were still the norm in finance.

Based in Chicago, O'Connor had made a very good living doing statistical arbitrage, meaning it looked for often fleeting price disparities between what derivatives "ought" to be worth (the "theoretical price") and the prices on offer. But as these markets became more liquid, the profits on a typical transaction shrank, putting its entire business model into question. The firm decided to start pursuing trading with "customers," meaning end users like big corporations, pension funds, and substantial individuals.

The partner in charge of technology, Craig Heimark, a former index trader, noticed that some competitors like Morgan Stanley had found that their trading software was of little remaining value to them, and so were selling it to clients in an effort to make some extra money. Heimark felt this was not a good deal for the clients, since Morgan Stanley was not committed to providing upgrades and support for the programs. Heimark instead wanted to encourage O'Connor's clients to use the firm's own cutting-edge programs (with appropriate firewalls), an early version of what would now be called an application service provider. That way the clients would get upgrades automatically when O'Connor brought out new tools for its own use.

Even though this approach would create considerable loyalty and, with it, lucrative transactions, it would also make the clients feel more comfortable about using derivatives. Heimark and his fellow partners still had some doubts about this idea: "This stuff is really dangerous. They can blow themselves up with it." Indeed, their first client was interested precisely because it had just reported large foreign exchange losses on botched hedges. Giving a company like that more sophisticated tools without making sure it understood what it was doing would be like giving a bad driver a high performance car: The expected result would be a more spectacular wipeout.

O'Connor went to considerable lengths to ascertain whether its initial customers had a good enough understanding of their underlying business exposures to define their hedging needs well, and also made sure users invested in the needed training in derivatives. (O'Connor was recognized as a leader in teaching people how to trade options.)

That solicitious attitude was not limited to this project. I would regularly hear O'Connor partners inveigh against the markups their biggest competitor, Bankers Trust, would charge on their trades. One would think O'Connor would be delighted to have another firm set high prices, since that would give the Chicago firm the opportunity either to match them and earn similar egregious profits, or to undercut Bankers Trust and gain market share. But O'Connor as a firm was acutely aware that sharp practices could hurt everyone in the market by doing lasting damage to the image of derivatives: "They will burn customers. Those deals cannot work out with the edge [i.e., markup] they are putting on them."

Strange as it may seem now, that customer-oriented stance was not unheard of in finance. When a company or a salesman sets a price, that action means making a decision about the seller's interests versus the buyer's. An ambitious fee is obviously good for the vendor. But charging a lot on a regular basis will either encourage the customer to find cheaper options or, if he has limited alternatives, possibly damage his business. Smart reps will not kill the geese that lay the golden eggs. Many adopted the compromise that Goldman Sachs called "long-term greedy." Yes, a banker may take his client now and again, but an astute one will do it only when the client believes he is making money, or cannot easily tell he has been had.

O'Connor's user-friendly attitude soon became an anachronism. Big financial firms recognized that product complexity was their best friend, offering all sorts of hidden traps and snares by which they could take more money from unwitting clients. Big financial firms became increasingly inclined to prey on their customers and, ultimately, the societies in which they lived.

. . . . .

On one level, this book is about how largely unproved but widely accepted economic theories led to policies that produced the global financial crisis that began in 2007. On another level, it illustrates how ideologies establish and defend themselves even as evidence against them mounts.

Many of the analyses of the crisis have focused on description—how this disaster unfolded—or on lower-level mechanisms that played a meaningful role in its development. For instance, the media have given considerable play to the sourcing of subprime mortgages: the aggressive, often deceptive, actions of mortgage brokers; the hapless borrowers who signed up for more house than they could afford; the bad incentives that discouraged participants from looking too hard at the operations of the sausage factory of structured finance that turned loans of dubious quality into pristine AAA-rated instruments; the questionable conduct of rating agencies who were paid by the sponsors, who in turn needed high ratings to persuade buyers that this risky paper was a good investment. While this line of inquiry is instructive, it nevertheless misses the true drivers of this calamity.

