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THE GREAT DEPRESSION, THE GREAT RECESSION, AND THE USES—AND MISUSES—OF HISTORY

Introduction

THIS IS A book about financial crises. It is about the events that bring them about. It is about why governments and markets respond as they do. And it is about the consequences.

It is about the Great Recession of 2008–09 and the Great Depression of 1929–1933, the two great financial crises of our age. That there are parallels between these episodes is well known, not least in policy circles. Many commentators have noted how conventional wisdom about the earlier episode, what is referred to as "the lessons of the Great Depression," shaped the response to the events of 2008–09. Because those events so conspicuously resembled the 1930s, that earlier episode provided an obvious lens through which to view them. The tendency to view the crisis from the perspective of the 1930s was all the greater for the fact that key policy makers, from Ben Bernanke, chairman of the Board of Governors of the Federal Reserve System, to Christina Romer, head of President Barack Obama's Council of Economic Advisors, had studied that history in their earlier academic incarnations.

As a result of the lessons policy makers drew, they prevented the worst. After the failure of Lehman Brothers pushed the global financial system to the brink, they asserted that no additional systemically significant financial institution would be allowed to fail and then delivered on that promise. They resisted the beggar-thy-neighbor tariffs and controls that caused the collapse of international transactions in the 1930s. Governments ramped up public spending and cut taxes. Central banks flooded financial markets with liquidity and extended credit to one another in an unprecedented display of solidarity.

In doing so, their decisions were powerfully informed by received wisdom about the mistakes of their predecessors. Governments in the 1930s succumbed to the protectionist temptation. Guided by outdated economic dogma, they cut public expenditure at the worst possible time and perversely sought to balance budgets when stimulus spending was needed. It made no difference whether the officials in question spoke English, like Herbert Hoover, or German, like Heinrich Brüning. Not only did their measures worsen the slump, but they failed even to restore confidence in the public finances.

Central bankers, for their part, were in thrall to the real bills doctrine, the idea that they should provide only as much credit as was required for the legitimate needs of business. They supplied more credit when business was expanding and less when it slumped, accentuating booms and busts. Neglecting their responsibility for financial stability, they failed to intervene as lenders of last resort. The result was cascading bank failures, starving business of credit. Prices were allowed to collapse, rendering debts unmanageable. In their influential monetary history, Milton Friedman and Anna Schwartz laid the blame for this disaster squarely on the doorstep of central banks. Inept central bank policy more than any other factor, they concluded, was responsible for the economic catastrophe of the 1930s.

In 2008, heeding the lessons of this earlier episode, policy makers vowed to do better. If the failure of their predecessors to cut interest rates and flood financial markets with liquidity had consigned the world to deflation and depression, then they would respond this time with expansionary monetary and financial policies. If the failure of their predecessors to stem banking panics had precipitated a financial collapse, then they would deal decisively with the banks. If efforts to balance budgets had worsened the earlier slump, then they would apply fiscal stimulus. If the collapse of international cooperation had aggravated the world's problems, then they would use personal contacts and multilateral institutions to ensure that policy was adequately coordinated this time.

As a result of this very different response, unemployment in the United States peaked at 10 percent in 2010. Though this was still disturbingly high, it was far below the catastrophic 25 percent scaled in the Great Depression. Failed banks numbered in the hundreds, not the thousands. Financial dislocations were widespread, but the complete and utter collapse of financial markets seen in the 1930s was successfully averted.

And what was true of the United States was true also of other countries. Every unhappy country is unhappy in its own way, and there were varying degrees of economic unhappiness starting in 2008. But, a few ill-starred European countries notwithstanding, that unhappiness did not rise to the level of the 1930s. Because policy was better, the decline in output and employment, the social dislocations, and the pain and suffering were less.

Or so it is said.

Unfortunately, this happy narrative is too easy. It is hard to square with the failure to anticipate the risks. Queen Elizabeth II famously posed the question on a visit to the London School of Economics in 2008: "Why did no one see it coming?" she asked the assembled experts. Six months later a group of eminent economists sent the queen a letter apologizing for their "failure of collective imagination."

It is not as if parallels were lacking. The 1920s saw a real estate boom in Florida and in the commercial property markets of the Northeast and North Central regions of the United States to which early-twenty-first-century property booms in the United States, Ireland, and Spain bore a strong family resemblance. There was the sharp increase in stock valuations, reflecting heady expectations of the future profitability of trendy information-technology companies, Radio Company of America (RCA) in the 1920s, Apple and Google eighty years later. There was the explosive growth of credit fueling property and asset-market booms. There was the development of a growing range of what might politely be called dubious practices in the banking and financial system. There was the role of the gold standard after 1925 and the euro system after 1999 in amplifying and transmitting disturbances.

Above all, there was the naïve belief that policy had tamed the cycle. In the 1920s it was said that the world had entered a "New Era" of economic stability with the establishment of the Federal Reserve System and independent central banks in other countries. The period leading up to the Great Recession was similarly thought to constitute a "Great Moderation" in which business cycle volatility was diminished by advances in central banking. Encouraged by the belief that sharp swings in economic activity were no more, commercial banks used more leverage. Investors took more risk.

One might think that anyone passingly familiar with the Great Depression would have seen the parallels and their implications. Some warnings there indeed were, but they were few and less than fully accurate. Robert Shiller of Yale, who had studied 1920s property markets, pointed now to the development of what looked to all appearances like a full-blown housing bubble. But not even Shiller anticipated the catastrophic consequences of its collapse. Nouriel Roubini, who had taken at least one course on the history of the Great Depression in his graduate student days at Harvard, pointed to the risks posed by a gaping US current account deficit and the accumulation of US dollar debts abroad. But the crisis of which Roubini warned, namely a dollar crash, was not the crisis that followed.

Specialists in the history and economics of the Great Depression, it should be acknowledged, did no better. And the economics profession as a whole issued only muted warnings that disaster lay ahead. It bought into the gospel of the Great Moderation. Policy makers lulled into complacency by self-satisfaction and positive reinforcement by the markets did nothing to prepare for the impending calamity.

It may be asking too much to expect analysts to forecast financial crises. Crises result not just from credit booms, asset bubbles, and the wrongheaded belief that financial-market participants have learned to safely manage risk, but also from contingencies no one can predict, whether the failure of a consortium of German banks to rescue Danatbank, a German financial institution, in 1931; or the refusal of the UK Financial Services Authority to allow Barclays to bid for Lehman Brothers over a fateful weekend in 2008. Financial crises, like World War I, can arise from the unanticipated repercussions of idiosyncratic decisions taken without full awareness of their ramifications. They result not just from systemic factors but from human agency—from the vaulting ambition and questionable scruples of a Rogers Caldwell, who in the 1920s fashioned himself the J. P. Morgan of the South; or an Adam Applegarth, the sporty, hyperconfident young banker who launched Northern Rock, a formerly obscure British building society, onto an unsustainable expansion path. Their actions not only brought down the firms they headed but undercut the very foundations of the financial system. Similarly, had Benjamin Strong, the über-competent governor of the Federal Reserve Bank of New York, not passed away in 1928, or Jean-Claude Trichet not become president of the European Central Bank as the result of a Franco-German bargain in 1999, the conduct of monetary policy might have been different. Specifically, it might have been better.

It is similarly disturbing in light of the progressive narrative that policy was not more successful at limiting financial distress, containing the rise in unemployment, and supporting a vigorous recovery. The subprime mortgage market collapsed in mid-2007, and the US recession commenced in December of that year. Yet few if any observers anticipated how severely the financial system would be disrupted. They did not foresee how badly output and employment would be affected. The Great Depression was first and foremost a banking and financial crisis, but memories of that experience did not sufficiently inform and invigorate policy for officials to prevent another banking and financial crisis.

It may be that the very belief that bank failures were the key event transforming a garden-variety recession into the Great Depression caused policy makers to mistakenly focus on commercial banks at the expense of the so-called shadow banking system of hedge funds, money market funds, and commercial paper issuers. The Basel Accord setting capital standards for internationally active financial institutions focused on commercial banks.[1] Regulation generally focused on commercial banks.

Moreover, deposit insurance was limited to commercial banks. Because the runs by retail depositors that destabilized banks in the 1930s led to creation of federal deposit insurance, there was the belief that depositor flight was no longer a threat. Everyone had seen *It's a Wonderful Life* and assumed that a modern-day banker would never find himself in George Bailey's position. But $100,000 of deposit insurance was cold comfort for businesses whose balances were many times that large. It did nothing to stabilize banks that did not rely on deposits but instead borrowed large sums from other banks.

Nor did deposit insurance create confidence in hedge funds, money market funds, and special purpose investment vehicles. It did nothing to prevent a 1930s-like panic in these new and novel parts of the financial system. Insofar as the history of the Great Depression was the frame through which policy makers viewed events, it caused them to overlook how profoundly the financial system had changed. At the same time that it pointed them to real and present dangers, it allowed them to overlook others.

Specifically, it allowed them to miss the consequences of permitting Lehman Brothers to fail. Lehman was not a commercial bank; it did not take deposits. It was thus possible to imagine that its failure might not precipitate a run on other banks like the runs triggered by the failure of Henry Ford's Guardian Group of banks in 1933.

But this misunderstood the nature of the shadow banking system. Money market mutual funds held Lehman's short-term notes. When Lehman failed, those money funds suffered runs by frightened shareholders. This in turn precipitated runs by large investors on the money funds' investment-bank parents. And this then led to the collapse of already teetering securitization markets.

Officials from US Treasury Secretary Henry Paulson on down would insist that they had lacked the authority to lend to an insolvent institution like Lehman Brothers, as well as a mechanism to smoothly shut it down. Uncontrolled bankruptcy was the only option. But it is not as if Lehman's troubles were a surprise. Regulators had been watching it ever since the rescue of Bear Stearns, another important member of the investment-banking fraternity, six months earlier. The failure to endow Treasury and the Fed with the authority to deal with the insolvency of a nonbank financial institution was the single most important policy failure of the crisis. In 1932 the Reconstruction Finance Corporation, created to resolve the country's banking problems, similarly lacked the authority to inject capital into an insolvent financial institution, a constraint that was relaxed only when the 1933 crisis hit and Congress passed the Emergency Banking Act. Chairman Bernanke and others may have been aware of this history, but any such awareness did not now change the course of events.

In part, this policy failure was informed by the belief, shaped and distorted equally by the lessons of history, that the consequences of a Lehman Brothers failure could be contained. But it also reflected officials' concern with moral hazard—with the idea that more rescues would encourage more risk taking.[2] Owing to their rescue of Bear Stearns, policy makers were already being raked over the coals for creating moral hazard. Allowing Lehman Brothers to fail was a way of acknowledging that criticism. Liquidationism—the idea, in the words of President Hoover's Treasury Secretary Andrew Mellon, that failure was necessary to "purge the rottenness out of the system"—may have fallen out of favor owing to its disastrous consequences in the 1930s, but in this subtler incarnation it was not entirely absent.

Finally, policy makers were aware that any effort to endow Treasury and the Fed with additional powers would be resisted by a Congress weary of bailouts. It would be opposed by a Republican Party hostile to government intervention. Ultimately, a full-blown banking and financial crisis would be needed, as in 1933, for the politicians to act.

It was at this point, after Lehman Brothers, that policy makers realized they were on the verge of another depression. The leaders of the advanced industrial countries issued their joint statement that no systematically significant financial institution would be allowed to fail. A reluctant US Congress passed the Troubled Asset Relief Program to aid the banking and financial system. One after another, governments took steps to provide capital and liquidity to distressed financial institutions. Massive programs of fiscal stimulus were unveiled. Central banks flooded financial markets with liquidity.

Yet the results of these policy initiatives were decidedly less than triumphal. Postcrisis recovery in the United States was lethargic; it disappointed by any measure. Europe did even worse, experiencing a double-dip recession and renewed crisis starting in 2010. This was not the successful stabilization and vigorous recovery promised by those who had learned the lessons of history.

Some argued that recovery from a downturn caused by a financial crisis is necessarily slower than recovery from a garden-variety recession.[3] Growth is slowed by the damage to the financial system. Banks, anxious to repair their balance sheets, hesitate to lend. Households and firms, having accumulated unsustainably heavy debts, restrain their spending as they attempt to reduce that debt to a manageable level.

But working in the other direction is the fact that government can step up. It can lend when banks don't. It can substitute its spending for that of households and firms. It can provide liquidity without risking inflation given the slack in the economy. It can run budget deficits without creating debt problems, given the low interest rates prevailing in subdued economic conditions.

And it can keep doing so until households, banks, and firms are ready to resume business as usual. Between 1933 and 1937, real GDP in the United States grew at an annual rate of 8 percent, even though government did only passably well at these tasks. Between 2010 and 2013, by comparison, GDP growth averaged just 2 percent. This is not to suggest that growth after 2009 could have been four times as fast. How fast you can rise depends also on how far you fall in the preceding period. Still, the US and world economies could have done better.

Why they didn't is no mystery. Starting in 2010 the United States and Europe took a hard right turn toward austerity. Spending under the American Recovery and Reinvestment Act, Obama's stimulus program, peaked in fiscal year 2010 before heading steadily downward. In the summer of 2011 the Obama administration and Congress then agreed to $1.2 trillion of spending cuts.[4] In 2013 came expiry of the Bush tax cuts for top incomes, the end of the reduction in employee contributions to the Social Security Trust Fund, and the Sequester, the across-the-board 8½ percent cut in federal government spending. All this took a big bite out of aggregate demand and economic growth.

In Europe the turn toward austerity was even more dramatic. In Greece, where spending was out of control, a major dose of austerity was clearly required. But the adjustment program on which the country embarked starting in 2010 under the watchful eyes of the European Commission, the European Central Bank, and the International Monetary Fund was unprecedented in scope and severity. It required the Greek government to reduce spending and raise taxes by an extraordinary 11 percent of GDP over three years—in effect, to eliminate more than a tenth of all spending in the Greek economy. The euro area as a whole cut budget deficits modestly in 2011 and then sharply in 2012, despite the fact that it was back in recession and other forms of spending were stagnant. Even the United Kingdom, which had the flexibility afforded by a national currency and a national central bank, embarked on an ambitious program of fiscal consolidation, cutting government spending and raising taxes by a cumulative 5 percent of GDP.

Central banks, having taken a variety of exceptional steps in the crisis, were similarly anxious to resume business as usual. The Fed undertook three rounds of quantitative easing—multimonth purchases of treasury bonds and mortgage-backed securities—but hesitated to ramp up those purchases further despite an inflation rate that repeatedly undershot its 2 percent target and growth that continued to disappoint. Talk of tapering those purchases in the spring and summer of 2013 led to sharply higher interest rates. This was not medicine one would prescribe for an economy struggling to grow by 2 percent.

And if the Fed was reluctant to do more, the ECB was anxious to do less. In 2010 it prematurely concluded that recovery was at hand and started phasing out its nonstandard measures. In the spring and summer of 2011 it raised interest rates twice. Anyone seeking to understand why the European economy failed to recover and instead dipped a second time need look no further.

What lessons, historical or otherwise, informed this extraordinary turn of events? For central banks there was, as always, deeply ingrained fear of inflation. The fear was nowhere deeper than in Germany, given memories of hyperinflation in 1923. German fear now translated into European policy, given the Bundesbank-like structure of the ECB and the desire of its French president, Jean-Claude Trichet, to demonstrate that he was as dedicated an inflation fighter as any German.

The United States did not experience hyperinflation in the 1920s, nor at any other time, but this did not prevent overwrought commentators from warning that Weimar was right around the corner. The lessons of the 1930s—that when the economy is in near-depression conditions with interest rates at zero and ample excess capacity, the central bank can expand its balance sheet without igniting inflation—were lost from view. Sophisticated central bankers, like Chairman Bernanke and at least some of his colleagues on the Federal Open Market Committee, knew better. But there is no doubt they were influenced by the criticism. The more hysterical the commentary, the more loudly Congress accused the Fed of debasing the currency, and the more Fed governors then feared for their independence. This rendered them anxious to start shrinking the Fed's balance sheet toward a normal level before there was anything resembling a normal economy.

This criticism was more intense to the extent that unconventional policies had gotten central bankers into places they didn't belong, such as the market for mortgage-backed securities. The longer the Fed continued to purchase mortgage-backed securities—and it continued into 2014—the more the institution's critics complained that policy was setting the stage for another housing bubble, and ultimately another crash. This fear became a totem for the worry that low interest rates were encouraging excessive risk taking. This, of course, was precisely the same concern over moral hazard that contributed to the disastrous decision not to rescue Lehman Brothers.

In the case of the ECB, the moral-hazard worry centered not on markets but on politicians. For the central bank to do more to support growth would just relieve the pressure on governments, allowing excesses to persist, reforms to lag, and risks to accumulate. The ECB permitted itself to be backed into a corner where it was the enforcer of fiscal consolidation and structural reform. In its role as enforcer, economic growth became the enemy.

In the case of fiscal policy, the argument for continued stimulus was weakened by its failure to deliver everything promised, whether because politicians were prone to overpromising or because the shock to the economy was even worse than was understood at the time. There was the failure to distinguish how bad conditions were from how much worse they would have been without the policy. There was the failure to distinguish the need for medium-term consolidation from the need to support demand in the short run. There was the failure to distinguish the case for fiscal consolidation in countries with gaping deficits and debts, like Greece, from the situation of countries with the space to do more, like Germany and the United States. Thus a range of factors came together. The one thing they had in common was failure.

Much may have been learned about the case for fiscal stimulus from John Maynard Keynes and other scholars whose work was stimulated by the Great Depression, but equally much was forgotten. Where Keynes relied mainly on narrative methods, his followers used mathematics to verify their intuitions. Eventually those mathematics took on a life of their own. Latter-day academics embraced models of representative, rational, forward-looking agents in part for their tractability, in part for their elegance. In models of rational agents efficiently maximizing everything, little can go wrong unless government makes it go wrong. This modeling mind-set pointed to government meddling as the cause of the crisis and slow recovery alike. Interference by the government-sponsored entities Freddie Mac and Fannie Mae had been responsible for the excesses in the mortgage market that precipitated the crisis, just as uncertainty about government policy was the explanation for the slow recovery.

It must similarly be, the intuition followed, that fiscal stimulus, as yet another form of government meddling, could do no good. Economists advancing these ideas invoked models in which households, knowing that additional deficit spending now would have to be paid for by higher taxes later, reduce their spending accordingly.[5] This logic suggested that the effects of temporary fiscal stimulus might be less than promised by their Keynesian proponents. But not even these models implied that temporary stimulus would have no effects.[6] Still, freshwater economists (so called because of their tendency to cluster around the Great Lakes) were quick to leap to this conclusion. George Bernard Shaw's aphorism that you can lay all the economists end to end and they still can't reach a conclusion was nowhere more apposite. This inability to agree on even the most basic tenets of economic policy undermined the intellectual case for an effective response.

In much of Europe, in any case, Keynesian theorizing never took hold. The out-of-control budgets and inflation of Weimar left German economists skeptical of deficit spending and led them to argue instead that government should focus on strengthening contract enforcement and fostering competition.[7] This was a more sophisticated position than the "government bad, private sector good" message that bubbled up from the Great Lakes. But it too sat uneasily with the case for stimulus spending and encouraged an early shift to austerity.

If theory of dubious relevance played a role in this policy shift, then so did empirical analysis of dubious generality. Two American economists presented evidence that growth tends to slow when public debt reaches 90 percent of GDP.[8] No one disputed that heavy debts weigh on economic growth, but the idea that 90 percent was a trip wire where performance deteriorates sharply was quickly challenged. Yet the fact that US and British public debts were approaching this red line and that the Eurozone's debt/GDP ratio exceeded it made it expedient to cite the assertion in support of a quick turn to austerity. What he mischaracterized as the "90 percent rule" was invoked by European Commissioner for Economic and Monetary Affairs Olli Rehn, for example, when justifying the policies of the European Union.

Two Italian economists meanwhile presented evidence that austerity, especially if resulting from public spending cuts rather than tax increases, could have contra-Keynesian expansionary effects.[9] Such results were plausible for an economy like Italy in the 1980s and 1990s, with enormous debts, high interest rates, and heavy taxes. In these circumstances, public spending cuts could bolster confidence, and those confidence effects could boost investment. But however plausible such predictions for Italy, they were not plausible for countries with lower debts. They were not plausible when interest rates were near zero. They were not plausible when the country in question, as a member of the Eurozone, lacked a national currency to devalue and could not readily substitute exports for domestic demand. And they were not plausible when the entire collection of advanced economies was depressed, leaving no one to export to.

This did not, however, prevent the doctrine of expansionary fiscal consolidation from being embraced in all its spurious generality by Congressman Paul Ryan, the self-appointed deficit expert in the US House of Representatives. It did not prevent it from being invoked by EU finance ministers in their post-summit press conferences and communiqués. The idea that fiscal consolidation could be expansionary allowed politicians to argue that austerity could be all gain and no pain. That the reality turned out to be different was a rude shock except for those for whom the pain and gain were not the issue but austerity in and of itself was the objective.

The most powerful factor of all in this turn to austerity was surely that policy makers prevented the worst. They avoided another Great Depression.

They could declare the emergency over. They could therefore heed the call for an early return to normal policies. There is no little irony in how their very success in preventing a 1930s-like economic collapse led to their failure to support a more vigorous recovery.

And what was true of macroeconomic policy was true equally of financial reform. In the United States, the Great Depression led to the Glass-Steagall Act, separating commercial banking from investment banking. It led to the creation of a Securities and Exchange Commission to rein in financial excesses. There were calls now for a new Glass-Steagall, the earlier act having been laid to rest in 1999, but there was nothing remotely resembling such far-reaching regulatory reform. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 contained some modestly useful measures, from limits on speculative trading by financial institutions to creation of a Consumer Financial Protection Bureau. But the big banks were not broken up. Rhetoric to the contrary, little was done about the problem of too-big-to-fail. There was nothing approaching the fundamental redrawing of the financial landscape that resulted from Glass-Steagall's sharp separation of commercial banking, securities underwriting, and insurance services.

The fundamental explanation for the difference is again the success of policy makers in preventing the worst. In the 1930s, the depth of the Depression and the collapse of banks and securities markets wholly discredited the prevailing financial regime. Now, in contrast, depression and financial collapse were avoided, if barely. This fostered the belief that the flaws of the prevailing system were less. It weakened the argument for radical action. It took the wind out of the reformers' sails. And it allowed petty disagreements among politicians to slow the reform effort. Success thus became the mother of failure.

But whatever challenges America faced in getting its political parties to agree on regulatory reform paled in comparison with the challenge in Europe. Where reform in the United States required a modicum of agreement between the two parties, progress in the EU required agreement among twenty-seven governments. To be sure, though all governments were equal, some, like Germany's, were more equal than others. But even in this Orwellian Europe, small countries could cause trouble if they refused to go along, as Finland did when asked to aid Spain through EU's rescue fund, the European Stability Mechanism. Reform might require agreement by countries both inside and outside the Eurozone, as in the case of measures to limit bankers' bonuses, which were stymied when the UK took the EU to the European Court of Justice over pay and bonus regulation.

Nothing more epitomized these difficulties than the fight over banking union. With the creation of the euro, banks throughout Europe became even more tightly connected. But those banks and their national regulators failed to take into account the impact of their actions on neighboring banks and countries. The lesson of the crisis was that a single currency and single financial market but twenty-seven separate national bank regulators was madness. The solution was a single supervisor, a single deposit insurance scheme, and a single resolution mechanism for bad banks. Banking union in its fullness was seen as critical for restoring confidence in EU institutions.

In the summer of 2012, at the height of the crisis, European leaders agreed to establish this banking union. They agreed to create a single supervisor to monitor the banks. But then the process bogged down. Countries with strong banking systems hesitated to delegate supervision to a centralized authority. Others complained that their banks and depositors would be paying into a common insurance fund to bail out countries with poorly run financial institutions. Still others objected that their taxpayers would be on the hook when it came to funding the common resolution authority. The one thing these three groups had in common was, well, Germany, whose chancellor, Angela Merkel, demanded revisions of the EU's treaties to specify how these mechanisms would work, and how they would be financed. But treaty revision was somewhere other governments hesitated to go, since it required the assent of parliaments, and in some cases public referenda, in the course of which the EU's most basic understandings could be cast into doubt.

European leaders therefore agreed to half a loaf. They would proceed with the single supervisor but limit its oversight to Europe's 130 biggest banks, while leaving the single deposit insurance scheme and resolution mechanism to later.[10]

This reflected the difficulty of decision making in a European Union of twenty-seven countries. But it also reflected that the EU did just enough to hold its monetary union together. Through emergency loans and creation of an ECB facility to buy the bonds of troubled governments, it did just enough to prevent the euro system from falling apart. This success in turn limited the urgency of proceeding with banking union. This success too became the mother of failure.