George Santayana's maxim, "Those who cannot remember the past are condemned to repeat it," is invoked often precisely because it is so seldom heeded. A fragmented perspective on the past can be as dangerous as ignorance. If we understand the mechanisms behind the financial crisis only in an atomistic fashion, we will at best devise only partial remedies. Unless we examine the faulty logic that justified, nay endorsed, the practices that drove the financial system off the cliff, the odds are high that we will do it all over again, with only a few changes in the particulars. We need to look not just for symptoms but also underlying causes.

John Maynard Keynes, a seminal Cambridge University economist active during both World Wars, once noted:

> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be exempt from any intellectual influences, are usually the slaves of some defunct economist.[1]

Accordingly, the causes of this financial crisis should not be sought merely among the actions of particular individuals and companies, but also among the ideas that made it possible. Most important were beliefs about markets and how they operate—in a phrase, economic theories. Anyone who has worked in markets, be it for art, bonds, corporate acquisitions, commodities, and, particularly, O'Connor's high-octane world of derivatives, knows they have a dark side. Heimark and his partners understood all too well that in markets power prevails and the trusting are often fleeced.

Yet modern economists have, by and large, succeeded in becoming oblivious to practically every imperfection marring supposedly "free" markets.

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In 1776, Adam Smith published *The Wealth of Nations*. In it, he argued that the uncoordinated actions of large numbers of individuals, each acting out of self-interest, sometimes produced, as if by "an invisible hand," results that were beneficial to broader society. Smith also pointed out that self-interested actions frequently led to injustice or even ruin. He fiercely criticized both how employers colluded with each other to keep wages low, as well as the "savage injustice" that European mercantilist interests had "commit[ted] with impunity" in colonies in Asia and the Americas.

Smith's ideas were cherry-picked and turned into a simplistic ideology that now dominates university economics departments. This theory proclaims that the "invisible hand" ensures that economic self-interest will *always* lead to the best outcomes imaginable. It follows that any restrictions on the profit-seeking activities of individuals and corporations interfere with this invisible hand, and therefore are "inefficient" and nonsensical.

According to this line of thinking, individuals have perfect knowledge both of what they want and of everything happening in the world at large, and so they pass their lives making intelligent decisions. Prices may change in ways that appear random, but this randomness follows predictable, unchanging rules and is never violently chaotic. It is therefore possible for corporations to use clever techniques and systems to reduce or even eliminate the risks associated with their business. The result is a stable, productive economy that represents the apex of civilization.

This heartwarming picture airbrushes out nearly all of the real business world. Yet uncritical allegiance to these precepts over the last thirty years has produced a world in which corporations, especially in finance, are far less restricted in their pursuit of profit. We show in this book how this lawless environment has led the financial services industry to pursue its own *unenlightened* self-interest. The industry has become systematically predatory. Employees of industry firms have not confined their predation to outsiders; their efforts to loot their own firms nearly destroyed the industry and the entire global economy. Similarly destructive behavior by other players, often viewed through a distorted lens that saw all unconstrained commercial behavior as virtuous, added more fuel to the conflagration.

Some economists have opposed this prevailing ideology; indeed, comparatively new lines of inquiry focus explicitly on how economic actors can fool themselves or others into making poor, even destructive, choices.

But when the economics profession has used the megaphone of its authority to dominate discussions with policymakers and the public, it has spoken with one voice, and the message has been the one described here. We therefore confine our criticism to these particularly influential ideas.

Theories that fly in the face of reality often need to excise inconvenient phenomena, and mainstream economics is no exception. Idealizing the rational aspects of business decisions means refusing to notice behavior that is predatory, destructive, criminal, or simply stupid. Believing that risk is manageable through mechanical systems has required not just unrealistic assumptions but also willful blindness to clear signs of danger.