That Europe did just enough to hold its monetary union together and that the euro did not go the way of the gold standard in the 1930s were, for many, among the great surprises of the crisis. In the late 1920s, the gold standard was seen as the guarantor of economic and financial stability, because the decade when it was in abeyance, from 1914 through 1924, had been marked by anything but. It turned out, however, that the gold standard as reconstructed after World War I was neither durable nor stable. Rather than preventing the 1931 financial crisis, it contributed to its development, first by creating a misapprehension of stability that encouraged large amounts of credit to flow toward countries ill equipped to handle it, and then by hamstringing the ability of governments to respond. The results were bank runs and balance-of-payments crises, as investors came to doubt the capacity of the authorities to defend their banks and currencies. Freeing themselves from the gold standard then enabled countries to regain control of their economic destinies. It allowed them to print money where money was scarce. It allowed them to support their banking systems. It allowed them to take other steps to end the Depression.

The architects of the euro were aware of this history. It resonated even more powerfully given that they experienced something similar in 1992–93 with the collapse of the Exchange Rate Mechanism through which European currencies were tied together like a string of mountain climbers. They therefore set out to make their new monetary arrangement stronger. It would be based on a single currency, not on pegged rates between separate national currencies. Devaluation of national currencies would not be possible because countries would no longer have national currencies to devalue. This euro system would be regulated not by national central banks but by a supranational authority, the ECB.

Importantly, the treaty establishing the monetary union would make no provision for exit. It was possible in the 1930s for a country to abandon the gold standard by a unilateral act of its national legislature or parliament. Abandoning the euro, in contrast, would abrogate a treaty obligation and jeopardize a country's good standing with its EU partners.

But while avoiding some of the problems of the gold standard, the euro's architects courted others. By creating the mirage of stability, the euro system set in motion large capital flows toward Southern European countries ill equipped to handle them, like those of the 1920s. When those flows reversed direction, the inability of national central banks to print money and national governments to borrow it consigned economies to deep recession, as in the 1930s. Pressure mounted to do something. Support for governments that failed to do so began to dissolve. Increasingly it was predicted that the euro would go the way of the gold standard; governments in distressed countries would abandon it. And if they hesitated, they would be replaced by other governments and leaders prepared to act. In the worst case, democracy itself might be placed at risk.

This, it turned out, was a misreading of the lessons of history. In the 1930s, when governments abandoned the gold standard, international trade and lending had already collapsed. This time European countries did just enough to avoid that fate. Hence the euro had to be defended in order to preserve the Single Market and intra-European trade and payments. In the 1930s, political solidarity was another early casualty of the Depression. Notwithstanding the strains of the crisis, governments this time continued to consult and collaborate, with help from international institutions stronger and better developed than those of the 1930s. EU countries in a strong economic and financial position provided loans to their weak European partners. Those loans could have been larger, but they were still large by the standards of the 1930s.

Finally, the crisis of democracy forecast by those anticipating the euro's collapse failed to materialize. There were demonstrations, including violent demonstrations. Governments fell. But democracy survived, unlike the 1930s. Here the Cassandras of collapse failed to reckon with the welfare states and social safety nets constructed in response to the Depression. Even where unemployment exceeded 25 percent, as it did in the worst-affected parts of Europe, overt distress was less. This weakened the political backlash. It limited the pressure to abandon the prevailing system.

That the experience of the Great Depression importantly shaped perceptions and reactions to the Great Recession is a commonplace. But understanding just how that history was used—and misused—requires one to look more closely not just at the Depression but also at the developments leading up to it. This in turn means starting at the start, namely, in 1920.

PART I | The Best of Times

CHAPTER 1 | New Age Economics

AT FIVE FOOT four and with a round face, Charles Ponzi hardly cut an imposing figure. Having arrived in the United States at the age of twenty-one from Parma, Italy, he did not speak English with the authority of a patrician American financier. But if small in stature, Ponzi would loom large in the literature on financial crises. In time, "Ponzi scheme" would become an indelible part of the lexicon of financial instability, surpassing even the likes of "Greenspan put" and "Lehman Brothers moment."

Ponzi made his name, as it were, with a scheme to arbitrage the market in international postal reply coupons. These instruments were introduced in 1906 by agreement at the Universal Postal Union Congress, held, auspiciously, in Italy. They were intended as a vehicle for sending funds abroad, enabling the recipient to buy stamps and post a reply.

The 1906 congress was convened in the gold standard era, when exchange rates were locked. Delegates thus had no way of anticipating the complications that suspension of the gold standard could create for their agreement. But with the outbreak of the World War, governments embargoed gold exports. Buying gold where it was cheap and selling it where it was dear had been the mechanism through which exchange rates were held stable. With the embargoes, which effectively suspended gold market transactions, currencies began fluctuating against one another.

Among the unanticipated consequences were those for the postal coupon agreement. The United States was the only belligerent whose currency maintained its value against gold during and after the war. European currencies depreciated against the dollar as governments printed money to finance military outlays, a trend only partially reversed with the armistice. As a result, postal reply coupons purchased abroad using European currencies could buy more than their cost in stamps in the United States. In 1919, sensing an opportunity, Ponzi borrowed money from business associates, which he sent to Italian contacts with instructions to purchase postal reply coupons and forward them to him in Boston.

Why Ponzi was uniquely able to detect this opportunity is, to put it mildly, unclear. Not surprisingly, the appearance of substantial profits was an illusion. Ponzi's contacts could assemble only a limited number of coupons, and even then, completing the transaction took time, during which funds devoted to the project were tied up.

And time was not something Ponzi possessed in abundance, since he had promised to double his investors' money in ninety days. To pay those dividends, he was forced to employ the capital obtained from new subscriptions, leaving no funds for the postal coupon arbitrage motivating the scheme. This in turn made it essential to attract additional investors, which Ponzi did by incorporating as the impressive-sounding Securities Exchange Company and hiring a phalanx of salesmen. The scheme collapsed in August 1920 with publication of a *Boston Post* exposé penned by William McMasters—a journalist Ponzi had hired to generate publicity for his operation.[1]

That Ponzi's promise to double his investors' money in ninety days had not raised red flags says something about the readiness of investors to suspend disbelief in the intoxicating financial atmosphere of the 1920s. One can't help but think of the inability of investors in the equally heady 2000s to see through the ability of Bernie Madoff to generate supernormal profits with barely a fluctuation year after year after year.

Indicted for mail fraud, Ponzi pled guilty and was sentenced to three and a half years in federal prison. The investing public of New England, however, was not so easily assuaged. While still in prison, Ponzi was indicted by the State of Massachusetts on twenty-two charges of larceny. The now impecunious defendant served as his own attorney, more than capably at first. But as one trial followed another, he grew fatigued. Where the first jury acquitted, the second deadlocked, and the third found the defendant guilty. Freed on bail, Ponzi fled to the remote backwaters of Florida, where he began doing business under an assumed name.

In 1925, doing business in Florida meant transacting in real estate. Ponzi transformed himself into the promoter of a subdivision near Jacksonville. "Near" in this case meant sixty-five miles west of the city, where Ponzi set about developing (if one is permitted elastic use of the word) an expanse of scrubland covered with palmetto, weeds, and the occasional oak. Subdividing meant driving stakes into the ground to help owners identify their homestead.

Once lots were staked, at an ambitious twenty-three per acre, they were offered at $10 apiece.

The capital needed to purchase, survey, and subdivide the land was provided by investors in Ponzi's Charpon (*Char*les *Pon*zi) Land Corporation. Subscribers were promised $30 for each $10 investment in sixty days, an even more impressive return than in the earlier postal coupon operation. This of course was nothing but another pyramid scheme in which early investors were paid with cash obtained from the proceeds of selling shares to new investors. It didn't take long for the fraud to be detected or for the perpetrator's identity to be revealed. Ponzi was indicted for violating Florida statutes regarding trusts, tried, and again found guilty by a jury of his peers.[2]

That Ponzi, on reaching Florida, found a home in the real estate business was no coincidence, Florida being in the midst of a property boom the likes of which the United States had never seen.

The country had experienced real estate booms and busts before, but these had centered on farmland. This was its first urban, or more precisely suburban, real estate boom, driven by the automobile. As more Americans acquired cheap and reliable cars, epitomized by Henry Ford's Model T, suburban living became possible. And as Florida grew accessible to motorized visitors, its temperate climate and cheap land proved a powerful lure. The influx of Northerners who arrived in the winter of 1920–21 were known as "Tin Can Tourists" for their less-than-elegant mode of transport, which sometimes also served as a temporary abode.[3]

Real estate promoters, not a few of whom were also automobile enthusiasts, were quick to recognize the connection. Carl Fisher, who with his brothers founded the Prest-O-Lite Corporation and then Fisher Body to provide acetylene headlamps and bodies to the fledgling motor-vehicle industry, was a case in point. Fisher first encountered the peninsula that came to be known as Miami Beach in 1910 on a honeymoon yacht trip with his fifteen-year-old bride. In the final stages of negotiating the sale of Prest-O-Lite to Union Carbide, he was in a position to buy an elegant vacation and retirement home across the peninsula on Biscayne Bay.

But retirement bored Fisher, who was still only in his thirties. By 1913 he was in the real estate business; by 1915 he was the region's leading property developer. And if there was not enough property to develop, Fisher created more. He moved dredging equipment into Biscayne Bay, pumping up sand to elongate the beach. Will Rogers, as usual, put it best: "Carl discovered that sand could hold up a Real Estate sign, and that was all he wanted it for. Carl rowed the customers out in the ocean and let them pick out some nice smooth water where they would like to build, and then he would replace the water with an island, and you would be a little Robinson Crusoe of your own."[4]

To strengthen the connections between the automobile and Florida real estate, Fisher promoted construction of the Dixie Highway, linking the state with the Upper Midwest. He founded the Dixie Highway Association. He seeded newspapers with articles celebrating the project. He subdued conflicts between rival cities seeking to sit astride the route by laying out both eastern and western branches. No sacrifice was too great in order to deliver the desired flow of traffic.

To be sure, other factors also nourished the Florida property boom, including the strong recovery of the American economy from the postwar recession and expectations that there would now be a permanent acceleration of growth. The 1920s saw a revolution in factory design, as production was reorganized to capitalize on electric power. Factories had traditionally used steam power distributed through a network of overhead drive shafts and brackets. Electrification permitted removal of this steam-related apparatus, making it possible to install overhead cranes to move subassemblies. Electricity also allowed workers to use portable power tools and move freely along the line. This increased their productivity relative to their predecessors, who were figuratively bolted to the shop floor, much like the steam-powered machinery with which they worked. In this way electrification allowed employers to adopt scientific management practices designed to optimize the efficiency of labor input, notably through the time and motion studies of the management consultant Frederick Winslow Taylor.

The full potential of the assembly line, symbolized by Henry Ford's massive River Rouge Complex in Dearborn, Michigan, whose construction began in 1917, could now be realized. This in turn held out the promise of productivity gains at a rate never experienced previously. The fact that real GDP rose by nearly 5 percent per annum between 1922 and 1929, faster than anything the United States had experienced over a comparable period, seemingly confirmed this optimistic view.

Faster productivity growth would mean not just higher incomes but also higher prices for financial assets, or so investors were led to believe. What was true of real estate, in other words, was true also of other investments. The leading corporations added to the Dow Jones Industrial Average in the 1920s, the likes of American Telephone and Telegraph, Western Union, International Harvester, and Allied Chemical, were exemplars of this technological revolution. There is an obvious parallel with the run-up to the 2008–09 crisis, when it was argued that productivity growth would accelerate as firms learned to commercialize new information technologies. The transformative general-purpose technology in the 1920s may have been electricity rather than the computer, but the impact on investor psychology was the same.

Monetary policy then poured fuel on the fire. Creation of the Federal Reserve System in 1913 encouraged the belief that the business cycle instability that traditionally plagued the country had been tamed. The Fed was charged with preventing the swings in interest rates that had perturbed financial markets and economic activity in earlier years (with providing an "elastic currency," in the words of the Federal Reserve Act). Insofar as it was likely to succeed, investment would be safer, encouraging the plungers. The 1920s were known as the "New Era," capturing the idea that the country had entered a new age not only of faster productivity growth but also of greater economic and financial stability. Shades of the "Great Moderation," the supposed diminution of the business cycle in the lead-up to the 2008–09 crisis.

Although the Fed was quick to make use of its new policy instruments, it did not deploy them in the anticipated way. The expectation of the founders was that the new central bank would adjust credit conditions to the needs of domestic business. Somewhat unexpectedly, now instead it adjusted them with foreign circumstances in mind. In mid-1924, the Federal Reserve banks cut the interest rates they charged when advancing credit to commercial banks (their "discount rates") from 4.5 to 3 percent, with an eye toward helping Great Britain back onto the gold standard.[5] (The main way central banks injected credit into the economy in this era was by discounting promissory notes held by banks and firms—that is to say, by purchasing them at a discount relative to their face value in return for cash. Hence the term "discount rate.") Britain had experienced more inflation than the United States during the World War, damaging its competitiveness. It consequently lacked the capacity to peg the sterling price of gold or to restore the traditional exchange rate between sterling and the dollar once wartime controls were lifted. The UK therefore abandoned convertibility in March 1919, allowing the sterling-dollar exchange rate to fluctuate and, not incidentally, suggesting opportunities to the likes of Ponzi.

Very Serious People in Britain and America saw reconstruction of the prewar gold standard as a priority. Prominent among them was Benjamin Strong, the influential governor of the Federal Reserve Bank of New York. Strong was firmly of the view that exchange rate instability and the uncertainty to which it gave rise had a withering effect on trade.[6] And the state of trade, foreign as well as domestic, mattered importantly for an America that had assumed Britain's mantle as the world's leading exporter. "Well-balanced prosperity" required absorption by foreign markets of America's "surplus production," in the words of the annual report of the Federal Reserve Board for 1925, a document significantly shaped by Strong.[7] And augmenting that absorption capacity depended in turn on the financial normalization that only the gold standard could provide. In his capacity as secretary, vice president, and then president of Bankers Trust Company and confidant of John Pierpont Morgan, whose firm, J. P. Morgan & Co., possessed its own sister organization in London, Strong appreciated the importance of these international connections. As founding governor of a public agency that saw its mandate as transforming New York into a leading international financial center, he regarded reestablishment of a stable international monetary system as central to that goal.

Under the prewar gold standard, the pound sterling was the sun around which other currencies orbited. Much of the world's trade was financed and settled in sterling, and London was the leading international financial center. Even though the war years and 1920s saw a considerable expansion of international financial business in New York and hence the dollar's acquisition of an international role, Britain's resumption of gold convertibility—permitting sterling to once again be converted into gold at a fixed domestic-currency price—was still seen as a precondition for resumption by other countries. Hence the exchange rate at which sterling was stabilized would in turn determine the rate, in both senses of the word, at which other countries restored gold convertibility.

Britain thus came under pressure from US officials to take this momentous step. Strong, in particular, emphasized the importance of Britain restoring not just gold convertibility but also the prewar exchange rate of $4.86 to the pound. The prewar exchange rate was important for sterling's prestige and, Strong believed, the Bank of England's credibility. The adverse consequences for the international system of failing to restore it, he warned, were "too serious really to contemplate."[8]

Montagu Norman, governor of the Bank of England since 1920, shared his American friend's perspective. In letters to Strong, he emphasized the desirability of returning to a gold standard of the pre–World War I variety. But unlike a modern central banker, Norman made little effort to explain his reasoning. His public utterances were famously inarticulate, something that lent an air of mystery, if not confusion, to his policy decisions. In *The Shape of Things to Come*, the futurist fantasy published in 1933 at the depths of the Depression, H. G. Wells found Norman an irresistible target. "Instead of the clear knowledge of economic pressures and movements that we have today," wrote Wells, looking back from an imaginary future, "strange Mystery Men were dimly visible through a fog of battling evasions and misstatements, manipulating prices and exchanges. Prominent among these Mystery Men was a certain Mr. Montagu Norman, Governor of the

Bank of England from 1920 to 1935. He is among the least credible figures in all history, and a great incrustation of legends has accumulated about him. In truth the only mystery about him was that he was mysterious."

Wells got many things right, including the importance that modern central bankers attach to transparency and communication.[9] The one thing he got wrong was Norman's retirement. In fact, the strange Mystery Man did not step down from the governorship of the Bank of England until 1944.

Whether or not his incoherence was purposeful, Norman was the father of constructive ambiguity, the central banker's art, perfected by Alan Greenspan, of leaving things hanging. But one issue about which he was unambiguous was the desirability of restoring gold convertibility at the prewar rate against the dollar. A precondition for achieving this was for the Bank of England to acquire adequate stocks of gold, or equally, assets convertible into gold. And if acquiring adequate stocks required the assistance of the Federal Reserve System, then this was something Strong was ready to provide.

Thus, the low-interest-rate policy advocated by Strong starting in 1924 was designed to help the Bank of England acquire the reserves needed to return to gold. Low interest rates in New York encouraged funds to flow toward London, where rates were higher. Much of this funding ended up in the big London banks. Some ended up in the bankers' bank; in other words, it ended up in the coffers of the Bank of England.

And if market forces did not convey an adequate flow of gold toward London, they could always be supplemented. With this in mind, the New York Fed purchased US treasury bonds, pushing down yields and encouraging additional finance to flow across the Atlantic.[10]

But these financial operations, by themselves, might not be enough to put Britain firmly back on the gold standard. In addition there would have to be a rebalancing of competitive positions. Although British prices had risen more than US prices since the outbreak of the World War, there had been no corresponding rise in British labor productivity. Britain would lack export competitiveness if sterling was stabilized at its former level against the dollar. It would run a chronic trade deficit, and the gold the Bank of England had so laboriously acquired would just leak back out. Avoiding this outcome required reducing prices in the UK or raising them in the United States. Since before the war, British production costs had risen relative to those in the United States, Strong estimated, by 10 percent. Other observers reached similar conclusions. John Maynard Keynes, who had a reputation for expertise in such matters, put the differential at 9 percent.[11]

Strong's hope was that keeping interest rates low would encourage spending, putting upward pressure on US prices and helping to correct the competitiveness gap.[12] In the event, manipulating price levels turned out to be more difficult than anticipated. American prices rose between mid-1924 and mid-1925, but not by enough to erase the cost differential. When Britain returned to the gold standard in April 1925, the problem of inadequate competitiveness remained. Norman would battle it for the better part of six years.

The effect of Strong's low-interest-rate policy was therefore less to rebalance the world economy than to unbalance the economy of the United States. The effects manifested themselves in the housing bubble centered on Florida and, before long, Chicago, Detroit, and New York. Neither was the Wall Street boom that dominated the last part of the decade unrelated.

Strong was vehemently criticized by Adolph Miller for subordinating domestic financial-stability considerations to international objectives. A founding governor of the Federal Reserve System, Miller had graduated from the University of California, Berkeley, in 1887 before going on to study in Cambridge, Paris, and Munich. He then taught at Cornell and Chicago (two universities that figure further in this story) before returning to Berkeley to establish the College of Commerce, and finally moving to Washington, D.C., to serve as assistant secretary of the interior, and then as a member of the Board of Governors upon being appointed by his fellow academician Woodrow Wilson in 1914.

Miller regaled in the didactic manner and ample vocabulary of the professor. As described by George Norris, governor of the Federal Reserve Bank of Philadelphia, Miller was intoxicated by his verbal skills, which he displayed in all their glory in the meetings of the Federal Reserve Board and the Open Market Investment Committee.[13] Miller used his verbal powers specifically to propound the "real bills doctrine," which dictated that the central bank should provide just as much credit as was required for the legitimate needs of business and no more.[14] That doctrine, developed in the early eighteenth century by, among others, the Scottish monetary theorist John Law, was intended as a guide to credit creation by the Bank of England, established in 1694. Not satisfied by his role in shaping the Bank of England, Law would go on to found a quasi-central bank for France, the Banque Générale, and play a role in the Mississippi Bubble and crash before retiring in disgrace, but no matter. His real bills doctrine informed the conduct of central bank policy for two centuries and more thereafter.

In particular, the doctrine informed the Federal Reserve Act of 1914, which spoke of the need for an "elastic currency," a system in which supplies of currency and credit expanded and contracted to meet the legitimate needs of business. The failure of supplies of dollar currency and credit to respond in this way had led to sharp interest rate spikes and chronic financial instability throughout US history. This was the problem that creation of the Fed in 1914 was designed to correct.

As an adherent to the real bills doctrine, Miller was quick to conclude that directing Federal Reserve policy to the problems of the British economy, as Strong had done, rather than being guided by the legitimate needs of business was the height of irresponsibility. The professor was acerbic in his criticism of the governor of the Federal Reserve Bank of New York. His unhappiness was deepened, no doubt, by the failure of other members of the Board of Governors and directors of the Reserve banks, typically men of affairs unversed in rigorous monetary analysis, to defer to academics like himself who had been properly schooled in theory and were therefore better qualified to advise on technical matters.

Miller's voice was the loudest, but he was not alone. His criticisms were echoed by, among others, Charles Hamlin, the former assistant treasury secretary and unsuccessful candidate for governor of Massachusetts who now served as chairman of the Federal Reserve Board, and by Herbert Hoover, Strong's onetime ally, President Calvin Coolidge's commerce secretary, and Miller's Georgetown neighbor. Hoover, like Strong, was an internationalist by inclination, but even for him Strong's 1924–25 initiative went too far. It paid too little attention to the domestic repercussions of the policy. Strong, Hoover concluded, had been seduced by his friend Norman; the head of the New York Fed was now a mere "mental annex to Europe."[15] Strong's policy threatened to unleash inflation and fan financial excesses. If it was desirable to help Britain back onto the gold standard, then this should be done by other means, Hoover concluded, not by reducing US interest rates, something which could have undesirable side effects.

Miller and Hoover's instinctual embrace of the real bills doctrine was a manifestation of the power of historical experience in shaping the outlook and actions of officials. Sharp spikes in interest rates resulting in widespread business distress, and in the worst case financial crisis, had been a feature of the US monetary and financial landscape since the country's independence. Hence a doctrine that counseled tailoring supplies of money and credit to the legitimate needs of business, and looking to the level of interest rates to verify that those needs were being met, informed the outlook of many of the founding governors of the Federal Reserve System. Insofar as that doctrine warned against artificially reducing interest rates to help other countries, as Strong had done, following it more strictly would have prevented dangerous imbalances in US property and stock markets from building up. But that same doctrine would also suggest that there was no need for the Federal Reserve to act when interest rates fell from their high levels after 1929—lower interest rates indicating that US business had all the credit and the economy had all the monetary support they required.

The clear implication is that there is no single monetary doctrine for all seasons. This was a lesson Federal Reserve officials and the country would eventually learn at great expense.

For the time being, the criticisms of these men had little effect. Strong was the dominant personality in the Federal Reserve System. With his background as J. P. Morgan's right-hand man and his work on the front lines of the 1907 financial crisis, he spoke with authority on matters of financial policy, notwithstanding his lack of formal academic training. His was the voice of experience. If Strong attached more importance to events in London than Miami, then so be it.

And even though Fed policy contributed to the financial excesses of the period, it was not the only factor at work. In addition, there was the enabling role of a financial system that was only loosely regulated. There were governmental efforts to boost real estate and construction activity. There was the fact that housing starts had been depressed in the war years, making for pent-up demand now straining to be released.

Ambitious Florida promoters, liking nothing less than pent-up demand, did their best to liberate it. None was more ambitious than George Merrick, scion of a Congregationalist minister and grapefruit plantation owner. Merrick's avocation was poetry. In 1920, celebrating his Florida environs, he published a volume of verse entitled *Song of the Wind on a Southern Shore*.

> There's a Shore I know—that draws me
> And that warms me all the more!—
> Where the gumbo-limbo grows:—
> And the little lizards doze—
> Where the trade-wind blows
> Through the palm-tufted curvings
> Of the Biscayne shore[16]

Clearly Merrick's principal talent lay in real estate development. Appointed Dade County commissioner in 1915, his main achievement was a network of roads connecting Miami with its future suburbs, and not least with his own planned community of Coral Gables, centered on what had been the family plantation. Pushing his poetic license to the hilt, Merrick pitched Coral Gables as a Spanish-style city where "your 'Castles in Spain' are made real." The pit from which he mined the limestone and coral rock that was used to construct the homes was transformed into a Venetian lagoon complete with bridges, grottoes, and loggias. Merrick advertised in national magazines and out-of-state newspapers, writing much of the copy himself. He lured clients to his still largely undeveloped suburb with free performances of Mabel Cody's Flying Circus, a popular air show. Customers buying lots were rewarded with the opportunity of going aloft and seeing their property from the air.[17] He opened opulent sales offices in New York and Chicago. Purchasing buses to transport potential buyers, he organized excursions from New York, Philadelphia, and Washington, D.C.