We offer here another point of view. This book lays bare both the actions leading to the credit crisis and the economic constructs that defended, facilitated, and even exacerbated this behavior. Our case makes clear that if our economic system is to harness the self-interest of individuals to achieve the general good, it must be supervised within a democratic society and responsive to criticism by outside voices of those who are unafraid to think independently.

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In this book, I have sought to explain to the lay reader how the widespread adoption of largely unproven (or in some cases, disproven but nevertheless widely used) economic theories produced the financial crisis that began in 2007. Nearly all of their flaws have been described by economists and most are well known within the discipline. Yet these problems have been dismissed as inconsequential or merely inconvenient.

The most common retort is that economics "works," that it provides sound policy prescriptions. This book will demonstrate that this defense is patently untrue. Sweeping changes, backed only by the unsupported beliefs of the neoclassical loyalists, resulted in indifference to rising levels of indebtedness, greater and greater risk taking by financial intermediaries and consumers, and more and more frequent financial crises, finally culminating in the global debacle. With the financiers who caused the pile-up still in the driver's seat, along with most of the actors who designed the failed policies, an extensive, costly safety net has been deployed under the financial system, while no one has been forced to account for what happened.

We now have a financial system that is not only spectacularly predisposed to train wrecks, but will be very difficult to put on a sounder footing, absent a far more radical restructuring than anyone appears willing to undertake at this juncture. Few people in authority seem ready to accept that the seeming free lunch of burgeoning debt levels is over. Any move to healthier practices will result in more costly and less readily available credit.

We need to implement economic policies that treat finance as the handmaiden of commerce, not its master. This task is made even more difficult by the wealth and power that the banking interests now possess as a result of the radical "free markets" policy program. With the financial services industry and its lobbyists even more influential than before, thanks to even greater state support for their gambles, the stage has been set for continued plutocratic land grabs and economic crashes.

This book takes a critical look at the foundations of the ideology of "free markets" and then explores how this world view came to drive government action. It sets forth how the resulting macroeconomic policies led to the use of higher, ultimately unsustainable levels of borrowing in order to compensate for flagging growth in worker incomes. At the same time, deregulation led to structural changes in the financial services industry that not only made it less stable but also predatory, fixated on its own profits rather than on serving customers or the broader society.

As a result, this work takes a broad historical sweep. It first looks at how developments in economic thinking, primarily in the 1940s through the 1980s, translated into new policy initiatives from the 1970s onward that set the stage for the current crisis. In particular, chapter 2 reviews key methodological choices, made in the discipline of economics in the 1940s and 1950s, that over time redefined what it meant to be an economist, or at least a respectable mainstream member of the discipline. Chapter 3 discusses the development of financial economics, a separate subdiscipline that came to dominate how investments and risks are managed. It also shows how those same approaches depict financial markets as far less risky than they really are. Chapter 4 discusses the considerable shortcomings of the neoclassical paradigm, the wellspring of the "free markets" ideology.

Chapter 5 reviews how the distorted "free markets" popularization was marketed aggressively, and how it failed abysmally when implemented in Chile and Russia.

Chapter 6 describes how deregulation of financial services led to a rapid rise in predatory behavior. Chapter 7 sets forth how major capital markets players are now engaged in large-scale looting, in which an excessive short-term focus, aided by pliable accounting and lax regulation, leads them to value executive and staff bonuses over the health of the enterprise. Chapter 8 covers how the new "unfettered markets are always best" policies perversely resulted in both destabilizing global imbalances and an interventionist posture in the Federal Reserve under Alan Greenspan, which ran to the assistance of financial markets, encouraging more risk taking.

Chapter 9 discuses the growth of the shadow banking system, a cluster of largely unregulated financing activities, and how it imploded. Chapter 10 describes how current financial reform proposals are far too accommodating to the industry responsible for the global crisis, and sets forth a more tough-minded program.

The argument goes into a bit of technical detail at points in the interest of accuracy, but I hope I have broken the issues down sufficiently to make them informative and instructive to generalists. These sections are found mainly in chapter 2, which discusses the use of mathematics and models in economics, and in chapter 3, on financial economics.