Not least, Merrick hired William Jennings Bryan, the former presidential candidate, secretary of state, and famed orator, to deliver the pitch. Bryan had moved to Florida to make life easier for his arthritic wife and immediately became Miami's most famous resident. Having run for president in 1896 on a platform fighting for the small man and against the gold standard, Bryan was now paid by Merrick to stand on a platform of another kind, erected over the water, and speak not of the gold standard but of the Gold Coast. He was paid $100,000 for his year's work, half in cash and half in land.

Coral Gables was successful from the start. More than five thousand customers attended the inaugural auction of home sites in 1921. After barely a year, Merrick was buying additional land in order to expand his vision and his development. Between November 1924 and March 1925, the height of the tourist season, Merrick recorded a remarkable $4 million a month in land sales.

State government officials responded enthusiastically to the boom. This was no surprise, since a substantial number of property developers, like Merrick, not to mention their bankers, graciously agreed to serve in public office. They used soaring real estate taxes to finance local road building and expand public services, creating the appearance of even greater prosperity. In 1923, with the boom in full swing, the Florida legislature placed on the ballot an amendment to the state constitution abolishing income and inheritance taxes with the goal of encouraging migration from the north.[18] Grateful voters overwhelmingly approved the measure. They chose John Wellborn Martin, previously the mayor of Jacksonville, as governor at the conclusion of a campaign centering on his promise to complete an ambitious statewide road-building project. This was one of the things Ponzi was counting on, presumably, when marketing his fictitious development on the outer reaches of Martin's hometown.

Increasingly, the Florida real estate market displayed all the signs of an unsustainable boom in its late stages. Landowners hired binder boys to stand in the hot sun and entice prospective buyers. These young men in white suits, not a few of whom moonlighted as tennis and golf pros, encouraged potential purchasers to commit to a nonrefundable 10 percent down payment known as a binder.[19] At the height of the boom, binder receipts circulated like currency, with hotels, nightclubs, and bordellos all accepting them in payment for services.

Binder boys received a fixed fee when the aspiring purchaser's money arrived at the developer's bank. Like mortgage brokers in the run-up to the 2006–07 real estate crash, they had little interest in whether a purchaser understood the contract to which he or she was committing or, for that matter, was capable of completing the transaction. The typical financial institution provided a mortgage loan only if the purchaser made a down payment of 50 percent.[20] The 10 percent binder therefore implied a commitment to come up with another 40 percent, which for many aspiring property owners was easier said than done.

Coming up with more money would not be necessary, of course, if the binder, which represented first right of refusal on a desirable plot of land, was first sold off to another investor. The faster prices rose, the more prevalent this practice of flipping binders became. Successful binder boys graduated to real estate speculation, trading binders themselves. They put down 10 percent to purchase what was essentially an option on an undeveloped lot with the intention of immediately selling it at a higher price. In the summer of 1925, at the height of the boom, binders were bought and sold as often as eight times a day.[21] Clearly, Floridians in the 1920s had nothing to learn from, and could have taught a few tricks to, property speculators in the run-up to the subprime crisis of 2007–08.

This frenzied activity would not have been possible, of course, without the enabling role of the banks. "All the financial resources of existing banking and financial institutions were utilized to the full in financing this speculative movement," as Herbert Simpson, a contemporary expert on the Florida housing boom, put it in an article tellingly entitled "Real Estate Speculation and the Depression," published in the *American Economic Review* in 1933.[22]

> Insurance companies bought what were considered the choicer mortgages; conservative banks loaned freely on real estate mortgages; and less conservative banks and financial houses loaned on almost everything.

> Real estate interests dominated the policies of many banks, and thousands of new banks were organized and chartered for the specific purpose of providing the credit facilities for proposed real estate promotions. The greater proportion were state banks and trust companies, many of them located in the outlying sections of the larger cities or in suburban regions not fully occupied by older and more established banking institutions. In the extent to which their deposits and resources were devoted to the exploitation of real estate promotions being carried on by controlling or associated interests, these banks commonly stopped short of nothing but the criminal law—and sometimes not short of that.

Among the worst offenders were the building and loan associations, or B&Ls. In principle, these institutions, like mutual savings banks, were in the business of lending to their members.[23] One can't help but be reminded of the role in the 2008–09 crisis of Northern Rock, which similarly originated as a building society, the British equivalent of a B&L, though this is to get ahead of the story.

Building and loan associations were subject to a patchwork of variable and often lightly enforced state regulation.[24] Lack of more stringent regulation reflected, in part, the belief that their funding was secure. Members held shares rather than deposits, which they were not able to liquidate at their pleasure. This freed B&Ls of the bank-run problem. Loans were collateralized, it was supposed, by rock-solid real estate. B&Ls used minimal leverage; they did not issue debt to supplement their shareholders' equity. Unfortunately, these reassuring observations ignored the fact that those to whom they lent were themselves highly leveraged. They ignored the fact that not all real estate investments were rock-solid.[25]

The building and loan model had worked well in the nineteenth century. Now, however, it was enlisted by property developers to feed their ambitions and advance their narrow ends. B&Ls being easier to incorporate than depository institutions, real estate professionals established them for the purpose of financing residential development projects.[26] A captive board of directors there might be, but it exercised little oversight. Out the window went the notion that B&Ls should extend mortgage credit only to reliable borrowers so as to return income to their members. B&Ls became leaders in extending low-down-payment loans. They issued second mortgages for 30 percent of a property's value after the borrower secured a conventional first loan, typically for 50 percent, from a bank or insurance company, reducing the down payment to 20 percent.[27]

Another increasingly important source of finance for property development was securitization. Developers issued some $10 billion of real estate bonds in the course of the 1920s. A third were backed by residential mortgage interest payments, the remainder by future lease income from commercial real estate projects. Most of the latter were "single property bonds" issued to finance individual high-rise office buildings, apartments, and theaters, although there were also more complex instruments known as "guaranteed mortgage participation certificates"—what we would now call mortgage pass-through securities. Issued by title and mortgage guarantee companies and backed by commercial real estate projects, these more complex bonds were not easily traded. To entice investors to buy them, the issuer guaranteed the holder a rate of interest on the bond of 5 percent. This of course meant that the title or insurance company was on the hook if returns on the underlying investments fell short.[28]

In practice, insurance companies not only guaranteed the bonds but held them in their portfolios. Given the low interest rates on Treasury debt produced by Governor Strong's internationally minded policies, real estate bonds were an attractive alternative. Between 1920 and 1930, the share of life insurance company assets backed by real estate and urban mortgages rose from 35 to 45 percent. The securities in question were also marketed to the public by the bond houses that originated and distributed them. Investors relied on the good name, such as it was, of the originator. There is little evidence that they discriminated among these bonds, demanding higher yields as a function of the riskiness of the mortgage pool.[29] In this way large amounts of finance were channeled from individual investors into commercial and residential property development. In the event, the bonds in question, particularly those issued at the height of the boom, did not fare well in the 1930s.

This market in single-property bonds is a reminder that, along with the residential building boom in Florida, there was a commercial real estate boom centering on Chicago, New York, and Detroit.[30] The 1920s were the decade of the skyscraper. More ground was broken for the construction of tall buildings than in any other decade of the twentieth century. The skyscraper boom reflected advances in construction, including more durable steel-frame structures, improved elevator motors, and application of Tayloresque time-and-motion methods to construction labor. But it also reflected a new financial model in which buildings were erected not simply as company headquarters but as financial investments, in the expectation that space could be leased to rent-paying tenants. New York City's iconic Chrysler Building, for which ground was broken in 1928, served as the headquarters for the Chrysler Corporation but also had a variety of other tenants, from Pan American Airways to Adams Hats.

The commercial real estate market peaked later than the residential real estate market. But it too was inflated beyond all reason. And it too caused major dislocations when it came crashing down.

Still, nothing matched the extremes of the Florida property market. Miami saw the most frenzied speculation. The boom was more subdued in Orlando, and it did not reach Jacksonville until late, a fact that may have contributed to Ponzi's downfall. The population of Dade County tripled between 1920 and 1925. The assessed value of property in Miami rose even faster, from $63 million in 1922 to $421 million in 1926. At this point, one in three residents of what was by now a city of eighty thousand was employed in property development in one way or another. At the height of the boom, "[r]ealtors passed slowly through large crowds along Flagler Street. . . barking out their offerings to the accompaniment of music from bands hired by the major developers. . . . At times the sidewalks. . . were impassable due to the great number of realtors transacting their business."[31] Agents buttonholed prospects at the railway terminal as they stepped off the train. Newspapers were weighed down by real estate advertisements. By late 1925, daily editions of the *Miami Herald*, which previously ran to no more than twenty pages, had ballooned to eighty-eight.

Labor grew scarce despite the influx of construction workers, many of whom were reduced to living in tents. George Merrick, displaying his gift for promotion, built an encampment of 375 tents on the outskirts of his development, which he dubbed the "Cool Canvas Cottages at Coral Gables." The labor shortage was compounded by a building-material shortage aggravated by the decision of the Florida East Coast Railway to place a moratorium on shipments. Not only was the Miami rail yard jammed with twenty-two hundred freight cars, but the movement of freight was disrupted by the desperate efforts of the overtaxed railway to double-track its lines. With rail shipments at a standstill, steamships and sailboats were enlisted to move building material. Soon the Miami and Miami Beach docks were so jammed that unloading cargo became impossible. In September the steamship companies followed the railroad by embargoing shipments of furniture, construction machinery, and building materials.

All this was indicative of a bubble in its late stages. What caused it to burst is disputed, as is always the case with bubbles. A stock market correction was one possible trigger: the S&P Composite fell by 11 percent between February and May 1926. An unusually cold winter followed by a hot summer did not reassure homebuyers of Florida's temperate climate. A tropical cyclone came ashore in December 1925, eroding the state's pristine northeast beaches and dealing the market literally another blow. This was followed by a category 4 hurricane, described by the US Weather Bureau as "probably the most destructive hurricane ever to strike the United States," that hit Miami on September 18, 1926. Three Miami Beach residents died in the flooding, a hundred more in Miami proper.[32] The roof was torn off Carl Fisher's vacation home. The Congregational Church in Coral Gables became a relief center—not exactly the purpose for which Merrick had intended it.

Meanwhile, concerns with what was happening in Florida did not stay in Florida. Twenty thousand residents of Savannah, Georgia, up and moved to the Sunshine State, lured by the attractions of the property boom, alarming the city fathers. Investors attracted to Florida real estate withdrew some $20 million from savings banks in Massachusetts. Bankers throughout the Northeast and Midwest grew anxious about the loss of deposits and earning assets.

Concerned as much with the loss of population and deposits as the welfare of residents, officials inveighed against these excesses. Ohio bankers placed newspaper ads warning against doing business with Florida real estate developers. State Commerce Director Cyrus Locher and the chief of the Securities Division, Norman Beck, selflessly traveled to Florida to investigate the market firsthand. In the interest of protecting the small investor, they recommended that companies selling securities backed by Florida real estate should not be permitted to do business in their state. The Ohio state legislature obediently passed a blue-sky law forbidding the practice.[33] Anti-Florida propaganda included the assertion that good meat was unavailable in the state and dangerous reptiles were a threat in the major population centers.[34] The Better Business Bureau, investigating practices in Florida, detected widespread fraud and moved to publish its findings. Ponzi's arrest and prosecution were yet another unwelcome source of publicity.

As is typical of property markets, the volume of transactions fell first, followed after a time by prices. Local government revenues collapsed, and ambitious municipal development projects were abandoned. Bank clearings in Miami fell by two-thirds.[35] One hundred fifty banks failed in Florida and neighboring Georgia, most of them members of the Manley-Anthony chain, so called because the banks in question were all owned or controlled by a pair of bankers, James R. Anthony and Wesley D. Manley, heavily implicated in property speculation, not least in the form of investments in Merrick's Coral Gables development.[36] Depositors suffered some $30 million in losses. Manley himself was arrested for engaging in fraudulent transactions to shelter his remaining assets from bankruptcy proceedings. In his defense, attorneys invoked an insanity plea.

The financial repercussions did not extend beyond Florida and Georgia; still, the episode soured bankers and homebuyers on the residential real estate market. Residential housing starts nationally fell from 850,000 in 1926 to 810,000 in 1927, 750,000 in 1928, and 500,000 in 1929, despite the economy displaying no comparable weakness.

With hindsight, some argued that the Federal Reserve should have done more to restrain the property boom. Doing so would have limited the excesses in the financial system and prevented disruptive bank failures in the South. It would have moderated an important source of downward pressure on economic activity that was starting to be felt at the worst possible time, toward the end of the 1920s.

But targeting a specific sector, housing, would have created many of the same dilemmas as targeting the sterling-dollar exchange rate. Fed officials would have been diverting their attention from their fundamental task of providing an elastic currency, with adverse consequences for economic stability. Using monetary policy to damp down financial imbalances might have ended up only bludgeoning the economy.

In a couple of years, with the boom on Wall Street, the same dilemma would reappear. The question then was whether the Fed should raise interest rates in response to the rise in the stock market, in order to prevent development of even more serious financial imbalances and risks. Alternatively, it could continue to direct monetary policy to the needs of the real economy and address financial imbalances through other means. It could rely on what today we would call "macroprudential policy," and what contemporaries called "direct pressure," that is, attempting to limit bank lending to financial markets directly.[37]

Ultimately, the Fed chose the first alternative, raising rates. The consequences would be far-reaching.

CHAPTER 2 | Golden Globe

It did not take long for financial excesses to migrate from Flagler Street to Wall Street. The same low interest rates and expectations of rapid growth that fueled speculation in property encouraged investment in stocks and bonds. Enthusiasm for stocks was further stoked by exaggerated expectations of the profitability of what might be referred to as, if an anachronism is permitted, a new generation of information technology companies. Much as the Internet was used in the 1990s to trumpet the wisdom of investing in Internet-related companies, radio was used in the 1920s to encourage investing in radio. Radio Corporation of America was one of the most widely traded stocks on Wall Street from the time of its initial listing in 1924.

RCA and the other highflyers were helped along by Wall Street insiders like Walter Chrysler and the Fisher Brothers, of Fisher Auto Body fame. These individuals, auto industry veterans more often than not, were led by the mercurial founder of General Motors turned financial speculator Billy Durant. Under Durant's direction they formed syndicates to purchase RCA stock. They made the soaring price of RCA shares front-page news, attracting small investors and driving up prices still further. At this point the syndicate sold out, taking its profits and in so doing erasing earlier gains.[1]

But even these manipulations did not interrupt the upward trend in the market's favorite. From 1925 to the peak in 1929, the price of RCA shares rose more than tenfold adjusted for splits. The first true growth stock, RCA's price-earnings multiple ultimately exceeded 70. In the event, the company did not pay a dividend until 1937.

What was true of RCA stock was true generally. From early 1926 through mid-1929, the Dow Jones Industrial Average rose without significant interruption. Whether and at what point this should be regarded as a bubble continues to be disputed. It is suggestive that the Dow and corporate dividends rose in lockstep through 1927, as if the run-up in stock prices was a reflection of improved corporate earnings. But in 1928, share prices decoupled from dividends. From this point the Great Wall Street boom—some would say the bubble—was on.[2]

There were as many explanations for the rise in share prices as there were pundits. Expert commentators pointed to expectations of accelerating dividend growth, reflecting the installation of electric motors and adoption of assembly line methods. General Motors was a leader in realizing the potential of these innovations under the direction of the MIT-trained engineer Alfred P. Sloan, who had assumed control when the overleveraged Durant was forced out in 1920.[3] GM reported exceptionally strong profits in 1928, encouraging the belief that the same would be true of other technologically progressive firms. If so, investors overlooked the possibility that GM's strong profitability reflected the fact that Henry Ford had closed down his Highland Park factory in May 1927 in order to retool from the Model T to the Model A, diverting purchases toward his competitor. If savvy investors didn't understand the point, it was because GM's management under Sloan—who was a pioneer not just in scientific management but also in investor relations—did its best to convince them that the surge in profitability was GM's doing.[4]

The other obvious suspect was, as usual, the Fed. In 1927 the Reserve banks once more cut their policy rates to relieve the pressure on the Bank of England. Britain was still struggling to reduce the high labor costs with which it was saddled as a result of the return to gold in 1925. It had been hit in 1926 by a strike by coal miners protesting demands from their employers that they accept wage cuts of 25 percent. In addition, the Dawes Plan, which rescheduled Germany's post–World War I reparations in 1924, permitted the country to make those payments by exporting coal.[5] Germany's reentry into the international coal market now depressed prices, further ratcheting up the pressure for the British industry to cut costs by any and all means.

The coal strike lasted six weeks, during which production and exports were disrupted. The result was a deteriorating British balance of payments and gold losses for the Bank of England. Nor were the coal miners Montagu Norman's only problem; he also had the German and French central banks to contend with. First the Reichsbank and then the Bank of France began withdrawing gold from London. The French and German central banks were not reassured by Britain's contentious industrial relations. Not without reason, they saw gold as a better bet than sterling.

The resulting gold losses forced Norman to keep interest rates high, making for more stringent financial conditions. That in turn made things even more difficult for a British economy struggling to regain its footing.

Understanding how these tensions came about requires us to step back and consider the problem confronting the monetary experts who sought to reconstruct Europe's trade and payments after World War I. Like Benjamin Strong, they were convinced that the gold standard was the only durable foundation on which to build. They worried, however, that there might not be enough gold to firmly sink the pilings. Wages and prices had risen sharply during World War I, but gold supplies, reflecting the foibles of the mining industry, failed to follow. The traditional way of squaring this circle was by pushing wages and prices back down. But doing so was no longer palatable politically, in the wake of the war. The electoral franchise was now broader; men who had so valiantly fought in the trenches could no longer be denied the vote. Labor movements grew more militant, as underlined by the British coal strike.

For all these reasons, a policy of wage and price reductions was no longer easy to implement. Nor could more gold for backing money supplies, commensurate with higher prices, be conjured out of thin air, or from under the ground. The only solution was to find a substitute that central banks could use to supplement their existing gold reserves—that they could use to back their issuance of money and credit. Here the obvious supplements were the bonds issued by the US and British treasuries, which in principle were as good as gold—that would, in other words, be readily exchangeable into the yellow metal once the international gold standard was restored.

The idea that central banks should supplement their gold reserves by holding the securities of governments like Britain's was enthusiastically tabled by the British delegation to the international conference convened in Genoa in 1922. It was received with mixed feelings by other European countries anticipating that their securities would not enjoy the same privileged status. Moreover, anything that smacked of a relaxation of gold-standard disciplines raised a red flag in countries that suffered runaway inflation in the first half of the 1920s, Germany of course being the classic case in point. The hyperinflation that reached its chaotic climax in Germany in 1923 came to be seared, seemingly forever, in the country's collective consciousness. It took place when the gold standard was in abeyance; indeed, it is inconceivable that such high inflation could have occurred were the money stock tied to supplies of gold. In France, inflation never quite reached hyperinflationary levels but nonetheless had the same socially corrosive effects. The French inflation similarly took place when the gold standard was suspended. There, too, inflation stabilization coincided with the gold standard's restoration. French and German officials, rendered highly inflation-averse, therefore subscribed to a particularly rigid form of gold standard doctrine subsequently. The policies flowing from that doctrine ultimately created intractable problems not just for Germany and France but ultimately for the United Kingdom, the United States, and the world as a whole.

Inflation may be always and everywhere a monetary phenomenon, but in Germany and France it was more fundamentally a political phenomenon. At its root were the tangle between the two countries over reparations and the division between business and labor as to who would bear the cost not just of those transfers but also of basic social services. Following the signing of the Treaty of Versailles in that other famous Hall of Mirrors, the Inter-Allied Reparations Commission had set Germany's reparations bill at 269 billion gold marks, nearly 200 percent of GDP.[6] This immense sum was unrealistic and unattainable, as John Maynard Keynes, the lead treasury representative to the Paris peace conference, argued in *The Economic Consequences of the Peace*, the December 1919 broadsheet that made him a public figure. Economically, forcing the country to export a multiple of what it imported in order to make large transfers to foreigners threatened to turn Germany's terms of trade (the price of what it exported relative to the price of what it imported) against it, rendering those transfers still harder and, in the limit, impossible to achieve.[7] Politically, reparations fanned international tensions, to put an understated gloss on the point.

Not only were the Allies' reparation demands enormous, but payments were scheduled to continue for forty-two years. Imposing this heavy burden on future generations kept alive the question of who was responsible for starting the war, and then for losing it. This in turn inflamed the debate over who should now bear the cost of repairing the damage. Socialists insisted that business should pay through a one-time levy on business assets, or "seizure of real values." In the spring of 1921 the German Social Democratic economics minister Robert Schmidt proposed that the wealthy should be required to turn over 20 percent of their stocks and bonds and that a 5 percent tax should be paid on the value of landed property. Business and property owners were aghast. As an alternative they constructively suggested raising sales and excise taxes, which conveniently fell on workers.

Equally predictably, the fact that a substantial fraction of tax revenues would be devoted to funding transfers to foreigners reinforced the opposition of both sides to any increase in rates. In the end, the decision taken was to rely on sales and excise taxes, though not heavily enough to close the fiscal gap.

Notwithstanding these constraints, the German government initially pursued a policy of fulfillment. This meant making an effort to meet the terms of the reparations agreement, in the hope that good behavior would be rewarded. But rewards were not much on the minds of the French, who had problems of their own, which they blamed on the Germans. The French right wing, in particular, saw economic and financial concessions as a sign of weakness that would only encourage nationalist tendencies in Germany. It followed that the political strength of the center-right Bloc national, in power from 1919, made compromise unlikely.

In January 1923 the French communicated their response to German requests for concessions in no uncertain terms. Under instructions from the prime minister and minister of foreign affairs Raymond Poincaré, the French army reentered the Ruhr Valley, Germany's western industrial flank, with the goal of extracting reparations by force. Railway and mine workers sat down on the job, and the Reichsbank, at government instruction, printed the paper marks that businesses paid their workers.

Poincaré's role in these events, as in the subsequent French inflation and stabilization, was controversial. The French leader was born in 1860 in Bar-le-Duc, not far from France's eastern border. As a child he was prudent and politic; one story has him always carrying an umbrella to school, whatever the weather. He was just a week short of his tenth birthday, in 1871, when, with the defeat of the French Imperial Army, Prussian troops occupied his native Lorraine. Young Raymond's bedroom was taken over by a Prussian officer, and the family was forced to remain in the upper floor of its house for the better part of three years.

From this, one imagines, flowed the mature Poincaré's unbending attitude toward Germany, his refusal to offer concessions on the reparations issue, and his readiness to use military means to extract them. In the words of the British prime minister, David Lloyd George, "M. Poincaré was a Lorrainer born in a province repeatedly overrun and ravaged by Teutonic hosts . . . he himself twice witnessed the occupation of his own cherished home by German troops [the second time being in World War I]. . . . M. Poincaré is cold, reserved, rigid, with a mind of unimaginative and ungovernable legalism. He has neither humor nor good humor."[8]

This evaluation was harsh and condescending, as was not infrequently the case with Lloyd George's appraisals of his political rivals.[9] Still, it conveys a sense of the broader context causing French leaders to frame the reparations issue as they did.

Among the casualties of the Ruhr occupation were Weimar's fragile finances. Although the cost of goods and services purchased by the government rose in step with the price level, taxes were paid on earlier incomes and lagged behind. The 10 percent tax on wages, deducted at the source, remained in the hands of employers for two weeks, at the end of which it was paid to the government. With prices doubling every fortnight, the consequences for the public finances were dire.

On March 23 Berlin imposed an additional penalty on anyone who delayed payment of taxes. But the new measure did not begin to correct the problem. The government's finances deteriorated further, forcing still greater reliance on the printing press. Firms, banks, and individuals devoted more and more time to minimizing the impact of the inflation on their personal and corporate finances and less and less to productive activity.