We can no longer afford to genuflect before a failed orthodoxy. It falls to us to challenge the economics discipline's authority and demand ideas that tell us something about the real world. When we have found the courage to do so, we will also have a chance to frame practical, sane, and decent policies. I hope that this book will contribute to that effort.

CHAPTER 1

THE SORCERER'S APPRENTICES

> History is the long and tragic story of the fact that privileged groups seldom give up their privileges voluntarily.
>
> —Martin Luther King

It was January 2007, and the Great Moderation was in full swing. Economic policy makers and central bankers were congratulating themselves for creating an over two-decade period of long economic expansions and relatively mild downturns. Crises, severe recessions, nay, anything other than largely steady growth, were a thing of the past, with any hiccups due to events like the September 11, 2001 attacks, which were clearly outside economists' control.

As this paean illustrates, the economics profession looked upon its handiwork with great satisfaction:

> . . . we are living through one of the great transformations of modern history. Almost unnoticed, most of the industrialised world, especially the Anglo-Saxon part of it, has enjoyed a period of unprecedented economic stability. . . . The wild fluctuations of employment, output, inflation and interest rates have been firmly damped. . . .
>
> Economists are debating the causes of the Great Moderation enthusiastically and, unusually, they are in broad agreement. Good policy has played a part: central banks have got much better at timing interest rate moves to smooth out the curves of economic progress. But the really important reason . . . is the liberation of markets and the opening-up of choice that lie at the root of the transformation. The deregulation of financial markets over the Anglo-Saxon world in the 1980s had a damping effect on the fluctuations of the business cycle. These

> changes gave consumers a vast range of financial instruments (credit cards, home equity loans) that enabled them to match their spending with changes in their incomes over long periods. . . . The economies that took the most aggressive measures to free their markets reaped the biggest rewards.[1]

Yet the Great Moderation was, as bodybuilders describe steroid-abusers, a Cadillac body with a Chevy underneath. Its rate of expansion was lower than previous postwar growth phases. Inflation-adjusted worker wages had been stagnant. Dampened swings in the real economy were accompanied by more frequent and severe financial crises. The supposed better timing of central bank intervention merely led financial market participants to believe they could count on the authorities to watch their backs, encouraging more risk-taking. But perhaps the biggest danger was that blind faith in the virtues of markets converted regulators from watchdogs into enablers.

The very few economists who recognized that the vital signs were moving into danger zones and tried to alert officials were rebuffed. For instance, Yale's Robert Shiller (of *Irrational Exuberance* and S&P/Case-Shiller Index fame), recounted how, as a member of the economic advisory panel to the Federal Reserve Bank of New York, he had to soft-pedal his concerns about the developing real estate bubble:

> In my position on the panel, I felt the need to use restraint. While I warned about the bubbles I believed were developing in the stock and housing markets, I did so very gently, and felt vulnerable expressing such quirky views. Deviating too far from consensus leaves one feeling potentially ostracized from the group, with the risk that one may be terminated.[2]

Shiller gave more pointed warnings in 2005 to the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation, both bank regulators, urging them to impose tougher mortgage lending standards. He was brushed off.

The Yale economist believed his views were rejected because they were based on the theories of behavioral economics, a new branch within economics that looks at how people behave when presented with various economic choices, a real-world perspective notably absent in orthodox theory. In his words, "Behavioral economists are still regarded as a fringe group by many mainstream economists."[3]

But Shiller's views conflicted with conventional thinking in a more profound way. Remember, the profession had succeeded, since the 1970s, in transforming policies to conform with the view that unfettered markets were the royal road to prosperity. The touted Great Moderation was taken as a triumphal confirmation of the mainstream's collective wisdom. If this supposed success proved to be mere Potemkin prosperity, a facade masking an underlying deterioration, then it would call the credibility of much of the work in the discipline into question.