Something had to give. That something, in the end, was French public opinion and German business. For German coal and steel magnates like Hugo Stinnes with investments in the Ruhr, the passive resistance was a disaster. Much like the Scottish-American industrialist Andrew Carnegie, Stinnes had worked his way up from modest means, acquiring a constellation of businesses centering on the coal, steel, and shipbuilding industries and enhancing their efficiency by placing them under one managerial roof. The scale of his business empire meant that Stinnes stood to take large losses if coal mining was immobilized for an extended period.

In September 1923, Stinnes and other leading industrialists therefore agreed to pay back taxes and make coal deliveries directly to France. Berlin agreed to call off the passive resistance. Paris signaled a willingness to reconsider the reparations bill. This renegotiation then followed with the formation of the Dawes Commission at the end of November.

Rudolph Havenstein, the lawyer and civil servant who had served as president of the Reichsbank since 1908, long denied the existence of a connection between his policies of providing cash in return for government and private paper on the one hand and inflation on the other, preferring to blame the price increases on foreign speculators. Havenstein's hand was strong, in that his appointment was for life. But the evidence against his position was, by now, overwhelming. The passive resistance having collapsed, his board turned against him. It announced that the Reichsbank would no longer provide cash and credit in return for the emergency notes issued by German business.[10] And to ensure that the central bank would not abandon its newfound firmness, the government established the office of the Currency Commissioner and authorized its occupant to issue a parallel and hopefully stable currency, the rentenmark. To this office it appointed a well-known banker with political connections, Hjalmar Schacht. Schacht took up the position on November 13.

This marked the death of the hyperinflation and, as it turned out, of Havenstein himself, who suffered a fatal heart attack on November 20, the same day Germany's currency was stabilized against the dollar. The government now moved to have Schacht head the Reichsbank as well. Never one reluctant to engage in self-promotion, Schacht went on to claim that he had engineered the stabilization. The fact of the matter was that he was fortunate enough to assume his position as central banker just as the problem was solved.

As the printing presses slowed, the government's accounts strengthened of their own accord. The hyperinflation was history. But it was not history that was quickly forgotten. This background explains how the Reichsbank became wedded to an unvarnished version of the gold standard. It explains why its successor, the Deutsche Bundesbank, continued to view the world through the lens of the 1920s, not just after World War II but, amazingly, into the twenty-first century—and even after it was absorbed into the European System of Central Banks.

France too suffered from chronic budget deficits. The coalition government formed by the Bloc national of conservative parties, which held power from 1919 through 1924, succeeded periodically in balancing the "ordinary" budget of current expenditures but couldn't agree on how to finance the "recoverable" budget of postwar reconstruction costs, so called because there was the expectation, or at least the hope, that these might be recovered from the Germans. At some level, budget deficits were not entirely undesirable, since they indicated that France was incapable of financing its reconstruction on its own. As the British treasury expert Ralph Hawtrey put it, for a French government to balance the recoverable budget "would have been an unpatriotic act, an expression of doubt as to the recovery of reparations in full."[11]

Leaving aside reparations, the obvious solution to the fiscal problem would have been for the Left to agree to an increase in consumption taxes and the Right to concede modest levies on income and wealth. With a bit of shared sacrifice, the problem could have been solved. But there was little inclination to share sacrifice under the circumstances. It was not unlike the German situation except that the reparations shoe was on the other foot.

Meanwhile, the French treasury had to pay the bills. Borrowing long term was not an option. By 1923 the public debt exceeded 170 percent of GDP, given obligations incurred during the war and a deficit on the recoverable budget that now added 7 percent of GDP to the debt every year. Investors were willing to take only short-dated securities that would mature before potential problems of default and inflation materialized. Accordingly, the treasury issued short-term bills, known as national defense bonds to accentuate their connection with World War I. And whenever investors demonstrated a reluctance to purchase them, it asked the Bank of France to step in as purchaser of last resort.

Short-term debt poses risks to financial stability, as a long list of twentieth- and twenty-first-century emerging markets have learned to their chagrin. Because short-term bills mature continuously, the government has to be able to roll them over—to issue new ones to replace those it pays off. If investors worry that inflation is poised to accelerate and therefore hesitate to purchase the new bills issued to replace those that have recently matured, the government will experience a funding crisis. It will be forced to turn to the central bank for cash. That cash, which the central bank provides by purchasing the government's newly issued bills, will increase the money supply and in turn worsen inflation, validating investors' fears. Thus, in the same way that a run on a bank by panicked depositors can be self-fulfilling, so too can be a run on a government's short-term debt.

The result of this dependence on short-term borrowing and advances from the Bank of France was, predictably, repeated bursts of inflation, each more serious than the last. Again, a bit of inflation was not entirely undesirable from the standpoint of the diplomats, since it testified to the country's inability to finance its reconstruction costs. But this was not the view of the French public, which, like all publics, felt inflation in the pocketbook. By the first quarter of 1924, at the height of the Ruhr occupation, retail price inflation had reached an alarming 36 percent.[12] Share prices reacted badly: the index of 300 French securities fell sharply in March. More than a year into the Ruhr occupation, it was apparent that France would not be able to extract more blood from the German stone.

Forced to choose between compromise and hyperinflation, the French Parliament, still dominated by the Poincaré-led Bloc national, opted for compromise, though just barely. After a contentious debate lasting two months, legislators agreed to raise taxes by 20 percent across the board in a measure known as the *double decime*. Since it would take time for the additional tax revenues to materialize, J. P. Morgan, the French government's banker, agreed to provide a $100 million credit conditional on the Parliament first passing the tax increase. Another £4 million (roughly $19 million at the prevailing exchange rate) was then extended by the investment bank Lazard Frères.

This was enough to stabilize the franc for the moment.[13] But it was not enough to prevent inflation from resuming, since the underlying conflict was not resolved. It was not clear whether the *double decime* would be enough to balance the budget inclusive of reconstruction costs; the answer would depend on, among other things, taxpayer compliance. And it was not clear whether the middle classes, on whom the new taxes fell, would be prepared to accept them. The dispute over who would bear the burden heated up again as soon as it became evident, with the failure of the Ruhr invasion, that the answer was "not Germany."

In elections in May 1924, the Bloc national lost its majority in the Chamber of Deputies, as the unhappy middle-class voters who bore the brunt of Poincaré's taxes turned out in large numbers. The Radicals (essentially, reformist bourgeois liberals), with support from the Socialists, then formed a left-of-center government, the Cartel des Gauches, headed by the longtime Radical politician Édouard Herriot, and sought to reopen the fiscal question. With the 1924 compromise in the balance, there was renewed uncertainty about whether the budget would be balanced. Herriot was sympathetic to the Bolshevik experiment, having visited the Soviet Union in 1922.[14] Though not a Communist himself, his selection as prime minister alarmed the Right. Worried that his government might seek to close the deficit by imposing a levy on wealth, investors rushed to sell their government bonds. The franc plummeted on the foreign exchange market as bondholders scrambled to get their money out of the country. Inflation accelerated again, and tax revenues failed to keep pace with the rising cost of public-sector outlays, as in Germany in 1923. With the government now unable to market even short-term bills and reluctant to raise the rate of interest they offered for fear that this would validate expectations of inflation and worsen the budgetary situation, this left only the Bank of France as bond purchaser of last resort.

The central bank thus faced a dilemma. Parliament had placed a ceiling in 1920 on how many currency notes the bank could issue precisely in order to limit the recourse of governments to inflationary finance. Purchasing government bonds in substantial amounts might now cause those limits to be breached. In an extraordinary turn of events, the Bank of France chose to falsify its published statements, disguising the fact that it had breached the legal ceiling on note issuance. The deception was elegant in its simplicity: the excess was simply placed under the heading "various" (*divers*) on the two sides of the Bank's balance sheet.

In fact, this violation had begun already the previous March, under the earlier Poincaré-led Center-Right government. Secretary General Albert Aupetit, Bank of France Governor Georges Robineau's headstrong second in command, took the initiative in an effort to avoid torpedoing the Poincaré government's stabilization program.[15] To not finance the government's transitional deficits would have precipitated a funding crisis, putting an abrupt end to Poincaré's stabilization effort. For Aupetit, who saw Poincaré's stabilization as the country's best remaining hope and who was anxious to give it time to work, breaking the law was a lesser evil.

With the temporary success of Poincaré's stabilization, the note circulation fell safely below the legal maximum. But Aupetit continued to falsify the bank's weekly statement, understating the note issuance in an effort to convince speculators that the stabilization was a success. In October, as the stabilization lost traction following the change in government, the note issue then rose above the legal ceiling a second time, a fact that the central bank, under Aupetit's leadership, once again hid from wider view.

At this point, Bank of France officials informed Prime Minister Herriot and his finance minister, Etienne Clémentel, of the troubling state of affairs. But they conveniently neglected to mention that the problem had first arisen under the Bloc national government, so as to impress upon Cartel leaders that their own budgetary policies were to blame. This may help to explain why Herriot, though now aware of the deception, hesitated to go public.

The longer the status quo persisted, the larger the gap became between the central bank's published balance sheet and the actual monetary circulation. And the larger the discrepancy, the more difficult it was to hide. By early 1925 its existence was common knowledge among members of the finance committees of the Chamber and Senate.[16] The situation created considerable tension within the Bank of France, to the point where François de Wendel, a leading member of the central bank's governing board, threatened to resign over the matter.

De Wendel's threat tipped the balance toward the faction that favored coming clean. When on April 9 the falsification of the bank's balance sheet was finally revealed, Herriot placed the blame on the bank. He insisted that the actions of his government were no different from those of its predecessors, but no matter. He was forced to resign, following a vote of no confidence in the Senate.

Specialists will recognize here what economists refer to as "fiscal dominance."[17] When fiscal policy makers decide, in their wisdom, to run a budget deficit, and there is nothing the central bank can do about it, the central bank will then have no choice but to buy the government's bonds and tolerate a higher rate of inflation than it would prefer, if it is otherwise impossible to finance the deficit and the alternative is default and financial chaos. In the French case, the central bank went so far as to disregard the law.

There is a parallel with the provision in the statute of the European Central Bank prohibiting it from buying the newly issued bonds of governments. That provision is designed to protect the ECB from fiscal dominance and the European public from inflation. There is also a parallel in how the ECB felt compelled to parse, if not exactly disregard, the provision in 2012 when, in the face of a bond-market crisis, it announced its program of Outright Monetary Transactions to buy government bonds on the secondary market.[18] Sometimes, even central bankers are forced to conclude, there are worse things than a bit of inflation.

The problem in France was that the resulting inflation was more than a bit. It persisted for the better part of two years, as one prime minister after another—there were seven in all from June 1924 to July 1926—grappled with the unwillingness of the Left and Right to compromise over the budget. The Left would propose a special levy on capital, and the wealthy would shift their savings abroad. The Right would then propose new taxes on consumption, and workers would take to the streets.

The resulting inflation was ruinous for small savers, rentiers, and military pensioners, the members of society least able to protect themselves. July 1926 saw protests by more than twenty thousand former servicemen and their sympathizers outside the Chamber of Deputies. Blaming foreigners for manipulating the franc and fomenting the inflation, the mob vented its anger by attacking Paris-by-night buses, the preferred vehicle of American tourists. Wealthy French families, fearing social unrest, sent not just their savings but now also their families abroad.

At this point the inflation was seriously disruptive; in some circles it was seen as a threat to French democracy itself. The Left-dominated Chamber of Deputies, in desperation, agreed on July 22 to allow Poincaré to return at the head of a government of national union.

Notwithstanding his harsh policies toward Germany, Poincaré held a reputation for prudence and caution. He was "the man of stability," having made his name by helping to organize the nation's finances during World War I. He had engineered the temporarily successful 1924 stabilization, after all. By raising taxes prior to a parliamentary election, he put the nation's finances before political gain and paid the price.

Poincaré was also a man of stability in that he was not closely identified with either the Right or the Left. In the Chamber of Deputies he was associated with the Moderates. The Bloc national may have been center-right, but Poincaré also had friends and allies among the Socialists, not least Léon Blum, the future premier. As the product of a middle-class family, he identified with the small savers least well positioned to protect themselves from the effects of inflation. Moderation was what the circumstances required. When it came to domestic policies, as opposed to his dealings with Germany, it was what Poincaré offered.

Poincaré was asked to form a union government combining his Center-Right constituency with elements of the Left. There was now a consensus that the politicization of fiscal policy had gone too far. Poincaré's appointment and his formation of a national unity government acknowledged this fact. The politicians, evidently, had learned the hard way that budgetary solutions needed to be agreed by consensus, not forced on the Right by the Left, or vice versa.

Fostering that consensus was now Poincaré's task. Procedures for monitoring incomes and collecting taxes were upgraded with the goal of raising revenues. There was some streamlining of the public administration, with the closure of local law courts and other administrative offices. Funds from the state tobacco monopoly were earmarked for servicing and retiring public debt. This confirmed that there would be no expropriation of the rich, something that the formation of a union government had already, in fact, made clear. Finally, Poincaré proposed to convert the short-term national defense bonds that had been the immediate source of financial vulnerability into stabler long-term obligations.

The desire to shift the burden of stabilization, whether from capital to labor, from the middle classes to the wealthy, or from France to Germany, had burned itself out in the fires of inflation. As a result, Poincaré's limited measures sufficed to cement the 1926 stabilization, which took hold in August. Prices stopped rising; the exchange rate, having depreciated previously, now began to appreciate, to the discomfort of French exporters, who enjoyed their newfound competitive advantage, leading the Bank of France to buy foreign currencies in exchange for francs to slow the currency's rise. The franc was then pegged to sterling and the dollar at the end of 1926, and gold convertibility was restored in 1928.

France's gold standard statutes, like Germany's, were rigid. They prohibited the central bank from purchasing government securities on the market (engaging in "open market operations") and otherwise providing direct financing to the government. As in Germany, a long shadow was cast by the inflation and the social divisions it laid bare.

Halting inflation, first in Germany and then in France, encouraged flight capital to return. Inflation having been subdued, there was more confidence that investments would hold their value. The commitment to return to the gold standard, in order to endure, required governments to balance their budgets. Investors thus had new reason to hope that the long succession of deficits and conflict over the incidence of taxes had finally come to an end. In time, this idea that stabilizing the currency somehow guaranteed responsible fiscal behavior and relieved investors of the risk of sovereign default would be revealed as mistaken. This was of course the same mistake committed by those who purchased the bonds of Southern European nations following the advent of the euro in 1999. It had the same consequences.

The influx of foreign money was a mixed blessing for the French and German economies, since it placed upward pressure on their currencies. To prevent the exchange rate from shooting through the roof, to the detriment of exporters, the Reichsbank and Bank of France bought up those foreign funds, in return for marks and francs. But the foreign securities, and sterling securities in particular, acquired in this way were not obviously as good as the gold for which they could be exchanged.

Hence Norman's problem. In the second half of 1926 the Reichsbank began cashing in its sterling balances, taking gold from the Bank of England in return. In the six months ending in February 1927, British gold exports to Germany approached $60 million, a considerable sum. Schacht, now firmly installed as head of the German central bank, was conscious of the constructive role Norman played in the negotiation of the Dawes Plan, under which reparations were reduced and a stabilization loan was secured. But, any such gratitude notwithstanding, Schacht's first responsibility was for his portfolio. His belief in the importance of following the gold standard rules was not tempered by emotion. Schacht therefore presented the sterling he acquired through his sterilization operations to the Bank of England for conversion into gold.

Norman had not been as helpful to the Bank of France when it was grappling ineffectually with debt and currency crises in 1923, 1925, and 1926. He saw France as having been particularly obstructionist in negotiating a reparations settlement. There was also the fact that the Bank of England and Bank of France were vying for influence in Central and Eastern Europe, whose financial business they sought to attract to London and Paris. Although Émile Moreau, successor to Robineau as governor of the Bank of France from 1926 to 1930, characterized his English counterpart as "aimable et charmant," Norman had rebuffed France's efforts to obtain concrete assistance for financial stabilization.[19]

Now, as capital flowed from Britain to France, the tables turned. The foreign assets acquired by the Bank of France were denominated in sterling and issued in London. Responding to the same uncertainties as the Reichsbank, Moreau took the first opportunity to cash them in. He was aware that his request, by draining gold from the Bank of England, would force Norman to raise "Bank rate," the rate the Bank of England charged when discounting bills for other financial institutions. But this was not an undesirable side effect. If the result was tighter conditions in London, the source of a significant fraction of the short-term capital flooding into France, then the policy had corollary benefits from the French point of view. If it created difficulties for the Bank of England, then so be it.

Britain's one source of leverage was the World War I debt that France owed Britain. Norman therefore suggested to Winston Churchill, the Chancellor of the Exchequer, that he ask for its repayment to be accelerated. This threat, thinly veiled, led Moreau to negotiate a compromise in June 1927 in which the Bank of France limited its further conversion of sterling into gold to £30 million. Norman's aggressive diplomacy solved, or at least put off, the immediate problem. But it did not enhance the prospects for friendly monetary relations going forward.

Strong monitored these Franco-British negotiations from his perch in New York. Excepting a hiatus in late 1926 spent in Biltmore, North Carolina, while recovering from pneumonia, he was in almost continuous contact with his friend Norman by cable and letter. Knowing that the opinions of the American central banker carried weight, Moreau forwarded Strong his own account of the Bank of France–Bank of England negotiations in an effort to ensure that Strong formed a balanced view.

The net effect was to impress on Strong the tenuousness of the British position. The continued stability of sterling hinged on the cooperation of the Reichsbank and the Bank of France, but this was not something to be taken for granted. At the same time, these sensible men understood that they were in it together. Strong had held friendly bilateral discussions with Norman, Schacht, and various Bank of France officials. In the case of Norman and Strong, there were more than just friendly bilateral discussions. The two men had met already during World War I on the occasion of Strong's inaugural trip to Europe as governor of the New York Fed and formed a personal bond. They became pen pals and vacationed together twice a year for much of the 1920s, health permitting. If Norman had been able to develop such a fruitful relationship with Strong, why then couldn't these other central bankers reach a similarly harmonious understanding in face-to-face meetings?

Norman therefore suggested that he and Strong meet together with Schacht and Moreau. Strong issued the invitation—he was still recovering from his bout of pneumonia, dictating that the meeting take place in the United States.

Moreau, possessing no English, even then the universal language of central banking, passed the invitation to Charles Rist, his number two.

Strong, Norman, Schacht, and Rist assembled in the first week of July in Woodbury, on Long Island, at the home of US Treasury Undersecretary Ogden Mills. This monumental county seat, designed by John Russell Pope, was one of the most lavish on Long Island, with views in all directions and a central portion that "rises through two stories, with its cornice and parapet of somewhat Italian feeling . . . flanked and carefully held by the well-proportioned blocklike wings whose flat fretted cornices carry the line of the first story order around the entire building."[20]

This was opulent architecture more than befitting a meeting of the world's leading central bankers. Whether the international financial architecture was up to the task was another matter. For five days the central bankers conferred. It was like herding cats; Strong failed even to get all three of his colleagues into a room at the same time. Norman emphasized the delicacy of his position and his limited gold reserves. Schacht and Rist reiterated the importance of adhering to the rules of the gold standard as strictly as possible.

Process of elimination left one central bank to take the initiative. The result was another attempt by Strong to convince the Federal Reserve banks to agree to cut interest rates to support sterling. There was no little irony in the outcome. Strong had agreed to convene the meeting in an effort to encourage adjustments by the European bankers, but it was he who ended up doing the adjusting.

To make the case, Strong saw to it that Norman, Schacht, and Rist continued on to Washington and New York to meet with the board of governors and with Daniel Crissinger, chairman of the New York Fed. These officers of the Fed, evidently, were convinced. By the end of August, eight Reserve banks had voted to cut interest rates by half a point. Adolph Miller would have dissented, but he was summering in California. Later he criticized the decision as giving "a further great and dangerous impetus to an already overexpanded credit situation, notably to the volume of credit used on the stock exchanges."[21]

The majority decision was then imposed on the dissenting Reserve banks, starting with the Federal Reserve Bank of Chicago. This was the first time in the history of the Federal Reserve System that the board of governors imposed its will on dissenting Reserve banks. Strong was pleased, no doubt, to see the board force the other Reserve banks into line. Higher rates in the Midwest than the East had allowed banks in the interior to borrow more cheaply in New York in order to lend to their own customers, resulting in a drain of reserves and gold from the New York Fed. This assertion of authority by the board was an important step toward an integrated Federal Reserve policy, in which decisions were not made by individual Reserve banks following their parochial concerns but instead coordinated across districts with the needs of the national economy in mind.

Unfortunately, it was only a step. When the crunch came, in 1929, coordination would be lacking. And the consequences would not be pretty.

CHAPTER 4 | By Legislation or Fiat

Countrywide credit was the lender at the epicenter of the housing boom, and Angelo Mozilo was the public face of Countrywide. The Bronx-born son of first-generation Italian Americans, Mozilo had gone to work in his father's butcher shop at the age of twelve and then as a messenger for a Manhattan mortgage lender. By the time he was sixteen he had worked his way up from ferrying paperwork to processing loans, progress testifying either to his exceptional ambition or to the straightforward nature of underwriting in the era of plain-vanilla mortgages.

Mozilo stayed with the same firm through his high school and college years and until it merged with Lomax Realty Securities, headed by industry veteran David Loeb. In the mid-1960s Loeb sent Mozilo to Central Florida, which was in the grips of a real estate boom not unlike that of the 1920s. Observing that the boom was being driven by the influx of space engineers to Cape Canaveral, Mozilo recommended taking a stake in a Brevard County subdevelopment. When the bet paid off, Loeb made Mozilo his sidekick.

When Lomax Securities was bought out in 1968, Loeb and Mozilo set out to create their own mortgage company, which they dubbed Countrywide Credit Industries. Initially the name was indicative more of the partners' ambition than the reality. The duo worked out of a single office in Anaheim, California, the Inland Empire to the east beckoning as the final frontier. Loeb served as the firm's strategist, Mozilo as its sales force of one.[1]

Although the business gained traction, costs showed a troubling tendency to escalate. Recruiting and retaining salesmen required paying generous commissions. Turnover was high, in part because Mozilo was a demanding boss—"a son of a bitch," as he proudly put it. Loeb therefore proposed eliminating the sales force and using direct advertising to solicit applications, something that had not previously been tried in the mortgage-banking industry. Mozilo, a salesman himself, resisted but eventually agreed to take the plunge.

Attracting business by advertising meant competing on price, which in turn required keeping costs down. The company's retail offices were standardized, situated in strip malls, and permitted no more than two full-time employees. Gradually the strategy began paying dividends. In the course of the 1970s Countrywide Credit opened four additional offices in California. By 1980 it had forty offices in nine states, no mean feat in a period when mortgage and housing markets were buffeted by interest rates of 20 percent. By the mid-1980s, the 40 offices had grown to 104 and the nine states to twenty-six. By 1992, with nearly 400 branches, Countrywide was the largest mortgage banker in the country and, for that matter, the world.

Reflecting its emphasis on low costs and standardization, Countrywide came to be known as the McDonald's of mortgage banking. The label reflected the extent to which it successfully reduced the home mortgage to a commodity, the financial equivalent of a hamburger, and the loan officer to the white-collar equivalent of a hamburger flipper. Countrywide was an early adopter of information technology to process applications. By the mid-1990s, fully 70 percent of loans passing through its automated underwriting system required no human intervention. Standardization and the commitment to information technology, together with reliance on temporary employees, allowed the company to ramp up when opportunity beckoned and downsize when demand slackened. Countrywide started reselling the mortgages it originated to Freddie Mac and Fannie Mae almost as soon as the two government-sponsored housing agencies were authorized to purchase mortgages not guaranteed by the US government.[2] It diversified into loan servicing, buying the right to service mortgages from other lenders to insulate itself from the ups and downs of loan origination. When interest rates were low, loan origination was big business, but when they were high, prepayments were less common, rendering servicing more profitable. Mozilo referred to this as Countrywide's "macro hedge."

Eventually some of these innovations came to be viewed in a less favorable light. That a majority of loan applications were processed without human intervention meant no independent verification of borrowers' claims of income. Aware that their tenure with the firm was likely to be limited, branch managers focused on originating as many mortgages as possible without due attention to their quality. Loan servicing turned out to provide less insulation from the ups and downs of interest rates and the housing market than Mozilo had posited. But these were problems for the future.

By the 1990s, organic expansion had become harder for what was now the largest player in the mortgage banking industry. This led Mozilo to the fateful decision to expand into low-income lending. In 1993 Countrywide launched a program that he ambitiously christened "House America." Mozilo marketed the initiative as bringing the American dream of home ownership to low-income and minority borrowers. Videos promoting it were narrated by the stentorian Hollywood actor James Earl Jones, who commanded the same vocal authority as William Jennings Bryan.

In practice, House America allowed low-income households to assume a heavier burden of mortgage debt. Countrywide adopted "flexible underwriting practices," reprogramming its automated underwriting systems to approve mortgages for individuals and households lacking the well-documented employment and credit histories needed to obtain conventional loans. "Flexible underwriting practices" was code for down payments of as little as 3 percent, offered in return for a higher interest rate.

This was not the birth of subprime lending. Credit for that invention goes to Long Beach Savings & Loan, a small Orange County–based thrift that eventually morphed into Ameriquest Mortgage. But now Countrywide, the leading player in mortgage origination, jumped with both feet onto the bandwagon.

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Countrywide was emblematic of what came to be known as the shadow banking system of nonbank financial institutions engaged in mortgage underwriting, securitization, and other activities that had once been the preserve of banks and savings and loan associations (S&Ls), the descendants of the building and loans of the 1920s. The growth of shadow banking in turn reflected a process of financial liberalization stretching back to the early 1970s, not incidentally the same point in time when Loeb and Mozilo established their California-based underwriting operation.

The Wall Street crash of 1929 and the banking crises that battered the US economy prompted the adoption of a panoply of new regulations affecting the banking and financial system.[3] The Glass-Steagall Act separated investment and commercial banking and prevented deposit-taking commercial banks from engaging in security and insurance underwriting. Also in 1933, the Federal Reserve Board adopted "Regulation Q," prohibiting banks from paying interest on demand deposits (essentially, checking accounts), while placing ceilings on permissible rates on time and savings accounts.[4] The Securities and Exchange Act created a government commission to oversee stock and bond markets. The Commodity Exchange Act extended regulatory authority to futures markets.

The result appears, from a distance, as a golden age of financial stability. Between the end of World War II and the 1970s, bank failures were rare. Financial institutions specialized in different types of lending. Banks extended corporate and consumer loans. S&Ls engaged in mortgage lending. Each type of institution was overseen by its respective regulator. The stock market rose and fell, as stock markets do. But when it fell, it did not bring down the financial system and the economy with it.

As time passed, the financial establishment grew restive. Memories of the unstable 1930s faded. The thrift industry, enjoying tax and regulatory advantages, gained market share at the expense of the banks. Deposit taking and lending in London—what came to be known as the Eurodollar market—subjected the banks to additional competition.

A further source of competition, whose existence would have profound implications in 2008, came in the form of money market mutual funds. The first of the breed, the Reserve Fund, was created in 1971 by a pair of failed New York financial consultants, Harry Brown and Bruce Bent.[5] Money market funds invested in treasury bills and commercial paper, not corporate, consumer, and mortgage loans in the manner of a bank. Free of Regulation Q ceilings, they were able to offer savers a more attractive combination of liquidity and interest than on bank accounts, but without, it should be noted, the protection of deposit insurance.

The innovation was heralded as a significant step in the direction of financial democracy, given the miserly returns available on bank accounts. The MIT economist Paul Samuelson, himself a Nobel Laureate, proclaimed that Bent and Brown similarly deserved a Nobel Prize for their innovation. The founders characterized their achievement more modestly. "I wish I could say that our 'invention' resulted from any brilliance on our part," Brown later remarked, "but it was actually a combination of the threat of starvation and pure greed that drove us to it."[6]

The absence of deposit insurance and of any requirement for money market funds to hold reserves as a buffer against risk was justified on the grounds that fund managers invested only in safe assets and managed their shareholders' money conservatively. One dollar invested in a money market fund would always be worth $1, or so the argument ran. The presumption did not anticipate the tendency for fund managers to move into riskier investments as Regulation Q was relaxed and competition created pressure to boost yields, something that regulators first failed to notice and then were reluctant to address, given an increasingly powerful mutual fund lobby. The presumption that shares in money market funds would never fall below par did not anticipate the failure of Lehman Brothers, Lehman being a consequential issuer of the kind of high-yielding short-term notes that the managers of money funds found irresistible.

Commercial banks, concerned about the erosion of their deposit base, had been lobbying for the removal of Regulation Q for years. Their calls gained urgency with this new competition and even more when inflation rose, undermining their ability to compete for savings. Regulation Q ceilings were finally phased out by the ironically entitled Depository Institutions Deregulatory and Monetary Control Act of 1980—ironic since its passage resulted from the Fed's loss of monetary control.

The abolition of Regulation Q unleashed a cascade of unintended consequences. A first consequence was to intensify the pressure on S&Ls, which had previously been permitted to offer higher deposit rates than other financial institutions.[7] To limit the damage, the Garn–St. Germain Act of 1982 allowed S&Ls to engage in a range of commercial banking activities, those related to consumer lending, for example, above and beyond their traditional remit of taking deposits and extending mortgage loans. Among its other provisions was one authorizing the extension of adjustable rate mortgage loans. President Reagan, on signing the bill, called it the first step in a "comprehensive program of financial deregulation."[8] Little did he know.

Garn–St. Germain helped set the stage for the S&L crisis of the 1980s by allowing thrifts to take on additional risk without at the same time doing anything to restrain them. But equally important was how the provision of additional financial services by the thrifts intensified the pressure on the banks.[9] Commercial banks had long been frustrated by their inability to underwrite corporate and municipal bonds. Securities markets now having recovered from the 1930s and World War II, big corporate borrowers took to issuing commercial paper and junk bonds. With these instruments offering corporate borrowers new ways of financing themselves, reducing their dependence on bank credit, bank profits were squeezed.[10] The big banks that were the big companies' traditional interlocutors were hurt the most.

At first, money-center banks, with Citibank (the rebranded National City Bank of Chapter 3) in the vanguard, found a new market in syndicated loans to governments in Latin America and Eastern Europe, in an echo of the foreign lending boom of the 1920s. But by the early 1980s these loans had gone bad. For the regulators to insist that the banks acknowledge their losses was not an option, however; doing so would have bankrupted the Federal Deposit Insurance Corporation. Instead the banks were allowed to earn their way back to health, and regulation was loosened to facilitate their efforts.

In December 1986, in response to a petition from J. P. Morgan, Bankers Trust, and Citicorp (the holding company parent of Citibank), the Fed creatively reinterpreted the Glass-Steagall Act to allow commercial banks to derive up to 5 percent of their income from investment banking activities. The investment banking activities in question included underwriting municipal bonds, commercial paper and, fatefully, mortgage-backed securities. In 1987, over the opposition of its deregulation-skeptical, soon-to-be-former chairman, Paul Volcker, the Federal Reserve Board authorized several large banks to further expand their underwriting businesses. If ever there was an illustration of how lame-duck status can weaken a Fed chair, this was it. Under Volcker's successor, the liberalization-minded Alan Greenspan, the Fed then allowed bank holding companies to derive as much as 25 percent of their revenues from investment banking operations.

By the 1990s, then, Glass-Steagall was already weakened. The fatal blow was struck by the merger wave that swept investment banking and brokerage toward the end of the decade. Morgan Stanley, an investment bank, merged with Dean, Witter, Discover & Co., a brokerage and credit card company, in 1997, while the trust company and derivatives house Bankers Trust acquired Alex. Brown & Sons, an investment and brokerage firm. This consolidation of investment houses, brokers, and insurance companies threatened to further disadvantage the banks, which responded by lobbying even more intensely for the removal of remaining restrictions on their operations.

And if lobbying was not enough, there were other ways of forcing the issue. Citicorp moved in 1998 to purchase Travelers Insurance Group, notwithstanding Glass-Steagall provisions requiring it to sell off Travelers' insurance business within two years. The merger would allow Travelers to market to Citicorp's retail customers not just insurance but also its in-house money market funds while giving Citicorp access to an expanded clientele of investors and insurance policyholders. Its main shortcoming was its incompatibility with Glass-Steagall.

The chairmen and co-CEOs of the merged company, John Reed and Sanford Weill, mounted a furious campaign to remove Glass-Steagall's nettlesome restrictions before the two-year window closed. Weill formed an alliance with David Komansky of Merrill Lynch and Phil Purcell of Morgan Stanley to lobby for change. Their arguments received a sympathetic hearing from the Greenspan Fed and also from the White House, in the person of President Clinton's advisor for financial reform, Gene Sperling, and from the Treasury Department, especially when Lawrence Summers succeeded Robert Rubin as secretary in mid-1999.[11] (Rubin left for an advisory position with none other than Citigroup; he started in October.) They were warmly received in the halls of Congress, where bank lobbyists freely roamed.

The main opposition came from Phil Gramm, who complained that no big banks or insurance companies made their headquarters in Texas. Weill lobbied Gramm incessantly; in his 2006 autobiography, Weill reports running into Gramm at a dinner party in 2004 where Gramm remarked, "Congress made a mistake. It should have called the new law the 'Weill-Gramm-Leach-Bliley Act!'"[12]

Glass-Steagall was finally euthanized by Gramm-Leach-Bliley, which repealed residual restrictions on combining commercial banking, investment banking, and insurance underwriting, in November 1999. Weill proudly mounted a four-foot slab of wood on his office wall, etched with his portrait and the words "The Shatterer of Glass Steagall." Much later, in 2012, reflecting on the crisis, he acknowledged that removal of the Glass-Steagall restrictions had been a terrible mistake.[13]

The abolition of Glass-Steagall closed a chapter in US financial history. But it was also indicative of a broader deregulatory trend. Other manifestations included the Riegle-Neal Interstate Banking and Branch Efficiency Act of 1994, which repealed prohibitions on cross-state branching and opened the door to mega-banks. Likewise, the Commodity Futures Modernization Act (CFMA) of 2000 eliminated federal and state regulatory oversight of financial derivatives. CFMA relieved issuers of credit default swaps from having to hold reserves against the possibility that they would actually have to make payments to purchasers of those instruments. Credit default swaps (CDS) had been designed to allow investors in mortgage-backed securities to insure themselves against default on the mortgages in the underlying pool. Now, however, CDS were purchased by buyers who did not also purchase the asset against whose default the insurance was written but simply wished to bet against the housing market. The decision in 2000 to relieve issuers of the obligation to hold reserves against liabilities associated with these contracts would have momentous implications for what followed.

And where deregulation could not be achieved by legislation, it proceeded by fiat. The activist chair of the Commodity Futures Trading Commission, Brooksley Born, was forced out in 1999 by a hostile Fed chairman and treasury secretary after recommending against further deregulation of derivatives. The Securities and Exchange Commission (SEC), under the more accommodating Harvey Pitt and William Donaldson, then loosened its rules for the financial reserves that had to be held by the brokerage units of banks.

Nor was deregulation limited to the United States. For many years European countries had assiduously regulated their banks and securities markets. In 1986, British Prime Minister Margaret Thatcher, already famous for her commitment to deregulation, then turned her attention to financial markets. Having previously reduced top tax rates, liberalized labor markets, and sold off much of the public housing stock, Thatcher launched her "big bang" financial reform, reducing regulatory restrictions with the goal of enhancing London's position as an international financial center.

Meanwhile the European Union moved to create a single, integrated market in merchandise, labor services, and financial capital. Overregulation, according to the widely accepted diagnosis, was to blame for the slow growth and high unemployment plaguing the continent, and the single market, by prying open the door to cross-border competition, was the pivotal reform that might force European states to lighten that crushing regulatory load. The diagnosis that other sectors and activities were suffering from excessive regulation was extended, for better or worse, to financial services. As a result, the Single European Act, with its goal of establishing a continentwide market by 1992, permitted big European banks to expand into neighboring countries.

At first the banks were slow to respond, and regulators were reluctant to let them. This changed, however, with the establishment of the euro in 1999, which removed exchange-rate risk as a deterrent to cross-border business. As the competition to provide financial services intensified, European banks levered up their bets. Banks in Northern Europe, where interest rates were low, found it impossible to resist the higher yields on loans to Southern European banks and investments in Southern European bonds. Southern European banks, for their part, welcomed the cheap finance provided by their Northern European counterparts, using it to make speculative real estate loans and buy the bonds of their sovereigns.

The result was explosive growth of banking in Ireland and across Southern Europe. In some countries, the assets and liabilities of the banking system grew to large multiples of gross domestic product. In Ireland, claims on the banking system, at their peak in 2007–08, reached 400 percent of GDP.[14] In Cyprus, the liabilities of the banking system peaked out at an extraordinary eight times national income.[15]

Thus, no one factor explains the deregulation of banking and financial services. Memories of how banks had collapsed in the 1930s faded with time. Foreign competition created pressure to eliminate restrictions on the range of permissible bank activities. Financial innovation, from development of new lending instruments to establishment of money market mutual funds, undermined the effectiveness of existing regulation.

The dilemma for policy makers was whether to extend existing regulation to these new entities and markets or to relax restrictions on banks and other incumbents complaining that the playing field was tilted against them. A range of arguments militated in favor of the latter. Banks pointed to advances in technology making it easier to use data from one business to benefit another. Computers made it possible to share information and products across activities in the manner of Citibank and Travelers Insurance, rendering the regulatory walls separating banking from insurance more irritating and, arguably, less efficient.[16] Automated credit-scoring techniques like those pioneered by Countrywide Credit encouraged not just routinization of bank lending but also securitization of mortgages, loans, and credits, creating another argument for allowing lenders to branch into underwriting. Commercial banks could cite the experience of the 1990s, when their limited forays into investment banking enhanced profitability without causing noticeable problems.[17]

Academics like the aforementioned Paul Samuelson, together with Eugene Fama of Chicago and Robert Merton of Harvard, meanwhile provided theoretical models of the efficiency of freely functioning financial markets. In reality, their models were only an intellectual point of departure. They identified the restrictive conditions under which asset prices incorporate all the information needed for market efficiency. It was not long before researchers had built up a catalog of empirical anomalies that were hard to square with the efficient-markets view. The fathers of this efficient-markets theory may have understood its limitations, but this was not universally true of policy makers and others who made use of it to justify their positions. In particular, the efficient-markets view found a ready reception from the likes of Chairman Greenspan.

But the role of ideology extended beyond the halls of the Fed and the person of its chairman. In 1992, the Democratic Party moved in a business-friendly direction in an effort to regain the political middle ground. Responding to twelve years of Republican control of the White House, a party traditionally opposed to financial deregulation now embraced Bill Clinton's "third way" of balanced budgets, private-public partnerships, and finance for growth. Political scientists Sandra Suarez and Robin Kolodny emphasize the role of this ideological convergence between Left and Right in setting the stage for financial deregulation. Where the 1992 Democratic Party platform might have been expected to at least express reservations about the concessions extended to financial institutions, it was notably silent on the question of deregulation.[18] The Riegle-Neal, Gramm-Leach-Bliley, and Commodity Futures Modernization Acts were all signed into law by a president affiliated with a party that had once, but no longer, opposed deregulation of the financial sector—the same party that was responsible during the presidency of Franklin Delano Roosevelt for putting in place the elements of modern financial regulation.

The result of these measures was a massive increase in the size, complexity, and leverage of US financial institutions. After having remained stable for more than two decades, the share of the financial-services industry in GDP more than doubled from 4 percent in the early 1970s to 8.3 percent in 2006.[19] Some of this growth was natural recovery from the turbulent 1930s and post–World War II years. It can be seen as the financial sector reasserting its role in helping to allocate resources in a complex modern economy. But the remainder, and especially the breakneck financialization of the years leading up to the crisis, is not adequately explained by standard models of the efficiency advantages of a well-functioning financial sector.

Moreover, the growth of the sector was financed to a considerable extent not with equity—not by banks raising more capital—but with debt. The debt in question was incurred by borrowing for a fixed, typically short term from corporations, mutual funds, state and municipal governments, government agencies, and not least other banks. Large banks had the best access to this so-called wholesale money market.[20] Having diversified their business and invested in internal controls, they could argue that they were in the best position to manage the risk of relying on borrowed funds.

Large banks were also in the best position to create the special purpose vehicles used to shift risky assets off balance sheet, minimizing the amount of capital the parent institution had to raise. They were further incentivized to reduce their capital ratios and increase their leverage by the knowledge that they were systemically significant. Because they were too big to fail, they were apt to be bailed out in the event of trouble. This in turn encouraged them to take on additional leverage and risk.

And what was true of banks in the United States was similarly true of banks elsewhere, notably in Europe. Although regulatory preferences and subsidies were also extended to small banks specializing in activities like mortgage lending, in country after country it was the large institutions that expanded their balance sheets and raised their leverage most dramatically.

The extreme cases were broker-dealers like Bear Stearns and Lehman Brothers, whose traditional business was trading securities on behalf of their customers. Historically, these firms had maintained large reserves and limited the riskiness of their investment portfolios. Under pressure from commercial bank competitors, they now moved from one extreme to the other.

In 2007 the typical US commercial bank had a leverage ratio on the order of 12 to 1, measured as the unadorned ratio of assets to shareholders' equity. Lehman Brothers, by comparison, had a leverage ratio of 30, Bear Stearns 33.[21] A leverage ratio of 33 meant that a decline in asset values of just 3 percent could wipe out shareholders' equity and therefore the firm itself if it was forced to acknowledge those losses.[22] As subsequent events would reveal, this was a tenuous position for any financial institution.

How this extraordinary situation was allowed to develop became a key question in the wake of subsequent events. The answer starts with the decline of the private partnership model of investment banking. Traditionally, the New York Stock Exchange had banned public listing of investment banks as too risky. Instead, investment houses were organized as private partnerships or closely held corporations owned and operated by a handful of partners whose interests were not easily bought and sold. The partners thus had a stake in the long-term survival of the institution. By tradition, they sat together around a table in the "partners' room," literally keeping an eye on one another. Peer pressure and close oversight thus served as deterrents to excessive risk taking.

Over time, technological change—development of expensive new computer technology to process transactions, for example—heightened the advantages of scale and made the private partnership model, where the size of the bank was limited by the capital resources of the partners, problematic. It doesn't take much effort to imagine whose lobbying caused the ban on public listing to be removed in 1970. (Answer: the investment banks.) Merrill Lynch was the first big broker-dealer to go public in 1971, followed by Bear Stearns, Morgan Stanley, Lehman Brothers, and Goldman Sachs, the four other members of what collectively came to be known as "the Big Five."

Now the CEO, as head of a public company, and those who worked for him, answered (if at all) to the chief risk officer. Management's interest in the firm was neither illiquid nor long-term. If their risky bets paid off, they earned enormous bonuses. And if big payoffs today were followed by big losses tomorrow, there was no provision for clawing back yesterday's bonuses (a practice that regulators and shareholders sought to change only after 2008). In principle, the board of directors, representing the shareholders, was supposed to push back against excessive risk taking. But outside directors had limited information and, in many cases, limited ability to assess it. In practice, no one was watching the store.

Regulators, for their part, were no better positioned to restrain risk taking and leverage. They took their cue from the banks rather than the other way around. The SEC loosened capital requirements for broker-dealers in 2004 in response to similar action by the European Union and lobbying by the Big

Five, whose members feared losing ground to their foreign rivals. For thirty years, US broker-dealers had been required to apply what was known as the "net capital rule," which obliged them, like their commercial bank brethren, to limit their leverage to 12 to 1. The SEC's 2004 decision now allowed them to use their internal models to estimate, or in practice underestimate, the riskiness of their investments. The broker-dealers reduced their capital cushions accordingly.

The Big Five were also leaders in using special purpose vehicles (SPVs) to shift assets off balance sheet, where they would be free of capital requirements. SPVs were robot firms with no employees or physical location. They existed solely to securitize a bank's mortgage claims, credit card interest due, and other receivables and to sell the resulting instruments on to other investors. If an SPV was unable to pay interest on its securities because of defaults on the underlying pool of residential mortgages, then that was the security holders' problem, or so it was argued. The sponsoring bank was not legally obliged to provide additional resources so that the SPV could meet its commitments. This was the rationale for exempting the banks from having to hold capital to back the obligations of their SPVs.

But everyone knew who was at fault when a special purpose vehicle ran off the road. The blame rested not with the vehicle but with its driver, in this case the parent bank. Failure to lend support could therefore damage the parent's reputation and impair its access to capital markets.[23] In the event of defaults on the pool of underlying mortgages, responsibility for making good the difference reverted to the sponsoring financial institution. The off-balance-sheet liability migrated back onto the sponsor's balance sheet.[24] Just why regulators should have allowed a parent firm transferring pools of mortgages to an SPV to hold less capital in this light is, to put it mildly, unclear.[25]

The growth of SPVs was just one manifestation of the larger process of asset securitization. Rather than holding mortgage loans, student loans, auto loans, and corporate loans on their balance sheets, where they had to be funded, banks pooled their loans and transformed them into securities to be sold on to other investors. The pool was split into tranches, with the senior tranche receiving first claim on the cash flow from the underlying loans. The junior tranches received payment only after the senior tranche was serviced. The resulting securities were known as collateralized debt obligations, or CDOs. The sequential payments were referred to, more prosaically, as the "cash-flow waterfall." The presumption was that the senior tranche was safe in the absence of extraordinary events. This façade of security allowed the senior tranche to obtain an AAA rating and be sold off to pension funds and insurance companies, whose mandates allowed them to invest only in high-rated paper.

Mortgage securitization was no new phenomenon. As we saw in Chapter 1, the "guaranteed mortgage participation certificates" of the 1920s, where the title or insurance company issuing the mortgage-backed security guaranteed the purchaser a specified return, bore more than a passing resemblance to the senior tranche of the mortgage securitizations of the early 2000s. But now the process achieved a scale and complexity not seen before. CDOs were tranched a second time and transformed into securities known as "CDOs squared." "CDOs cubed" were not long in following.

CDOs backed by pools of loans then gave way to "synthetic CDOs," whose payment streams were backed not by actual mortgage loans but by portfolios of credit default swaps. Credit default swaps, recall, are insurance contracts that pay out in case of a specified credit event, like a default on a mortgage bond. In practice they were issued by many of the same investment banks active in the securitization business. And they were backed by nothing more than the promise of the issuer to pay in the event that the default in question occurred.

By 2005, the face value of CDOs exceeded $1.5 trillion by one estimate.[26] The "one estimate" qualification is important, since in truth no one really knew the value of CDOs outstanding, much less who held them. Similarly for credit default swaps. One survey conducted by the International Swaps and Derivatives Association suggested that there were $17 trillion of CDS outstanding in 2005. But no one knew for sure.

The result was an enormous increase in the flow of credit into US financial markets, and into the housing market in particular. Mortgage and nonmortgage debt had risen in lockstep for three decades.[27] Starting in 2000–01, however, nonmortgage debt as a share of GDP leveled off, while the growth of mortgage debt rose explosively. At the peak in 2006, private mortgage debt was more than half again as high as private nonmortgage debt. Something peculiar was evidently happening in mortgage and financial markets.

Associated with this tsunami of finance was a run-up in home prices unlike anything seen since Florida in the 1920s. Housing prices nationwide, adjusted for inflation, had been essentially trendless from the 1950s through the 1990s. Starting in 1999 they shot up, rising by two-thirds in real terms in just seven years.[28] As in the 1920s, the increase was strongest in certain frenzied pockets, Florida and this time Arizona and California.[29]

The bubble then fed on itself, as bubbles do. More home purchases meant higher property prices, which encouraged bank and nonbank lenders to lend against the collateral of more highly valued homes. This meant additional purchases, still-higher prices, and more collateral against which to borrow. Subprime borrowers, with unprecedented access to credit, purchased homes they could afford only if the property appreciated, allowing them to refinance and extract equity from the investment.

A growing number of homes were purchased with little down payment if any, given a fresh coat of paint, and put back on the market. Tales of individuals of modest means buying multiple properties, the hallmark of a speculative market, became widespread. The Discovery Home Channel began broadcasting a program called "Flip That House." Each episode told the story of an individual or group that purchased a run-down property for little or no money down, gave it a fresh coat of paint, and sold it for a substantial profit. The typical episode glossed over details like closing costs and the need to purchase title insurance, much less the consequences for highly leveraged real estate speculators of a decline in housing prices. Their omission reflected more than the intrinsic limitations of the thirty-minute format.

PART II | The Worst of Times

CHAPTER 7 | Spent Bullets

By the spring of 1929, the Fed's interest rate increases, reinforced now by the policy of direct pressure, were being felt by the stock market. Brokers' loans, though still available, were getting expensive. Billy Durant, more conscious than most of the importance of cheap credit for Wall Street, grew alarmed and took his concerns to the highest level. Durant arrived at the White House after dinner one evening in early April, by taxi rather than chauffeured limousine to avoid attracting attention. In an audience with President Hoover, he argued that "the Federal Reserve in its tightening of security loans was killing the goose that laid the golden egg."[1] Hoover, critical of the Fed's earlier low-interest-rate policies for fueling speculation, was unmoved.