Shiller sounded alarms before the most toxic phase of mortgage lending started, in the second half of 2005, early enough to have contained the damage. Another warning was dismissed in August 2005, at the Federal Reserve's annual Jackson Hole conference, an end-of-summer gathering at the resort area in Wyoming for Fed officials and elite economists. It was the last of these forums chaired by Alan Greenspan. The participants were throwing verbal bouquets at the retiring Fed chief, with one notable exception.

The former chief economist at the International Monetary Fund (IMF) Raghuram Rajan presented a paper, "Has Financial Development Made the World Riskier?"[4] His conclusion was "yes." Rajan had set out to establish that the financial innovations during Greenspan's tenure had increased safety. But the further he dug, the more troubling evidence Rajan found of bad incentives encouraging undue risk taking. One was the burgeoning market in credit default swaps, a relatively new product that allowed investors to buy or sell insurance against the possibility that a borrower would go bust. The sellers were massively undercapitalized, which meant that the insurance might be worthless. The result was a financial system in danger of a meltdown due to widespread holdings of high-octane, high-risk product.

Rajan met withering criticism and was dismissed as a financial Luddite. Yet two years later, when the crisis he predicted began to unfold, Fed presidents began citing that very paper in their speeches.[5]

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Not everyone was a true believer. Some could see the signs of the coming storm. For instance, Gillian Tett of the *Financial Times* was so alarmed by a flurry of e-mails from readers that she did something unorthodox. She wrote them up.

The troubling messages arrived in January 2007, the same month as the self-congratulatory assessment of the state of the global economy quoted at the start of the chapter. By contrast, Tett, a seasoned capital markets editor, had just published a story on a question that nagged at her: was growth in the murky, mushrooming world of structured finance distorting lending?

Structured finance was the latest flavor of "securitization," a technique of using loans as the foundation for investments (see "A Primer on Structured Finance," pages 12–13). This process, which started in the 1970s, meant that banks no longer held most loans to maturity. After it made loans, a bank often sold them to a packager, usually an investment bank, which performed its financial wizardry and offered the resulting particular pieces of the deal to eager buyers. This process is sometimes called the "originate and distribute" model.

A newly popular, complex structured finance product, collateralized debt obligations (CDOs), had grown explosively since 2004. The concern was that CDOs allowed borrowers to continue to get cheap funding even when central banks like the U.S. Federal Reserve were trying to choke it off.[6]

What caught Tett's attention was the tone of the e-mails she received in response to her structured credit musings. For instance:

> I have been working in the leveraged credit and distressed debt sector for 20 years . . . and I have never seen anything quite like what is currently going on. Market participants have lost all memory of what risk is and are behaving as if the so-called wall of liquidity will last indefinitely and that volatility is a thing of the past.
>
> I don't think there has ever been a time in history when such a large proportion of the riskiest credit assets have been owned by such financially weak institutions . . . with very limited capacity to withstand adverse credit events and market downturns. . . .
>
> The degree of leverage at work . . . is quite frankly frightening. . . . Very few hedge funds I talk to have got a prayer in the next downturn. Even more worryingly, most of them don't even expect one.[7]

And the leverage, which is the degree to which an investor or business uses borrowed money, was stunning. A hedge fund might borrow a dollar for every dollar invested, not terribly aggressive in that world.

But a fair portion of that hedge fund's money did not come directly from wealthy individuals and institutions like insurance companies, but via funds of funds, entities that invested in multiple hedge funds. The theory was that the fund of funds manager would make an expert assessment and select a good mix. But many of those fund of funds borrowed money, often three dollars for every one invested, to make their returns look better and compensate for the additional layer of fees.

Now suppose the underlying hedge fund invested in the riskiest layers of a structured credit deal, say a collateralized debt obligation that could be effectively geared nine times, meaning it behaved as if it had nine dollars of debt for every dollar of equity. As one of Tett's sources explained:

> Thus every €1m of CDO bonds [acquired] is effectively supported by less than €20,000 of end investors' capital—a 2% price decline in the CDO paper wipes out the capital supporting it.