Having failed to convert the president, Durant next tried to go over the head of the White House by mobilizing public opinion. He purchased fifteen minutes of time on the CBS radio network for an address highlighted by a demand that the "autocrats" on the Federal Reserve Board keep their hands off business.[2] Although the broadcast made a splash, it had no impact on Fed policy.

Unable to influence the central bank, Durant began quietly getting out of the market. The question was how many other investors would follow. Over the summer, the answer appeared to be "not many." Between June and August the Dow Jones industrials advanced by a further 16 percent. The mania for stocks spread from Wall Street to Main Street. Coverage of the markets moved from the business section to the front page of the dailies.

On September 5, Roger Babson, goateed investment guru, amateur business cycle theorist, and prominent prohibitionist, then gave his annual address to the National Business Conference, the punch line of which was "Sooner or later a crash is coming, and it may be terrific." Babson was a devotee of Sir Isaac Newton. His wife, Grace, on a trip to London, had gone so far as to purchase a parlor room salvaged from Newton's house and have it shipped to the Babson Institute, Roger's nascent business school in Wellesley, Massachusetts. Babson believed that Newton's third law of physics applied to financial markets: to every action there is a reaction, and therefore what goes up must come down. Babson had been predicting a decline in stock valuations since the market took off in 1927. He was the first to acknowledge that his pessimism was hardly news. As he put it on September 5 in introducing his remarks, "I am about to repeat what I said at this time last year and the year before." Even a stopped clock is right twice a day. Babson's time was about to come.

The Yale University economist Irving Fisher, like Babson, was both a prohibitionist and partial to the goatee. But where Babson was a student of physics, Fisher had been inspired by scenes of water cascading into mountain pools on a summer trip to Switzerland and now sought to apply the principles of hydraulics to the economy. The fact that liquidity was still ample, Durant's warnings about the future notwithstanding, constituted the basis for Fisher's soon-to-be-notorious proclamation on October 17 that "Stock prices have reached what looks like a permanently high plateau." On Monday, October 21, Fisher doubled down, insisting that any correction was "only shaking out the lunatic fringe."

The Dow Jones average peaked on Tuesday, September 3, at a level that would not be matched for twenty-five years. Share prices fell modestly on September 4 and then sharply on September 5. Thursday the fifth was when Babson gave his speech comparing Wall Street to Florida real estate and predicting the worst. The "Babson Break," as the 5 percent drop that day came to be known, was a reminder that, as Babson's hero Newton might have put it, what went up could come down.

For seven weeks, stock prices drifted downward. There were periodic up days and also sharp sell-offs, as on Thursday, October 3, when the Dow fell by 4½ percent. Traders who bought stocks on margin were hit. "Mortality among speculative Stock Exchange accounts was tremendous," wrote the *New York Times* the following weekend. "Numerous accounts that ran into six figures at the first of the week were entirely extinguished by Friday night."[3]

Still, investors were unprepared for what came next. On October 24, "Black Thursday," the Dow Jones Industrial Average fell 11 percent at the opening bell. In the first thirty minutes, 1.6 million shares changed hands, exceeding typical turnover for an entire trading day. The quotation machinery and transcontinental wire system were overwhelmed.

A market in this panicked state could not be left to its own devices. Taking a leaf from the book of J. P. Morgan the elder, Thomas Lamont, the leading Morgan partner, summoned Charles Mitchell, chairman of National City Bank; Albert Wiggin, chairman of Chase National Bank; William Potter, president of Guarantee Trust Company; and Seward Prosser, chairman of Bankers Trust. (Jack Morgan himself was in Europe, having been more concerned with conditions there.) After a midday meeting of just twenty minutes, Lamont emerged to address the assembled financial press. The economic and financial situation was "fundamentally sound," he affirmed, invoking the standard trope to which bankers and politicians resort whenever markets show signs of distress. Using a term made current by the advent of commercial air travel, he dismissed the morning's drop as the market just hitting an air pocket.

Prices stabilized in the afternoon, whether owing to Lamont's remarks or to hopes that the bankers were ready to back his words with deeds. Then, however, the market was hit by a wave of sell orders from the West Coast, which was only now absorbing news of the morning's carnage. Trading volume, at nearly 13 million shares, was more than double the previous daily high. It took the ticker three hours following the close of business to finish spitting out its record of the day's transactions.

Prices fluctuated uneasily on Friday and again in Saturday's abbreviated trading, buoyed by rumors of support by a pool of bankers organized by Lamont. Volume remained heavy. On Sunday a normally deserted Wall Street was a hive of activity as clerks toted up the damage and hustling messengers relayed the news. Sightseers "picked up from the street a vagrant piece of ticker tape, as visitors seize upon spent bullets on a battlefield as souvenirs."[4]

The Dow Jones industrials lost another 12 percent on "Black Monday," October 28, and 9 percent the following day, "Black Tuesday," as the hoped-for bankers' support failed to materialize. The 16 million shares that changed hands on Tuesday set a record that stood for four decades. Again, traders and bookkeepers were overwhelmed. The Wall Street Bowling League announced that it was postponing further contests owing to the absence of many members.

For margin traders who had lost everything, the New Era was over. "Wall Street was a street of vanished hopes, of curiously silent apprehension and of a sort of paralyzed hypnosis," the *New York Times* wrote in its lead story on October 30. For Will Rogers, flying west from New York on October 24, however, it was much sound and fury signifying nothing.

> All day just looking down on beautiful lands and prosperous towns, then you read all this sensational collapse on Wall Street. What does it mean? Nothing. Why, if the cows of this country failed to come up and get milked one night it would be more of a panic than if Morgan and Lamont had never held a meeting. Why, an old sow and a litter of pigs make more people a living than all the steel and General Motors stock combined. Why, the whole 120,000,000 of us are more dependent on the cackling of a hen than if the stock exchange was turned into a night club.[5]

Not everyone was able to view the landscape with such equanimity. Still, there was a considerable body of opinion agreeing with Rogers. Retailers continued to plan for a strong Christmas shopping season. The only hint of what was to come was a report from a Wall Street financier who found himself sitting in a bar alongside his milkman. When the banker remarked that the milk business must have been one of the few activities to have come through the Crash unscathed, the milkman retorted "Unscathed nothing. Do you know that in the past three weeks I have had enough cancellations and reductions in cream order to reduce my business by over $400 a month? People still order the same amount of milk, but they have apparently decided that they can get along without the buying of cream."[6]

Leverage has long been cited as a factor in the Crash. When prices fell, brokers who had extended credit to investors called for additional margin, forcing their customers to sell into a falling market. The resulting fire sales then fed on themselves. Contemporary accounts are replete with tales of margin accounts "ripped wide open" and investors being wiped out. This was not the first time that markets would be laid low by this combustible mix of leverage and volatility; nor would it be the last.

Lack of information also played a role. This was not simply an East Coast–West Coast phenomenon or the fact that the ticker ran late. On the worst days, accurate price quotations were unavailable on the trading floor itself. In his classic account of Black Thursday, Maury Klein describes a panicked telephone clerk who, when asked for price quotations by a broker, shouted in desperation "I can't get them. I can't get any information. The whole place is falling apart."[7] This kind of chaotic environment is a fertile incubator of panic. When prices are a matter of speculation, as it were, investors will be tempted to infer them from the actions of other investors. When they hear investors shouting "sell," they will conclude that the only prudent course is to do likewise. At that point, the herd will be off and running.

Investor mood swings can be self-reinforcing, but they are more likely when they have some basis in fact. Thus, a more systematic way of understanding the investor response is in terms of the softening economy. August marked the business cycle peak, according to the subsequent calculations of the National Bureau of Economic Research. Commerce and Treasury officials may have been unaware, but managers knew that firms, if only their own firms, were cutting back. Automobile production was down to 500,000 units in August from more than 600,000 in April and May.[8] In their classic business cycle chronology, Arthur Burns and Wesley Mitchell place the peaks in employment in the iron, lumber, and machinery industries in August, basing their estimates on statistics available at the time.[9] Building permits and construction contracts were off sharply. Although some of this may have been the late summer lull, the drop was more pronounced than in prior years.

Such observations would have created doubts about the New Age presumption that recession was no longer a threat to profitability or a factor in stock-market valuations. So would the behavior of the Federal Reserve. The advent of the Fed, charged with providing an elastic currency, was what had supposedly consigned this kind of recession to the dustbin of history. But in fact, it was the Federal Reserve System, and its lower Manhattan branch in particular, that sought to limit credit availability. On August 9, responding to the rise in share prices, the New York Fed raised its discount rate from 5 to 6 percent. The board's approval of the action was, in effect, a tacit acknowledgment that the earlier policy of direct pressure was not enough. Although 6 percent was still below call money rates, it left the banks little room for error. George Harrison, the Harvard Law School alumnus and longtime Fed staffer who had succeeded to the governorship of the New York Reserve Bank on Benjamin Strong's death in 1928, argued that the increase would be seen as "a warning against the excessive use of credit."[10] One is reminded how the European Central Bank, similarly unaware that an economic and financial storm was brewing, raised its policy rate in April 2008.

Tighter credit in New York meant tighter credit abroad. European central banks, seeing their currencies weakening and gold stocks dwindling as their residents joined Wall Street's festivities, met the Fed tit-for-tat. The central banks of Italy, the Netherlands, Germany, Austria, and Hungary raised their policy rates in the first half of 1929, this despite the fact that their economies were slowing, or in some cases already in recession. Denmark, Sweden, and Norway then tightened in August in response to the New York Fed's rate hike.

The Bank of England had last raised its discount rate in February. Somewhat surprisingly, it now remained on hold through the summer of 1929. Between June and mid-September the Bank of England's gold reserves declined by a further $133 million, but still Norman did not move. The British economy was weak, and an increase in interest rates would only aggravate an already difficult economic situation.[11] Norman understood that an increase would not be warmly received by Britain's newly elected Labour government. With the Hague Conference that led to the Young Plan restructuring of German reparations still underway, he was reluctant to take a step that, by drawing gold from Paris, might antagonize the French.

Norman's hand was then forced by the Hatry Scandal. Clarence Hatry was an odd duck to dictate the course of British monetary policy. The son of a trader in silk and velvet for use in top hats, Hatry was short in stature, like his contemporary Charles Ponzi, whom he vaguely resembled. He also shared with Ponzi a certain entrepreneurial flair and the ability to raise money for dubious projects. And, like Ponzi, he had a miraculous capacity to rehabilitate himself once his earlier business initiatives foundered.

In 1910 the twenty-two-year-old Hatry inherited control of the family silk company from his mother. Within months the business failed and, having put up his personal credit to obtain £8,000 of supplies, Hatry was declared insolvent. Not easily discouraged, he turned next to selling insurance to Austrian immigrants transiting England in order to sail from Liverpool to the United States. Hatry formed the Austrian Immigrants Insurance Association, offering policies that provided for return passage and a resettlement fee if the policyholder was denied entry into the Promised Land. He transferred the risk by reselling the policy to an established carrier, taking as his commission the difference between what the immigrant paid and the cost of the reinsurance.

World War I interrupted the migration of Central Europeans to the United States, putting an end to this business opportunity but creating others. In 1914 Hatry combined the modest profits from his Austrian-immigrant policies with £30,000 of borrowed funds to purchase City Equitable, a reinsurance company. The reinsurance business, then as now, was dominated by German and Austrian firms, so the war created an opening. Hatry reorganized City Equitable to capitalize on the opportunity and within six months sold a controlling interest for £250,000 to Gerard Lee Bevan, a flamboyant British financier, and Bevan's associate, Peter Haig-Thomas.[12] Bevan's forebears had been founders of Barclays; their descendant, known as Jerry, was a high-living stockbroker with a taste for women and Chinese porcelain. City Equitable collapsed in February 1922 when it was discovered that it had issued false balance sheets understating loans to other Bevan-affiliated companies, disguised its speculative investments, and omitted to report that some of its assets were pledged as security against borrowed funds. Bevan was held personally responsible, having kept his handpicked board of directors ignorant of the machinations. He fled to France and then to Vienna, where he lived in disguise before being discovered and arrested. Extradited to Britain, he was convicted of fraud and sentenced to seven years' hard labor at Wormwood Scrubs.[13]

With profits from the sale of City Equitable, Hatry next acquired the Commercial Bank of London, which he used to finance further acquisitions. The result was Amalgamated Industrials, a business empire encompassing shipbuilding, cotton spinning, coal, iron, and pig farming. Hatry's firms were overcapitalized; he issued more shares than needed for their operation as a way of funding additional acquisitions. Doing so unfortunately made it more difficult to offer investors in the early companies a respectable return. Pig farming, in any case, was the most profitable of those activities; the shipbuilding, cotton spinning, coal, and steel industries all suffered from overcapacity and low prices in the 1920s. Hatry avoided the worst by selling off much of Amalgamated Industrials not long after the war.

Hatry next deployed the Commercial Bank, rebranded as the Commercial Corporation in honor of his extrabanking ambitions, to buy up and consolidate firms in the glass and jute industries. The demand for the products of both had been strong during World War I: glass has myriad wartime uses, and jute fiber was used in making the sandbags so essential for trench warfare. The jute industry was dominated by seven family-owned firms in Dundee, Scotland, where some 90 percent of British production was located, jute manufacturing having used whale oil to soften the fibers before weaving and Dundee having been a major whaling center. The industry was already suffering from chronic overcapacity when the wartime demand for burlap sacking declined. Hatry amalgamated the seven firms, eliminated their excess capacity, and took them public in order to enable the founding families to get their capital out. Unfortunately, demand for jute and glass was weaker in the 1920s than during World War I. Hatry and his directors "failed to appreciate the artificiality of the post-Armistice boom" and "the severity of the reaction which was to follow," in the words of the liquidator appointed to wind up the Commercial Bank in 1923.[14]

Not easily discouraged, by 1926 Hatry was back in business, having founded Corporation and General Securities Ltd. Just how he regained the confidence of investors is something of a mystery. He appears to have made some effort to pay off his earlier creditors. He was known for his mental acuity and charm and maintained the lavish lifestyle of a successful entrepreneur, acquiring a racing stable, the largest yacht on British waters, and an elegant home. Two homes, actually. The first, at an address that had once been the abode of the British political economist David Ricardo, featured a rooftop swimming pool where Hatry threw lavish parties.[15] Its successor was in the prestigious Mayfair district, where Hatry installed a cocktail bar in the basement and another swimming pool, this one on the second floor.

Corporation and General Securities provided underwriting services to middle-sized businesses and municipalities, competing on price with the established firms that dominated the market. In the manner of Angelo Mozilo and Countrywide Credit, it used direct marketing to attract clients. Before long, Hatry was taking stakes in the companies whose issues he underwrote. His holdings expanded beyond Corporation and General Securities, which now featured Lord Henry Paulet, the Sixteenth Marquess of Winchester, as figurehead, to include also the Drapery Trust, which specialized in amalgamating department stores, and the Photomaton Corporation, which placed coin-in-the-slot photography machines in railway stations and amusement parks.

By 1929 Hatry was setting his sights still higher, seeking to acquire United Steel Companies, an enterprise valued at £7 million. United Steel was formed in 1917 as a combination of several steel companies under the leadership of the eponymous Harry Steel. The conglomerate was heavily indebted and therefore vulnerable to soft demand. Demand being soft in the 1920s, Steel was receptive when Hatry proposed to purchase United Steel and its subsidiaries using borrowed funds, sell off their redundant assets, and float the resulting concern on the London Stock Exchange. The strategy was not unlike the one he had employed when forming Jute Industries. It was also not unlike that of a modern private equity firm such as Bain Capital.

The main challenge was borrowing the £8 million. Unfortunately, Norman's decision back in February to increase the Bank of England's discount rate made raising cash more difficult than Hatry anticipated when launching the buyout. The banks demanded collateral, something that Hatry, lavish lifestyle notwithstanding, did not possess in abundance.

Finding himself £900,000 short and with the deadline for completing the transaction approaching, Hatry resorted to desperate measures. Corporate and General Securities having underwritten a number of municipal loans, Hatry still held copies of the bonds of the cities in question. He now printed unauthorized loan certificates for Gloucester, Swindon, and Wakefield as security for additional loans. He raised cash by informing the municipalities for which Corporate and General had provided underwriting services that only some of their bonds had been successfully placed, where in truth the placement was complete, and kept the difference in subscriptions for himself. In addition, Hatry made duplicate copies of securities issued by one of his companies, Associated Automatic Machines, and held by another, the Austin Friars Trust. The same stock certificates securing advances from Barclays Bank were used to secure a loan from Parsons and Co., and then another from Lloyds Bank.[16]

Desperation breeding recklessness, Hatry did not even bother to pledge different securities to various branches of the same bank. While the head office of Lloyds took 100,000 shares in Associated Automatic Machines as collateral, the St. James branch was offered duplicates as collateral for another loan. It did not take long for a clerk to discover the problem and for Lloyds to hire a chartered accountant, Sir Gilbert Garnsey, to investigate its extent. Nor did it take long for word of Garnsey's engagement to spread, and shares in Hatry's companies to collapse.

In the meantime, Hatry borrowed more money to purchase shares in his companies, ward off insolvency, and buy time to gamble for redemption, but in so doing he only dug himself a deeper hole. This pattern became commonplace as the crisis worsened: individuals and institutions experiencing financial distress, operating in an environment of lax regulation, purchased shares in their own enterprises in order to suppress evidence of their insolvency and buy time to gamble for redemption, but in so doing only made for themselves—and society—even larger losses. This was the same practice in which the Bank of United States engaged in 1929 when other investors began to sell its shares in response to worries about solvency, and in which Albert Oustric engaged to ward off failure of his Banque Adam in 1930. It was a practice that would be taken to new heights by management of the big Icelandic banks in 2008.[17]

On September 20, 1929, the Marquess of Winchester issued a statement acknowledging that an investigation of Hatry's affairs was underway. Norman, who had long been suspicious of the flamboyant financier, so informed the London Stock Exchange, which suspended trading in the Hatry Group the same morning. By the close of business, Hatry was arrested and jailed. He was quickly indicted and brought to trial shortly after the New Year. Counsel suggested that the scheme that had brought him down was hatched not by Hatry himself by his voluble Italian colleague, John Gialdini, who properly deserved the blame. Gialdini had threatened to blow his brains out if the United Steel acquisition fell through, before conveniently fleeing the country. No matter; Hatry was convicted and sentenced to the white-collar maximum of fourteen years.[18] Eventually Gialdini was also arrested, found guilty at the conclusion of a trial in Milan, and sentenced to five years and ten months of imprisonment. The contrast with the treatment of white-collar criminals in the wake of the 2008–09 crisis is too obvious to warrant comment.

Inevitably, Hatry's shareholders were wiped out. In addition, some £12.5 million of unsecured liabilities were frozen as a result of the suspension of his companies.[19] A number of London stockbrokers failed, and several banks, including Barclays, announced that their profits would take a hit.[20] One of the few beneficiaries of the episode was, ironically, United Steel, which was able to write down its financial obligations as a result of the subsequent bankruptcy and emerged from reorganization in a stronger financial position.[21]

But in the short run, these events precipitated a sharp fall in the London Stock Exchange and gold losses for the Bank of England. On September 26 Norman bowed to the inevitable, announcing a one-point increase in the discount rate.

The result, a higher cost of credit, was unhelpful for a struggling British economy. But defense of the pound's gold standard parity was paramount. Gold losses, whatever their cause—including Hatry—demanded a reaction. The situation would be different after September 1931, when there was no longer a gold standard to defend. It would be different in the global crisis of 2008–09, when, unconstrained by an exchange rate commitment, the Bank of England, like the Fed, could cut interest rates to a rock-bottom level. For the moment, however, the Bank's priority remained defense of the sterling exchange rate. And that required Norman to tighten the screws.

The US Federal Reserve, unlike the Bank of England, still had ample gold reserves. But although free to act, it had to display the will. Following a tumultuous October 28, Black Monday, the New York Fed quickly stepped into the breach. Harrison assembled his board for an exceptional 3:00 a.m. meeting. Before the markets opened the next morning and without prior approval from the board of governors in Washington, D.C., he announced that the New York bank would purchase $100 million of short-term treasury securities. The new purchases were made for the New York bank's own account, separate from the account of the Open Market Investment Committee.

The New York Fed went on to purchase $150 million of government securities. It kept its "discount window wide open," as Harrison put it, giving banks cash in return for commercial paper.[22] (Commercial paper, recall, means promissory notes documenting payments that the banks would eventually receive from their corporate clients.) These steps prevented a spike in interest rates like those in earlier financial crises—prevention of such spikes being the main rationale for the creation of the Federal Reserve System in 1914. By limiting distress among brokers and dealers, the New York Fed averted a more serious meltdown. The *New York Times* praised it for having "insured the soundness of the business situation when the speculative markets went on the rocks."[23]

This was impressively fast action even by the standards of Ben Bernanke. It is hard to see how the Federal Reserve Bank of New York could have done more. Milton Friedman and Anna Schwartz, in their monetary history of the United States, blame the Fed for the depth and duration of the Great Depression. They attribute its inaction to the death of Benjamin Strong, the dominant personality within the system and the individual who best understood how to respond to a crisis. The events of October suggest a more nuanced interpretation. The New York Fed may have been unaware of the havoc that would be wreaked by earlier moves to tighten credit conditions. But once that havoc broke out, Harrison and his colleagues were quick to act. Their actions informed by the real bills doctrine, they knew how to respond to signs of credit stringency and distress. Harrison, in particular, understood the urgency. It was not beyond his capacity to formulate a response and secure the backing of his board. He was capable of decisive action and took it.

One might think that a board of governors similarly beholden to the real bills doctrine would have been reassured. In fact, however, more concerned about prerogatives than policy, its members were furious about not having been consulted. Led by Adolph Miller, the board immediately took steps to limit Harrison's ability to respond in this fashion. The precedent had been set in 1927 when the board overrode the directors of the Chicago Fed, forcing the bank to change its discount rate. Now the board held the New York rate hostage, denying Harrison's request for a reduction to help distressed banks and brokers until New York's directors agreed that further purchases of government securities would be made only with the prior approval of the board. Friedman and Schwartz suggest that the problem was with Harrison—that, had Strong been there instead, he would have been able to face down the board. The fact that the terms of engagement between the board and the Reserve banks had already been changed by the events of 1927 suggests otherwise. The problem was structural, not one of personalities.

But if Harrison and his colleagues understood the need to respond quickly to the financial distress caused by the stock market crash, they understood less well how to respond to subsequent events. So long as the problem was financial distress, they understood it was their responsibility to provide emergency liquidity, in contemporary parlance an elastic currency. That the stock market crash placed New York banks at risk was something the directors of the New York Fed readily grasped.

But once the problem became deflation and depression, there was less agreement on what to do, if anything. The Federal Reserve System had been created to prevent spikes in interest rates. Its officials knew how to respond when, as a result of financial dislocations, credit temporarily grew scarce relative to the needs of business. There was no consensus, however, about what to do if the price level showed a tendency to fall for a period of time. The US price level had trended downward before, in the 1870s and 1880s and again in the aftermath of World War I, without producing a full-blown financial crisis. For Federal Reserve governors, their views informed by this historical experience, it was not obvious that the downward movement in prices was a problem now.

As stringency in the money market ebbed and interest rates normalized, action therefore was perceived as less urgent. The views of Harrison and his directors now aligned with those of the board of governors. The New York bank no longer resisted the instructions of Washington, D.C. To the contrary, it became entirely willing to cease and desist from open market purchases.[24] The economy would quickly pay the price.

CHAPTER 13 | The Spiral

It was hard to imagine that things could get worse. But worsen they did with AIG.

The AIG story is one of the more extraordinary chapters in this extraordinary tale. The company, originally known as American Asiatic Underwriters, was founded in 1919 by Cornelius Vander Starr, Northern California native, ice cream salesman, and clandestine operative for the US government. Starr's introduction to Asia came via a job with the Pacific Mail Steamship Company. Developing a taste for the region, he became, at the age of twenty-seven, the first Westerner to sell insurance to the Chinese residents of Shanghai. (Shades of Clarence Hatry selling insurance to Austrian immigrants before 1914.) Starr insured Chinese shipping companies against losses to marauding pirates off what is now the Indonesian coast. He wrote fire insurance for factories in China and the Philippines.

During World War II, Wild Bill Donovan, head of the US Office of Strategic Services (OSS), then used Starr's employees to gather intelligence on the enemy powers' assets in the Far East. Starting in 1942, following US entry into the war, Starr took personal control of the clandestine operation. He helped Donovan use American Asiatic's commercial property insurance records to identify promising bombing targets. Subsequently Starr set up a pair of front companies, Metropolitan Motors Overseas Incorporated and a New York edition of the *Shanghai Evening Post and Mercury*, whose employees acted as agents for the OSS.[1]

Following the occupation of Beijing and Shanghai by Communist forces in 1949, Starr moved his headquarters to New York. Under his successor, the driven, strong-willed Maurice ("Hank") Greenberg, the rebranded American

International Group grew into the largest underwriter of commercial and industrial insurance in the world. It provided travel and life insurance to households and managed the retirement plans of one in ten Americans. Where Lehman Brothers had $600 billion of debts, AIG's obligations ran to the trillions.

But someone inside AIG apparently believed its experience in commercial and industrial insurance qualified it to sell protection against the failure of collateralized debt obligations. The company's trading arm, AIG Financial Products, was one of the first shops to move into writing specialized insurance on CDOs in the 1990s. The insurance contracts in question, credit default swaps or CDS, had been invented at JPMorgan, with which AIG Financial Products did extensive business.[2] Unlike Dr. Frankenstein, the mad scientists at JPMorgan appear to have understood that their creation could run amok, and they wrote CDOs and CDS with a modicum of restraint. Not so AIG Financial Products, which wrote insurance not just on high-grade securities but also on CDOs backed by subprime mortgages. By mid-2008, the unit had written an extraordinary $500 billion worth, enough to put its corporate parent in jeopardy.

AIG Financial Products was run by Joseph Cassano, who had previously worked at Drexel Burnham Lambert, which pioneered the junk bond business. Average annual compensation of Cassano's four hundred employees exceeded $1 million.[3] Salary and bonuses accounted for a third of the unit's total revenues. AIG's dominant position in markets for commercial, industrial, and life insurance gave it a high credit rating, which in turn relieved it of the obligation to hold collateral to back its CDO insurance. Other financial institutions, lacking AIG's AAA rating and having to post more collateral as a result, had higher costs of providing CDO insurance. AIG Financial Product thus became the dominant player in this market.

In effect, Financial Products was taking a highly leveraged long position on the US housing market. How it was that the corporate parent, not to mention the regulator, looked the other way takes some explaining. Part of the explanation is that credit default swaps could be sold to AIG's board as simply another form of insurance of the sort that the company had long been in the business of providing, although the instruments in question were in fact entirely different. Hank Greenberg, whose aversion to risk was sometimes described as "sociopathic," might have understood the difference, but Greenberg was forced to resign in 2005 over an accounting scandal.[4] Having failed at succession planning, he was followed by a series of short-lived, less-than-impressive CEOs. Part of the explanation may also be that AIG Financial Products was a profit center, rendering the corporate parent loath to question its practices. Part of the explanation may be that Cassano was secretive—he refused to share information on his underwriting activities even with his corporate higher-ups—something that he got away with by virtue of his legendary temper and his unit's profits.

AIG Financial Products was headquartered in London, beyond the purview of the New York State Insurance Department, which oversaw AIG's insurance operations, and the Federal Reserve System, the ostensible steward of the American financial system. It booked trades through a French bank and sold derivatives insurance to European banks that loaded up on subprime-related products. CDS protection allowed the European banks to reduce the capital they were required to hold against their subprime-related investments. The banks could then expand their balance sheets and take on additional risk. One of Greenberg's successors as CEO, Edward Liddy, in testimony before the House Financial Services Subcommittee on Capital Markets in 2009, charmingly referred to the practice as "balance sheet rental."[5]

From a European perspective, AIG Financial Products looked less like an insurance company than a highly leveraged bank, which is of course precisely what it was. European officials logically moved to subject it to bank regulation. Unfortunately, they didn't specify whose bank regulation, or where.[6] The AIG unit arranged for the purchase of a savings and loan, American General Bank, thereby subjecting itself to oversight (if loose use of the word is permitted) by the Office of Thrift Supervision.

OTS was a particularly hapless agency created in 1989 in response to the S&L crisis. Thrifts made plain-vanilla mortgage loans; OTS had no particular competence in derivatives. The regulator's responsibility was to AIG's thrift subsidiary, so it viewed the operations of the larger company solely in that light. Visits by examiners were limited to Financial Products' lowly branch office in Connecticut. The fact that Financial Products had enjoyed a fourfold increase in credit-related revenues in just one year, though noted in OTS's 2006 audit, elicited nothing in the way of substantive comment, much less corrective action. If one fact epitomized the consequences of the ramshackle US regulatory system, this was it.

AIG Financial Products suffered mounting losses as the housing market tumbled. But it was not just the falling housing market; in addition, triggers in the insurance contracts sold by Financial Products required its parent to put up additional collateral if AIG's credit was downgraded to single A. The existence of these provisions was not widely known even within the company, given the secretive manner in which Cassano ran his operation. Their presence came to light on the afternoon of Monday, September 15, following the failure of Lehman Brothers, when Moody's and Standard & Poor's, late again to the game, downgraded AIG.

There was more alarming news the next day. Reserve Primary Fund, America's most venerable money market mutual fund, had some $785 million of Lehman Brothers paper in its portfolio, a fact proudly trumpeted in its July financial statement. The fund's septuagenarian co-founder and manager, Bruce Bent Sr., now learned of Lehman's bankruptcy courtesy of a headline spied at an airport newsstand while on holiday in Italy celebrating the fiftieth anniversary of meeting his wife.

Within twenty-four hours of Lehman's bankruptcy, nearly half of Bent's shareholders had asked to redeem their shares. These were not demands that the fund could easily meet by selling other investments, given demoralized markets. Back in 2007, recall, other troubled money funds were bailed out by their fund families or investment bank parents.[7] But the $62 billion Primary Fund lacked a deep-pocketed investment-bank patron and had no obvious alternative. Bent was sufficiently alarmed to instruct his son, Bruce Bent II, to contact New York Fed President Geithner. Geithner being otherwise engaged, the junior Bent left a message.

The Bents first attempted, without success, to raise $100 million from the banks with which they booked their trades. Next they sought a buyer for their troubled fund, efforts that were similarly unavailing. The only option remaining was to halt redemptions and allow shares to go to a discount.[8] Reserve Primary Fund duly announced that it was breaking the buck, reducing the value of its $1 shares to 97 cents. It announced further that it would consider additional requests for redemptions only after seven days.

Just months earlier, Bent Sr. had warned his shareholders that "Unfortunately, a number of money funds, and a number of investors that selected them, have lost sight of the purpose of a money fund and the simple rules that guide them in their foolhardy quest for a few extra basis points. The cash entrusted to a money fund is your reserve resource that you expect to be there no matter what."[9] Savers did not react well to news to the contrary and scrambled to get out. The biggest withdrawals were experienced by money market funds run by institutions like Morgan Stanley and Goldman Sachs that had interacted extensively with Lehman. Since money funds had been the main buyers of asset-backed commercial paper from large corporations, the last signs of life now flickered out of the commercial paper market.

Defenders of the mutual fund industry argued later that this was an overreaction. Lehman Brothers paper accounted for only 1 percent of the Reserve Primary Fund's investment portfolio. Shareholders in the fund ultimately recovered more than 99 percent of their investments. But those same shareholders suspected that Primary Fund was not the only money fund with exposure to Lehman and, more important, that Lehman might not be one of a kind. The plight of Primary Fund reminded them that money market funds held no capital and were uninsured. Later it emerged that nearly thirty other money market mutual funds suffered losses large enough to force them to similarly break the buck but avoided doing so because they were again bailed out by their corporate parents, a luxury that Reserve Primary Fund did not enjoy.[10]

Money market funds developed in the early 1970s as an alternative to bank accounts, interest rates on which were limited by the Regulation Q ceilings adopted in 1933.[11] With the elimination of Regulation Q in the mid-1980s, they then lost their raison d'être. But that didn't mean they faded quietly into the night. The failure of the Securities and Exchange Commission to require them to hold banklike capital buffers was an implicit subsidy that had allowed them to outlive their usefulness, with disastrous consequences.

This, the third week of September, was when the crisis reached its most dangerous point. Runs by individual investors on money market funds and by institutional investors on their investment-bank parents engulfed the shadow banking system. Consumed by fears of counterparty risk, the banks refused to lend. Even the most reputable companies, like General Electric, were unable to borrow.

Desperate circumstances prompting desperate measures, Treasury announced that it was temporarily guaranteeing the liabilities of the money funds. Guarantees are well and good, but to be credible they have to be backed. To this end Paulson authorized use of the Exchange Stabilization Fund, another legacy of the Great Depression. The ESF was created in 1934, following US departure from the gold standard, with the goal of stabilizing the dollar. Now this $50 billion pot of money was used to reassure investors in money market funds that there would be no more buck breaking—that if their money market fund was unable to give them a hundred cents on the dollar, the ESF would.[12]

The guarantee was a prominent statement, but the fact of the matter was that $50 billion was only a drop in the bucket compared to the $3 trillion of outstanding money market shares. Again, the Fed was the only institution with sufficiently deep pockets to address the problem. But the central bank lacked the authority, even under unusual and exigent circumstances, to purchase asset-backed commercial paper directly from money market funds and provide them with cash in return. The way around this problem was the convoluted and convolutedly named Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, or AMLF. Through the AMLF, the Fed lent money to State Street and JPMorgan, two of the custodians with whom the money funds held their investments and booked their trades. In turn, State Street and JPMorgan purchased commercial paper from the mutual funds, providing them the cash they needed to meet redemptions. In the end, the Fed financed more than $200 billion of commercial paper purchases by the two banks and a handful of smaller custodians.

Stabilizing money market shares and raising the limit on deposit insurance from $100,000 to $250,000, as the FDIC did subsequently, were popular steps, since they addressed the concerns of small savers. Other measures benefiting large financial institutions were more controversial. The controversy extended to the AMLF, which circumvented statutory limits on the Fed's ability to intervene in securities markets and through which State Street and JPMorgan, it eventually emerged, earned healthy profits.[13]

An immediate case in point was when the Fed stepped in on Tuesday, September 16, to rescue AIG. The Fed initially balked at aiding an insurance company over which it possessed no regulatory authority. Unusual and exigent circumstances might permit it to lend to an investment bank like Bear Stearns, but lending to an insurance company was too exceptional, whatever the exigency. Federal Reserve officials indicated as much to AIG's CEO, the former Citigroup executive Robert Willumstad, and to the company's chief financial officer, Steven Bensinger, in a phone conversation on the morning of Saturday, September 13. New York Fed President Geithner and Treasury Secretary Paulson told Willumstad in no uncertain terms that there would be no government assistance or guarantee for AIG. Echoing the language used by Bank of England officials in their discussions with Northern Rock, they urged the company to find a private-sector solution.[14]

This was a misreading all around, again echoing the case of Northern Rock. The officials in question overestimated the ease of arranging a private-sector solution, while Willumstad et al. underestimated the cost. AIG first attempted to raise additional capital by selling some of its insurance units to Warren Buffett's Berkshire Hathaway and then by selling preferred shares to the private equity shop J. C. Flowers & Co. But Buffett was not interested, and AIG rejected Flowers' price as too high. A few days later Buffett would instead invest $5 billion in Goldman Sachs. Ultimately AIG management would pay an even higher price for assistance.

Fed officials then sought to enlist Goldman Sachs, AIG's principal derivatives trading partner, and JPMorgan Chase, the central bank's now customary private-sector consort, in organizing a line of credit. The banks would issue a bridge loan until AIG was able to sell its insurance units, raising the cash needed to meet commitments. Officials invoked the precedent of Long-Term Capital Management, whose counterparties had collectively provided the liquidity needed to finance that troubled fund's collateral calls.[15] But the liquidity problem in 1998 was LTCM-specific; other financial institutions were flush with funds. Now everyone was potentially short of liquidity, and every bank was happy for other banks to furnish AIG with emergency assistance so long as it could husband its own liquid resources. The banks would have been better off had they acted collectively. But collective action is difficult under duress; it is even more difficult under time pressure. Efforts to assemble a bank syndicate to aid AIG went nowhere.

But if AIG was allowed to collapse, it might bring down the big counterparties, including even Goldman Sachs. Suppressing all qualms—and contradicting denials made to bankers and the insurer in previous days—the Fed, with the support of the Treasury, again declared unusual and exigent circumstances. It provided an $85 billion capital infusion packaged as a Federal Reserve Bank of New York credit line, obtaining 79.9 percent ownership in return.[16] Following the precedent of Bear Stearns, the loan was extended through a pair of special purpose vehicles, Maiden Lane II and III. The capital injection stripped AIG's shareholders of fourth-fifths of their stake. It was contingent on the immediate resignation of Willumstad.

Even though the terms were tough, they were not popular.[17] If Lehman could fail, congressional critics asked, why was it imperative that AIG be saved? To Treasury and Fed officials, the answer was clear. Lehman's failure had caused major disruptions in financial markets, and AIG's balance sheet was many times larger. Because AIG also had retail business—it insured households and firms—failure would be even more destructive of confidence. Helping AIG was uncomfortable, but the alternative of uncontrolled bankruptcy would have been worse.[18] Still, the Fed and Treasury did not cover themselves with glory, having insisted in preceding days that they would not bail out the company under any circumstances.

There was more consternation on Sunday, September 21, when, short-circuiting its usual procedures, the Federal Reserve announced that it was authorizing Goldman Sachs and Morgan Stanley, the only two investment banks still standing, to convert themselves into bank holding companies. As holding companies, Goldman and Morgan Stanley would be able to borrow from the central bank on a permanent basis. As a quid pro quo, the two banks were required to raise additional capital. Still, that the step was taken without the conventional review prompted complaints of the big boys again being accorded special privileges. It was another indication that the crisis was still far from contained.

Paulson and Bernanke made clear by their body language that they were uncomfortable with all this improvisation. Tapping the Exchange Equalization Fund, setting up Maiden Lane II and III, financing State Street and JPMorgan Chase's purchases of asset-backed commercial paper, and allowing Goldman and Morgan Stanley to become bank holding companies overnight were extraordinary steps, taken with the acquiescence of the White House but without congressional authorization. The election was barely a month away, and the Republican candidate for president, Arizona Senator John McCain, was making critical noises about these unprecedented interventions.

There was fear, moreover, that AIG was only the tip of the iceberg. If the crisis spread to Morgan Stanley, Bank of America, and Goldman Sachs, interventions on an even greater scale might be required. With a massive balance sheet and the ability to conjure money out of thin air, the Fed had the capacity to take their toxic assets off the banks' hands. But Bernanke lacked the political cover. And Paulson lacked the authority.

On Friday, September 19, at the end of an historic week, a sleep-deprived Paulson, together with Bernanke and SEC Chairman Christopher Cox, joined President Bush in the Rose Garden. The president announced he was requesting additional powers for Treasury to stabilize the financial system. Just how those powers would be deployed was vague. They would be used, the officials explained, to purchase mortgage-backed securities from financial institutions, but no details were provided. The press described the requested authority as "sweeping" and "expansive."

The emphasis on asset purchases reflected Paulson's belief that the problem was one of liquidity. The United States was experiencing a liquidity crisis centered on mortgage-backed securities, which had spilled over into the market in asset-backed commercial paper and now threatened the banks. Having Treasury buy up those securities at reasonable prices, it followed, would restore liquidity to the markets. The banks would be able to price their assets. They would again become willing to buy and sell, and importantly to lend. The financial system, its pipes unclogged, would begin functioning again.

Elsewhere, there were doubts. It was not obvious why Treasury's operatives would have a better idea than did market participants of what constituted a fair price for the banks' toxic securities. Offer too little and the banks would not sell. Offer too much and they would reap a massive windfall at taxpayers' expense.

There were suspicions, moreover, that the problem was not just one of liquidity. The banks had taken big losses on their subprime-related investments and thus needed to raise capital to resume normal operations. Without capital, they had no buffer against losses. And without a buffer against losses, they would refuse to lend.

But raising capital under stressed financial conditions was not easy. There was the alternative of government money, but Paulson, like many Republicans, opposed using taxpayer funds to inject capital, a step that he referred to, poisonously, as nationalizing the banks.[19] Overpaying for toxic assets was a way of recapitalizing the banks by stealth. But this investment of public money would not come with control rights, something the government had insisted on in the case of AIG. And surreptitious recapitalization lacked legitimacy. It threatened to provoke an even bigger political reaction.

Nor were the skeptics convinced by Treasury's three-page proposal requesting authorization to spend up to $700 billion purchasing mortgage-backed securities. What was in reality only a starting point for discussion was ineptly packaged as draft legislation. Nothing was said about taxpayer protections or congressional oversight. When declaring unusual and exigent circumstances, Chairman Bernanke at least was required to obtain the assent of four other members of the board of governors.[20] Under Treasury's proposal, the secretary would enjoy virtually unchecked powers.

The Troubled Asset Relief Program, or TARP as the plan immediately became known, was wounded on arrival. Within days, reluctance to grant sweeping new powers to the Treasury secretary coalesced with Republican opposition to all further government intervention. On September 29, the bill authorizing Treasury to spend $700 billion on asset purchases was defeated in the House by 228 to 205. That two-thirds of Republicans opposed the bill was embarrassing for the administration and for Paulson especially. The Dow fell by 778 points, or 7 percent, on the news.

But if Congress could speak, then so could the public. In 1929, only 8 percent of Americans had owned traded securities. Now ownership of common equity was ubiquitous, thanks to the creation in 1978 of 401(k) retirement accounts. Unhappy account holders, seeing their retirement nest eggs shatter, lit up congressional switchboards, which quickly got their representatives' attention. On Friday, October 3, on its second try, the House passed the TARP by a vote of 263 to 171. The Senate having already acted, President Bush quickly signed the bill into law.

Congress, still wary about the open-ended powers granted the Treasury, agreed however to release only the first half of the funds. Thus it was unclear whether Treasury would have the resources to repair the financial system. Equally unclear was whether it possessed a coherent strategy for using them. On the Friday the TARP was voted, the Dow Jones Industrial Average plunged by more than 800 points before recovering the majority of its losses.

On Monday, October 6, it then fell by a further 370 points, or nearly 4 percent. This was not a vote of confidence.

Inevitably, the task of triage fell to the Fed. On Tuesday, October 7, it announced an increase in the size of the Term Auction Facility and that it would lend an additional $300 billion to banks with end-of-year cash needs. The next day it announced a more radical step, the creation of a Commercial Paper Funding Facility to lend directly to corporations and nonbank financial institutions. In his most influential research on the Great Depression, Bernanke had in 1983 detailed how the collapse of the commercial paper market on which corporations issue short-term debt disrupted the flow of credit to the corporate sector in the 1930s. The Commercial Paper Funding Facility was designed to prevent a replay of this history. The mechanism was another special purpose vehicle, à la Maiden Lane I, II, and III. Once again, the lessons of the Depression, as distilled by historical scholars, informed the response of policy makers (in this case the two actors being one and the same). As for whether that response would be enough to avert another depression, time would tell.

PART III | Toward Better Times

CHAPTER 15 | Revival or Reform

FRANKLIN DELANO ROOSEVELT was inaugurated as thirty-second president of the United States on a cold and blustery March 4. The extraordinary circumstances were signified by the presence of automatic-weapon emplacements along the route from the White House to Capitol Hill. It had been three weeks since Roosevelt was the target of an assassination attempt by an unemployed bricklayer in which five bystanders were wounded, including one, Chicago Mayor Anton Cermak, critically. The president-elect was addressing a gathering at Bayfront Park in Miami following a cruise on Vincent Astor's yacht. Cermak was there to apologize for having opposed him at the nominating convention and to lobby for RFC assistance for Chicago's banks. In his confession, the gunman, Giuseppe Zangara, explained, "I kill kings and presidents first, and next all capitalists."[1]

But the placement of the machine-gun nests at the entry of federal buildings indicated they were designed to guard not so much the new president as government property, against occupation by the unemployed masses. The events of 1932 had created grounds for concern, if not necessarily for expecting attacks on federal buildings on inauguration day. Working-class demonstrators, some organized by communist-inspired Unemployed Councils, demanded relief services and a stay on evictions. Mayor Cermak had been forced to rescind cutbacks in city relief programs in response.[2] In December some three thousand unemployed had caravanned to Washington, D.C., for a National Hunger March down Pennsylvania Avenue.

Economic conditions deteriorated further in the months between the election and inauguration. By March 4, banks in thirty-seven states were shut or under state-government-imposed restrictions on withdrawals.[3] With panicked households unwilling to spend and producers unable to borrow, industrial production fell to just two-thirds the 1925–1929 average. Freight car loadings were down 56 percent. Automobile production was barely a quarter of its 1929 level. At 2:30 a.m. on the morning of the inauguration, Herbert Lehman, who had succeeded Roosevelt as governor, closed New York's banks. The Stock Exchange shut its doors for only the third time in history, the previous occasions having been in 1873, due to an earlier financial panic, and with the outbreak of World War I. This, one might say, was Wall Street's first Lehman moment.

Such was the situation confronting the new president. There was, of course, the criticism, levied by President Hoover among others, that FDR had brought this dire situation on himself. Hoover had reached out to his successor for help in stabilizing the banking system. Roosevelt's refusal to cooperate robbed the incumbent president, down to his last days in office, of remaining legitimacy, or at least of the will to act.

In particular, Hoover believed that Roosevelt's reluctance to endorse the gold standard inflamed the crisis of confidence. Subsequent events do not support this view. FDR took six additional weeks to clarify his position on the gold standard but only days to restore confidence in the banks. Still, Hoover was convinced of the need to remove this source of uncertainty. He therefore sought to lock the president-elect into a pro-gold-standard position.[4] FDR refused to be pinned down. He may not have yet decided against maintenance of the gold standard, but he wanted to keep his options open.

In addition, FDR and his Brains Trust were aware that they would have had to negotiate the terms of any bank holiday with Hoover and his appointees. And prior to March 4, they would not have had powers of office with which to back their views. The more Machiavellian interpretation is that the worse the situation was on March 4, the more problems could be blamed on Hoover, and the more positive would be the reception of his successor's initiatives.

In his inaugural address, Roosevelt sought to communicate that the day marked the dawn of not just a new administration but also a new era of hope and action. But just what form that action would take was uncertain, in part because it was not obvious who had the president's ear. On the economy, Roosevelt consulted three distinct groups of advisors.[5] The first was a team of progressives led by the Harvard law professor Felix Frankfurter, who had cultivated FDR almost from the moment he appeared on the national stage. Their relationship went back to World War I, when Roosevelt was assistant secretary of the navy and Frankfurter chaired the War Labor Policies Board.

Frankfurter and his students were proponents of an economic and political philosophy developed by Supreme Court Justice Louis Brandeis. Brandeis was concerned to limit the concentrated economic and political power of the robber barons, a problem that gained salience with the development of the assembly line and growth of industrial monoliths like Ford and General Motors.[6] The Brandeisians denied that big firms had efficiency advantages, something they were free to do since they were lawyers rather than economists. Nostalgic for an idealized past of small family firms, the urban equivalent of Jeffersonian democracy, they now sought to restore it by regulating large enterprises.

The Brandeisians were more concerned with reform than recovery and saw the Depression as an opportunity to advance their agenda. Thus, not a few of the regulatory burdens imposed on industry by the New Deal, of which business so vociferously complained, were the products of the febrile minds of Frankfurter and his circle.[7] In December 1933 the English economist John Maynard Keynes published an open letter in which he criticized the Roosevelt administration for emphasizing reform over recovery. Whether he knew it or not, Keynes was really criticizing the Brandeisians and FDR for lending them his ear.[8]

A second group of advisors was made up of professors at Columbia University, including the institutional economist Rexford Tugwell, the corporate law specialist Adolph Berle, and the political scientist Raymond Moley. Founding members of the Brains Trust, they had advised FDR during the campaign. In contrast to Frankfurter's circle, they accepted the inevitability of big business but sought to counter it with big government.[9] More generally, members of this group espoused an expanded role for government in organizing activity, given their conclusion, entirely logical under the circumstances, that the market could not be relied on to do so.

More moderate members of the Brains Trust, believing that the market had broken down only temporarily, therefore called for an expanded role for the government at most on a transitory basis. Some like Tugwell, however, saw the breakdown as symptomatic of deeper problems and justifying a permanent role for government in planning the economy. Again, given the depth of the Depression and extent of dislocations, this conclusion was not illogical. In their view, the urgency of initiating economic recovery combined with the call for far-reaching structural reform to prompt proposals for regulating wages and prices and reducing acreage under cultivation. The National Industrial Recovery Act (NIRA) and the Agricultural Adjustment Act were in large part inventions of this second set of advisors.