A PRIMER ON STRUCTURED FINANCE

Once upon a time, investors had comparatively few moneymaking options: stocks, corporate and government bonds, and money market investments, like certificates of deposit.

Traditionally, if a large company wanted to borrow money for a long period of time, say ten years, it would sell bonds to investors. Bonds are a promise to pay interest, typically every six months, and to repay the amount borrowed (the "principal") on a specified date. Investors such as life insurance companies and pension funds liked bonds because it was clear how much money they would receive and when. These companies needed to be prepared to pay out money in the future (for instance, life insurance companies needed to make payments when there was a death), and often they could use statistics to get a fairly good idea of what their future obligations looked like. The predictability of bonds meant that these investors could use them to match their predictable cash flows with what they expected to have to pay out down the road.

In that simpler world, the big risks of owning bonds were credit risk (that borrowers would go belly-up and fail to make the expected payments) and interest rate risk (a bond with a coupon of 6% looks like a good deal when inflation is at 3%, but if inflation rises to 7%, investors will want a higher rate of interest to compensate for the faster erosion in the value of their money. That means bonds that don't pay a high enough interest rate will fall in price).

Both interest rate volatility and the fact that investment banks were interested in selling new financial products helped fuel the growth of structured finance. As oscillations in interest rates created serious risks for commercial banks, they became receptive to the idea of selling the mortgages and credit card loans they had originated to third parties, thereby reducing their exposure to interest rate swings.

However, what is appealing for the seller (or "issuer," which in this case is the commercial bank) isn't so hot for the buyer (the investor). Those old-fashioned bonds were predictable. Mortgage payments are much less so. Homeowners can decide to pay off their mortgages early, and the resulting uncertainty is called "prepayment risk." Some prepayment risks are fairly predictable, like those due to death and relocation. But prepayments also occur when homeowners refinance their mortgages due to a drop in interest rates. Not only are interest rate changes difficult to anticipate, but a security that pays off when interest rates fall is intrinsically unattractive to investors (bonds usually rise in price when interest rates decline, but here the borrowers, when they refinance, take your profit away from you).

Of course, on Wall Street, anything can be solved by price, so some investors would accept these unattractive features if these new mortgage-backed securities paid enough extra interest. But what broadened the market considerably for this sort of paper (a term used in finance for stocks, bonds, and other financial instruments) was tranching.

Rather than have all investors exposed to the vagaries of these payments, some could buy more tailored products that relied on the underlying loan payments, in this example, from mortgages. Rather than buy the right to get a simple pass-through of mortgage payments, an investor can choose among different classes of participation, say A, B, and C. Class A is promised a certain interest rate, lower than what the pool of mortgages is expected to pay. But the Class A investor gets first dibs. All the money coming in is first allotted to him, and only when he has gotten his cut does Class B get any money. Class B gets a higher interest rate for agreeing to stand behind Class A. Class C gets what's left. Most deals have more layers and much more complexity, but the general premise is the same.

From asset-backed securities like these, investment banks then constructed resecuritizations called collateralized debt obligations (CDOs). CDOs can contain a dog's breakfast of assets, including whole corporate or mortgage loans and equipment leases. But a big component of pools behind these instruments is typically pieces of other asset-backed deals, almost always the high-yielding layers (for instance, if there were Classes A through E, the CDOs would typically take the "mezzanine" C and D pieces). Because the mix of assets in each deal is different, each CDO had its own structure. That made the market murky and even harder for investors and regulators to understand.

Borrowing magnifies the impact of profit and loss: If you buy a house for $300,000, put up only 5% of the price and borrow the other 95% (20:1 leverage), then if the value of the house falls by more than just 5%, you lose your entire investment. But the seduction is that if the price increases a mere 5%, you double your money.

The razor-thin cushion against losses wasn't a risk just to the hedge funds, but also had wider ramifications for the credit markets. If the decay in CDO prices is big enough, the hedge and the fund of fund middlemen don't just deliver losses to their investors in their funds but can also partially default on the money borrowed, usually from one of the big investment banks active in that business, such as Goldman Sachs, Morgan Stanley, or the now defunct Bear Stearns. If the hedge funds were losing money on their CDOs due to a general worsening of conditions in that market, the investment banks would probably be taking losses directly on CDOs they held as trading inventory and speculative positions. And investment banks similarly funded those positions to a significant degree with borrowed funds.

It was a house of cards, a train wreck waiting to happen. The savvy players knew it was likely to end badly, yet with eager buyers and sellers, it seemed foolish to turn down the opportunity for profit.

And that was the right bet in January 2007. There was one last fat bonus year before the wheels really came off the financial system.

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Tett had been early to recognize the dangers of structured finance, particularly its hottest offering in the new century, collateralized debt obligations, and had sounded warnings two years before.

In 2005, Michael Gibson, the head of trading risk analysis for the Federal Reserve, remarked that perhaps as many as 10% of CDO investors did not understand the risks of the product.[8] Other comments at that time suggested that some of the most sophisticated investors in this product were out of their depth. For instance, Cynthia McNulty of Integrated Systems stated: "There is such a buzz about credit derivative products now that there are hedge funds getting into it without the requisite abilities."[9]

Indeed, regulators had been scrambling to get a handle on the market. Because CDOs were not reported to any authority and trades were arranged privately between a host of product peddlers and buyers, even the estimates of market size varied widely, with Thomson Financial pegging the total sold in 2004 at $120 billion, while J.P. Morgan put it at $366 billion. To put that in perspective, the low estimate of $120 billion exceeded the value of all the corporate bonds sold in Europe that year.[10]

Shortly after the Gibson comment, Tett weighed in with an eerily prescient take on the promise and dangers of this rapidly growing type of investment. She acknowledged the benefits but then turned to the downside. CDOs had been so successful at pulling funds into the credit markets that they were lowering interest rates on bonds, which gave investors false comfort. As prevailing yields fall, prices of outstanding bonds rise, so investors in bonds show profits. Thus, the success of early investors encouraged others to join the party.

But a good thing could go too far. While the falling yields for existing CDOs were a vindication to those who owned them, given their complexity, they had to offer higher income than so-called plain vanilla products, such as straightforward corporate bonds that carried the same credit rating. To compensate, banks were turning to more aggressive structures, often using riskier assets, to generate the higher income that was so alluring to investors. In other words, even as far back as 2005, the market was getting a frothy feel.

And Tett also noted:

> Meanwhile, the fact that CDOs disperse credit among multiple investors means that, if a nasty accident did ever occur with CDOs, it could richochet [*sic*] through the financial system in unexpected ways.[11]

As we will discuss in detail later, that is precisely what came to pass.

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The signs of trouble became more and more evident as 2007 progressed. A reader of the *Financial Times* would have seen not just Tett's warnings, but ample evidence of superheated activity in other markets, such as takeover lending. Even the *FT*'s measured chief economics editor, Martin Wolf, not the sort to make market calls, warned in March 2007 that equities globally were substantially overvalued by historical standards.[12]

Yet later that March, two months after Tett replayed market participants' alarms about leverage, the then president of the Federal Reserve Bank of New York, Timothy Geithner, gave a largely comforting speech on credit market innovation.

The New York Fed is not merely the biggest of the twelve regional Federal Reserve Banks, but, more importantly, it is responsible for implementing Federal Reserve policy through the trading desks of the New York Fed. By virtue of his location and role, the head of the New York Fed is in regular contact with

Wall Street and presumed to be particularly knowledgeable about market conditions. And by this point, the subprime cloud was large enough to have merited official comment. The message from Geithner: its impact did not appear to be significant.[13]

In his remarks, Geithner set forth the concerns about the plethora of new complex financial products, but also noted that financial alchemy offered considerable advantages: more credit, better pricing, more choice for investors, and better diversification of exposures. He asserted that the past three decades of experience with financial innovation were reassuring. The growing pains had been manageable.[14]

Yet this seemingly evenhanded description gave plenty of cause for pause. First, Geithner pointed out that banks, the credit-providers that are most closely regulated, held only 15% of the "nonfarm nonfinancial" debt outstanding (remember financial institutions lend to each other, so that is excluded when trying to measure debt that is important to the real economy). Thus, while the Fed has good information about what banks are doing, and can send in examiners when warranted, it had no idea what the biggest players in the credit markets, such as investment banks, hedge funds, sovereign wealth funds, and Tett's increasingly edgy European investors buying U.S. products, were really up to. Thus, Geithner was trying to assess the health of an elephant when he could scrutinize, at most, its leg.

So his argument boiled down to, "Our current structure and distribution of risks is outside the bounds of anything in financial history. We can conjure some arguments as to why this should be OK, and so far, it has been OK."

Second, Geithner claimed regulators were powerless:

> We cannot turn back the clock on innovation or reverse the increase in complexity around risk management. We do not have the capacity to monitor or control concentrations of leverage or risk outside the banking system. We cannot identify the likely sources of future stress to the system, and act preemptively to diffuse them.

Third, the Fed chief noted that companies weren't borrowing overmuch; in fact debt levels in the corporate sector were below recent norms. But that statement was misleading. Overall private sector borrowings had exploded, thanks to a debt-fueled consumer spending spree, and was over 180% of the Gross Domestic Product, markedly above the level at the onset of the Great Depression, 164%.[15]

How could the authorities ignore the dramatic growth in debt? Federal Reserve officials had fallen into classic bubble-era rationalizations. The Fed chairman, Ben Bernanke (who succeeded Greenspan in 2006), had dismissed concerns about rising consumer borrowings, noting that household assets were rising too.[16] But debt has to be serviced, which comes ultimately from income or the sale of property. With consumer savings rates approaching zero, the public was reaching the limits of how much debt it could support.[17]

In his speech, Geithner did warn that if things went badly, the outcome could be worse than in the stone ages of finance, when products were simple and markets less interconnected: "The probability of a major crisis seems likely to be lower, but the losses associated with such a crisis may be greater or harder to mitigate."

That statement is tame considering what actually came to pass.

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The initial eruption of the crisis, the failure of two Bear Stearns hedge funds in June 2007, seemed a mere intensification of subprime woes. Yet the vast majority of experts, including the Fed, expected the damage to be contained and less costly than the U.S. savings and loan crisis of the early 1990s.

But the outbreak turned virulent. The credit upheaval moved through four acute phases, each requiring increasingly extreme interventions. What seemed to be a peak event, "the mother of all bailouts," the rescue of Fannie Mae and Freddie Mac in early September 2008, merely set the stage for a broader unraveling, with the bankruptcy of Lehman Brothers, the sale of Merrill Lynch, and the unprecedented efforts to salvage the world's biggest insurer, American International Group, coming a mere week later. And that tidal wave was succeeded by a potentially even larger currency crisis. Banks in Europe, who had funded some of their balance sheets in dollars, were unable to renew these short-term loans as dollar interbank markets dried up. They tried borrowing in local currencies and exchanging them for dollars, effectively transferring the stress in the credit markets to the foreign exchange markets. The Federal Reserve provided dollar swap lines, which were foreign exchange facilities to other central banks, which in turn provided dollar-based loans to their home-country financial firms. These overseas central banks also provided emergency facilities of their own. It was effectively a global banking rescue.[18] Similarly, a run on emerging markets was stanched only by the U.S. offering unprecedented dollar swap lines to key countries and backing a new International Monetary Fund facility.

The extraordinary measures to stop the collapse, with facilities authorized to supply as much as $23.7 trillion in the United States,[19] failed to halt damage to the real economy. The wreckage continues. U.S. unemployment for August 2009 was nearly 10%, with higher levels expected.[20] U.S. household net worth fell