A third group was made up of inflationists, led by Cornell University agricultural economist George Warren, with support from gentleman farmer and Roosevelt neighbor Henry Morgenthau. Morgenthau was once the publisher of *American Agriculturalist* magazine; his farm specialized in growing Christmas trees. He became treasury secretary when the president's initial designee, William H. Woodin, was forced to resign for health reasons.[10] In 1929, on becoming governor of New York, FDR created an Agricultural Advisory Commission to advise on farm problems, with Morgenthau as chairman and Warren among its members. As specialists in a sector that saw excess supply already in the 1920s and the prices of whose products fell fastest between 1929 and 1933, Warren and his circle sought to apply the lessons they drew from the farm sector to the economy as a whole. They saw pushing up prices and wages as relieving crushing debt burdens. If abandoning the gold standard was necessary in order to achieve this, then so be it.

Warren's agrocentric views were lent a veneer of respectability by Yale University monetary economists James Harvey Rogers and Irving Fisher. Rogers was an expert on the gold standard and could speak with authority on its deflationary effects. Fisher was precluded from formally advising Roosevelt by his notorious "permanently high plateau" remark, made of the stock market in 1929, not to mention his advocacy of eugenics and support for Prohibition. But his 1933 article on debt deflation, in which he argued that falling wages and incomes could further damage the economy by making existing debts harder to repay, lent intellectual heft to Warren's case for inflation.[11]

The first order of business was resolving the banking crisis. The Brandeisians then, like progressive economists Paul Krugman and Joseph Stiglitz more recently, favored nationalizing the banks.[12] So did progressive senators Bronson Cutting of New Mexico and Robert La Follette, Jr., of Wisconsin. But like Barack Obama in 2009, Roosevelt hesitated. Seizing scores of banks and replacing their management with government administrators would take time, which was in short supply. Injecting public money would have been problematic for a president committed to balancing the budget. At a personal level, FDR socialized with prominent investors and financiers like Vincent Astor; Thomas Lamont, the J. P. Morgan partner, had rented Roosevelt's 12th Street townhouse years before. Notwithstanding his populist rhetoric about banishing the money changers from their "high seats in the temple of our civilization," the new president preferred to work with the bankers rather than against them.[13]

Consequently, Roosevelt's approach to resolving the banking crisis did not differ materially from Hoover's. Already on the Friday night before the inauguration, outgoing Treasury Secretary Mills met with Professor Moley and

Treasury Secretary-designate Woodin.[14] With no set ideas of their own, and having promised the president-elect a bank rehabilitation plan within days, Moley and Woodin simply adopted the plan of their predecessors. The New Deal may have been famously experimental, but there was no experimentation here.

On Sunday, March 5, his first full day in office, FDR invoked the Trading with the Enemy Act to suspend gold transactions and declare a four-day bank holiday, an expedient that would have an echo in Gordon Brown's invoking the UK Anti-Terrorism Act in 2008. This too had been considered by Hoover; the outgoing president even recommended that FDR invoke the Trading with the Enemy Act at a White House meeting on March 3.[15]

Roosevelt next summoned the Congress into emergency session, giving his team three days to finalize their plans. Although the Emergency Banking Act submitted for consideration by the House and Senate—read to the House actually, only one copy being available—was scarcely longer than the three-page memorandum submitted by the Paulson Treasury in September 2008, its reception was different.[16] The House approved the bill by voice vote after just forty minutes and no opportunity for amendment. The Senate passed it three hours later, by an overwhelming 73 to 7. The president signed the bill the same night.

Title I of the act gave legal status to the bank holiday. This had already been recommended to Hoover by a Justice Department uneasy about use of the Trading with the Enemy Act.[17] Title II then empowered the treasury secretary to reopen financially sound institutions while placing unsound banks under the supervision of conservators.[18] A version of this had been prepared for Hoover's use by the Comptroller of the Currency. Title III authorized the Treasury Department to instruct the Reconstruction Finance Corporation to inject capital into financial institutions, taking preferred stock in return. This eliminated the provision in the RFC act permitting the corporation to lend to illiquid financial institutions but not to inject capital, a distinction that had frustrated its efforts to rescue Henry Ford's Guardian Group. This had already been recommended to President Hoover by Franklin Fort, a former Republican member of the House Banking and Currency Committee. Title IV, finally, amended the Federal Reserve Act to loosen collateral requirements for lending to illiquid banks. It allowed the Federal Reserve to issue specially designed Federal Reserve Bank Notes, separate from its normal obligations, against "any notes, drafts, bills of exchange or bankers' acceptances, acquired under the provisions of this act"—against virtually any and all collateral, in other words.

The resulting legislation was not original, but it was comprehensive. Whether it worked would become evident soon enough.

Over the weekend the president used his first fireside chat for a simplified exposition of the plan. On Monday, when banks in the twelve Federal Reserve cities reopened, the crisis was over. As the *New York Times* put it, "In contrast with the 'runs' to withdraw funds which preceded the moratorium, there was a general 'run' yesterday to deposit or redeposit money. The banks generally reported heavy deposits and small withdrawals. In all cases, deposits were said to be larger than withdrawals."[19] On Tuesday, when banks in other cities reopened, customers complained of the difficulty of getting through the doors for the number of other depositors crowding their lobbies. Capitalism was saved in eight days, as Raymond Moley modestly put it.[20]

All this happened before any new RFC-backed bank recapitalization. FDR barely had time to install his man Jesse Jones as head of the corporation.[21] Yet the return of confidence in the banks was immediate. What does this tell us about the nature of the 1933 banking crisis? It suggests that the crisis was driven, in substantial part, by panic. In the same way that panic can be self-fulfilling, it can be dispatched by a time-out and a reassuring fireside chat. The time-out, as progressive historians Charles Beard and George Smith put it, performed the same function as "a slap in the face for a person gripped by unreasoning hysteria."[22]

The fireside chat was more reassuring for the fact that the new president was still enjoying a honeymoon with the public. This in turn suggests that FDR was wise to refuse to cooperate with Hoover. An analogous plan advanced by a discredited president would not have received the same benefit of the doubt. And, extenuating circumstances or not, only a president still on his honeymoon could have pushed such a far-reaching bill through Congress in a matter of hours.

The comprehensive audit of which the Emergency Banking Act spoke and of which historians have spoken subsequently was, in fact, less than comprehensive. It was hardly possible to do a comprehensive audit in two weeks. George Norris, looking back on his experience as governor of the Federal Reserve Bank of Philadelphia, describes how, on receiving instructions from Treasury Secretary Woodin on March 10 to take applications from member banks to reopen, he was literally "besieged with visits and telephone calls from bankers all over the district, whom I could not refuse to talk with." Norris immediately recognized the impossibility "in such a short time to make the careful study of the condition of seven or eight hundred banks which alone would justify my passing a sentence of life or death upon them." He appointed the chairman of his board, the chief national bank examiner of the district, and the head of his examination department, a Mr. Hill, as a three-person committee to ostensibly make this determination over the subsequent weekend. "It was a delicate and difficult task, so onerous and responsible, and performed under such a cruel limitation as to time" that it drove Mr. Hill to a nervous breakdown.[23]

If the comprehensive audit was partly smoke and mirrors, the new powers bestowed on the Federal Reserve System were real, and they had very real effects. The Banking Act empowered the Fed to discount notes, drafts, bills, and acceptances as it saw fit, ensuring that the banks would have the liquidity needed to meet the needs of their depositors. This was not yet deposit insurance, but the implicit guarantee had much the same effect.[24] The promise that the Fed would intervene with the emergency provision of liquidity, by calming investors, bought time to conduct a more systematic evaluation of the banks, which proceeded over subsequent months, and then for recapitalization—for the injection of additional funds by private investors and the RFC.

These were lessons that were relearned in 2012 when investors in European sovereign debt panicked but the European Central Bank calmed the markets with its program of Outright Monetary Transactions (OMT).[25] Much as with the Fed's commitment to provide emergency liquidity in 1933, OMT didn't actually have to be activated; its mere announcement was enough to reassure. It at least bought time to conduct additional stress tests and recapitalize the banks.

Finally, the quick return of confidence suggests that the plan as a whole—conservatorship for insolvent banks, a commitment to provide emergency liquidity, and, where necessary, recapitalization with public funds—made a lot of sense. These elements were well known prior to Roosevelt's taking office; they just had to be implemented. Resolving a banking crisis, this experience suggests, is not rocket science.

The special session of Congress, conceived to address the banking crisis, proved so successful that Roosevelt quickly broadened its mandate from one "b" to three. The second "b," after banking, was beer. FDR proposed legalizing 3.2 percent beer, providing liquid refreshment for his honeymoon.

More consequential was the third "b." Here the president sought to burnish his conservative credentials by making good on his promise to balance the budget. FDR's modern critics have made much of the growth of federal spending during his first term. Roosevelt's deficits were some of the largest in US history outside of wartime. Public debt rose more quickly than in the Hoover years. Ambitious public works projects, from the Grand Coulee Dam to La Guardia Airport, were funded by the Roosevelt administration. Some have gone so far as to argue that deficit spending was the key measure used by the new president to signal his commitment to ending the Depression.

By challenging prevailing policy dogmas, they indicated that Roosevelt was intent on changing the policy regime.[26]

This is a revealing instance of economists seeing in the historical record what they want to see. In fact, Roosevelt did not view himself as out to challenge prevailing policy dogmas, but to uphold them. He believed in balanced budgets. This was an aspect of prevailing policy dogma to which he subscribed as firmly as Hoover.

The president's goal was to balance the budget immediately, completely, and, if necessary, on the backs of his supporters. His first message to Congress after declaring the bank holiday was on economies in government. "For three long years the Federal Government has been on the road toward bankruptcy," he solemnly intoned.[27] Deficits made for the uncertainty that led to the banking crisis. By undermining confidence, they added to the ranks of the unemployed. To drive home the point, FDR appointed as his budget director Lewis Douglas, a representative from Arizona and the strongest voice in the House for balancing the budget. Douglas had warned more than once of the dire consequences of not doing so. His rhetoric would have warmed the heart of Pete Peterson, the twenty-first-century crusader for a balanced budget.[28] Not balancing the budget, Douglas apocalyptically warned, would "plung[e] the whole world into darkness."[29]

Under the plan drawn up by Douglas, the budget would be balanced entirely through spending cuts.[30] Defense spending would fall by 8 percent from amounts budgeted previously.[31] This testifies to the priority FDR attached to budget balance, given Japan's incursion into China and Hitler's rise. Federal wages and salaries were not just frozen but reduced, saving $20 million and $105 million on the military and civilian sides. The largest single saving came from cuts in military pensions, what today we would call entitlements. These savings would accrue from the elimination of payments to veterans disabled for reasons other than their military service.

This was an extraordinary proposal given that disabled veterans were among those hardest hit by the Depression. If they had voted in 1932, they voted for FDR. Cutting their payments was not something Hoover could have done, given the firestorm whipped up by his decision to allow General Douglas MacArthur, supported by Majors George S. Patton and Dwight D. Eisenhower, to disperse the Bonus Army of World War I veterans encamped in Anacostia.[32] Twelve Democratic senators, including Michigan's James Couzens, opposed the reductions, but the bill passed overwhelmingly.

It is unclear how Roosevelt planned to reconcile this commitment to balanced budgets with his other policy ambitions. The press suggested that he hoped to make greater use of existing resources, using military recruiting offices to reach out to the unemployed, for example, and prior appropriations for the federally owned hydroelectric dam and nitrate plant at Muscle Shoals, Alabama, to expand public works. Others question whether FDR was really committed to budget balance. He was already planning to create an emergency budget, they allege, to be financed by borrowing, alongside a regular budget, which would give the appearance of balance.

The fact of the matter is that Roosevelt was conflicted. He sincerely believed in balancing the budget. But having done so once on the backs of the unemployed, he was not prepared to do so again when economic conditions showed only limited improvement. So, as one New Deal program followed another, the emergency budget expanded.[33]

Still, none of this weakened FDR's belief in the principle of balanced budgets. In his 1935 budget message he insisted that "The Federal Government must and shall quit this business of relief" or else pay for whatever elements were not eliminated.[34] He repeated the call when Congress showed itself willing to pay out a bonus to World War I veterans in 1936.[35]

Thus, if FDR's fiscal policy was a "change in regime," this was a change that would take the advent of World War II to acquire conviction. His deficits were inadvertent. As Keynes had warned in his December 1933 letter, they were too small to make a difference.[36]

More important for changing the outlook was monetary policy. This was not yet decided by the gold embargo of March 4, which prohibited banks from paying out gold coin, bullion, or certificates and allowed gold to be exported only under licenses granted by Secretary Woodin. FDR had no choice but to impose the embargo; Hoover would have done so already had he not lost the will to act. The Federal Reserve Bank of New York was out of gold. Had foreigners sought to export it, there was no way the bank could have furnished it.

But the embargo was widely thought to be temporary, just as the bank holiday was temporary, and it could have easily ended up as such. The United States had suspended gold convertibility before, in the exceptional circumstances of the Civil War, but resumed it subsequently. Other countries had suspended and resumed after World War I. Treasury Secretary Woodin's first words on taking office were to reassure everyone within earshot that the United States had not left the gold standard. "It is ridiculous and misleading to say that we have gone off the gold standard, any more than we have gone off the currency standard," he announced. "Gold merely cannot be obtained for several days." Woodin was not being disingenuous; as an avid supporter of the monetary status quo, he believed what he said.[37]

Roosevelt took six weeks to weigh his options. This was long enough to conclude that a functioning banking system and whatever confidence a balanced budget might inspire were not enough to sustain a recovery. Conditions had improved between March and April, but then it is hard to imagine that they could have worsened, given the catastrophic starting point. Not just banks but also shops and factories were closed. With no money in their pockets, people were not buying. Across America the streets were quiet, even deserted. In Akron, Ohio, "The rubber shops closed. Streetcars ran on half schedules. Coal companies shut. Thousands of men still employed despite the Depression were sent home from work 'temporarily laid off.'"[38] Although April was better than March, it was not better than January before the state bank holidays. Industrial production in April barely matched the January level. Employment actually fell by an additional 2.3 percent over the three months from January.[39]

Clearly, more had to be done. Roosevelt's first step was to announce that the embargo on gold exports would continue indefinitely. This opened the door to other measures to push prices up, like those advocated by Senator Elmer Thomas, who proposed a measure mandating government purchases of silver. Thomas, recall, had already been advocating similar measures in 1932, prompting the Fed to take preemptive expansionary action.[40] Which way FDR would now jump became clear when he and Thomas met on April 19. The two men emerged with a compromise that Thomas appended to the bill that became the Agricultural Adjustment Act. The revised Thomas amendment did not set a target for silver purchases but gave the president permission to reduce the gold content of the dollar—equivalently, to push up the dollar price of gold—by as much as 50 percent.

The Dow Jones Average surged by 9 percent on the news. Even today, April 19 remains on the list of the twenty largest daily percentage gains. So much, then, for the belief that abandoning the gold standard would devastate confidence. "The rank and file of the financial district embraced with enthusiasm the prospects of inflation after years of grinding deflation" was the way the *New York Times* put it.[41]

The second step was to make clear that the change was permanent—that the administration had no intention of again subordinating price stability to the imperatives of the gold standard. This Roosevelt accomplished by informing the World Monetary and Economic Conference that stable prices were his priority. The conference had convened in London on June 10. Within three weeks, conferees drew up a declaration calling for a return to the international gold standard.[42] Although their statement was hedged with allowances for countries to return at a time and level of their choosing, there was nonetheless the prospect that it would create pressure for resumption at previously prevailing exchange rates.

That the US delegation had been able to agree on anything was remarkable in itself. Along with Hull, a dyed-in the-wool free trader, Roosevelt sent Key Pittman, an acolyte of William Jennings Bryan. Pittman, the senior senator from the silver-mining state of Nevada and chairman of the Foreign Relations Committee, had inserted into the 1932 Democratic Party platform a plank advocating an international monetary conference; what was left unsaid was his hope that the conference might decide in favor of silver coinage. Now, in London, Pittman left nothing unsaid. He talked nonstop about measures to support silver prices. The exasperated lead German delegate, none other than Hjalmar Schacht, waved his hands in despair on being subjected to yet another Pittman lecture. There is no shortage of tales of Pittman's adventures in London, including his shooting out streetlamps with his revolver and taking a bath in a sink in the pantry at Claridge's.[43]

Another prominent member of the US delegation was Senator William Couzens, the onetime Henry Ford partner whose influence had made it difficult for the RFC to rescue the Guardian Trust Company.[44] FDR may have chosen Couzens for his protectionist views—that is, to neutralize the secretary of state. If so, he was not disappointed. Couzens repeatedly clashed with Hull, speaking out against tariff reductions and refusing to be bound by Hull's instruction that all public statements by US delegates be cleared through him. FDR also sent James Cox, the former governor of Ohio and newspaper publisher, whose hard-money views neutralized those of Pittman. The remaining two delegates were Representative Samuel McReynolds of Tennessee and Ralph Morrison, a wealthy Texan. None of the members of the six-person delegation had prior experience with an international conference.

Roosevelt may have been surprised that, with this kind of leadership from the Americans, the conference made progress, but he was quick to capitalize on the fact. On July 3, in his bombshell message, transmitted to London from Washington, D.C., he rejected the conference declaration, asserting that priority should instead be attached to policies stabilizing the purchasing power of money. He dismissed the gold standard as exemplifying "the old fetishes of international bankers," language that succeeded in antagonizing the bankers and foreign leaders equally. The inflammatory rhetoric was designed to make his priorities unmistakable, not just to the delegates in London but to the American public. Historians continue to ask what convinced investors that the administration was committed to raising prices. What convinced them was that Roosevelt was prepared to antagonize his allies, shoulder blame for the collapse of the conference, and hang his own delegation out to dry.

FDR's bombshell has been criticized for driving a final nail into the coffin of international cooperation. It was invoked in 2008–09 as an example of the kind of nationalistic policies that governments responding to the Great Recession should avoid.[45] By pushing down the dollar, the United States aggravated the competitiveness problems of other countries. By derailing the conference, Roosevelt destroyed the last chance for a coordinated response.

In fact, this supposed "lesson" of history is mistaken. The alternative to monetary nationalism was not a coordinated response to the Depression for the simple reason that governments could not agree on how to respond. European governments saw the priority as stable exchange rates rather than a stable price level. Rather than seeking to vanquish deflation, they saw inflation, by which they were haunted as a result of their 1920s experience, as the real and pressing danger. Not having experienced a slump as long and deep as that of the United States, they continued to prioritize liquidation over recovery. Only if speculators felt sufficient pain, they insisted, would another round of excesses and an even more serious depression be avoided. This was not a view with which Roosevelt could make common cause.

So much, then, for coordinated action. Officials in various countries were unable to agree on a common diagnosis of the economic problem, pointing them to different remedies. Initially, Roosevelt hoped otherwise. As recently as April 19 he had spoken of the desirability of stabilizing currencies, which would be feasible if countries also agreed on coordinated reflationary action. But meetings with other heads of state, notably Édouard Herriot, the former prime minister who chaired the foreign affairs committee in the French Chamber of Deputies, convinced him that it was not to be.[46] The only route to reflation was unilateral. It ran through the bombshell message.[47]

In 2008–09 there would be more scope for coordinated action because the authorities in various countries shared a common diagnosis of the problem. The idea that the collapse of the World Economic Conference in 1933 was regrettable and that anything similar should now be avoided—like the textbook interpretation of the Smoot-Hawley tariff—was an instance of bad history encouraging good policy.

Roosevelt's third step was to push up the price of gold, and with it the prices of other commodities. On October 22 he announced he was authorizing the Reconstruction Finance Corporation to purchase newly mined gold. The timing is explained by pressure from Western states to get agricultural prices up. Dissatisfied by the pace of progress, Senator Thomas, ever the instigator, announced a conference of farm and industry leaders on October 24 and threatened to lead a million-man march on Washington.

The president now sought to preempt this movement. Every morning, over his breakfast of orange juice and eggs, he decided in consultation with Henry Morgenthau and Jesse Jones by how many cents to raise the RFC's offer price. On some days he raised it by a couple of cents, on others more. The purpose, as Jones later described it, was to keep the speculators guessing.[48]

The goal of higher commodity prices and the strategy of pursuing it by pushing up the price of a particular commodity, gold, were clear. But the tactics were opaque. No one knew by how much the president would push up the price of gold on a particular day. Critics complained that the administration's capricious approach was discouraging investment. In November, the Federal Advisory Council, a group of bankers advising the Federal Reserve Board, warned that uncertainty was depressing the bond markets. Only when that uncertainty was removed, the council admonished, would there be a lasting improvement in business.

Keynes, in his December letter to the president, agreed. "The recent gyrations of the dollar," he wrote, "have looked to me more like a gold standard on the booze than the ideal managed currency of my dreams." FDR's game of blindman's bluff with currency speculators was creating confusion. Stabilizing the price of gold at a higher level, say $35 an ounce, was one way of removing this uncertainty. But doing so might be inconsistent with the president's goal of boosting commodity prices. Better, Keynes concluded, was for the administration to announce a goal for monetary policy—a price level target, for example—and a modus operandi for achieving it. His preference was for the Treasury to intervene in the foreign exchange market to hold the dollar within a range but push it up or down as needed to keep the price level stable.[49]

Keynes' recommendation, not for the first time, made a lot of sense. FDR's decision in January to instead re-peg the dollar to gold at $35 an ounce could have been a disaster.[50] There could have been gold outflows, putting downward pressure on the money supply, in which case deflation and the negative expectations it engendered would have been back.

As it turned out, economic problems and political tensions in Europe caused gold to flow toward America rather than away. The gold bloc centered on France was still locked in deflation, and investors were looking for a way out. The storm clouds of World War II were already blowing up. In response, European investors shifted toward the dollar, an obvious safe haven. As they did so, they pumped up US supplies of money and credit, helping to stabilize the American price level.[51] Roosevelt's monetary policy may have been less than ideal, but fortunately for him, European policy was worse.

Readers will recognize here the dollar's "exorbitant privilege" as the world's only true safe haven currency.[52] The origins of that status, then, go back to 1934. This was the first in what eventually became a long series of instances when investors rushed into dollars in response to untoward events. This behavior gave the United States, in effect, an automatic insurance policy—that is, a currency that strengthens when things go wrong. This insurance would come in handy in 2008 with the failure of Lehman Brothers.

CHAPTER 17 | Takahashi's Revenge

THE GREAT DEPRESSION was a crisis not just for the United States but for the world. It was the most serious global crisis in memory. For most countries it was the most serious crisis since World War I.

One might think that a crisis of this magnitude would have shocked governments and central banks into action. But officials hesitated to resort to the kind of exceptional measures to which they had turned in wartime. Balanced budgets remained the order of the day, or the aspiration of balanced budgets anyway, since achievement of the same remained elusive. This was very different from the response in 1914, when orthodoxy quickly gave way in the fight for national survival.

Likewise, the gold standard may have collapsed, but central banks and their political masters were reluctant to capitalize on their newfound freedom. Instead they sought to surrender it as quickly as possible by re-pegging the national currency, if no longer to gold then to sterling or the dollar. The instincts that led FDR to re-peg the dollar to gold at $35 an ounce already in January 1934 and to do what he could to restrain the growth of government spending were by no means uniquely Rooseveltian, or for that matter uniquely American.

The specifics were shaped, to be sure, by distinctive aspects of each country's experience. That said, it is possible to identify some common factors affecting the policy response, or lack of response, virtually everywhere. There was belief in the analogy between the household budget and the government budget. Governments should live within their means, and any tendency to do otherwise could only come to grief. Keynesian theories of countercyclical fiscal policy had not yet been developed, for better or worse. (Opinions differ.) Historians of economic thought like to point to contemporaries like Bertil Ohlin in Sweden and Paul Reynaud in France, who were able to intuit the argument for deficit spending in a slump. But even if recovering early proto-Keynesian arguments from contemporary writings is popular sport, it is hard to maintain that such arguments had much of an impact. What mattered more were the imperatives of rearmament, which led governments to increase spending and tolerate deficits as a matter of national survival, as they had in World War I. The bulk of that deficit-financed military spending occurred later, in the second half of the 1930s, by which time the crisis was long in the tooth.

In addition, there was the association of budget deficits and central bank credit creation with inflation, first during World War I and then in the 1920s.[1] In countries like Germany, the public was traumatized by inflation. With that history still vivid, officials were reluctant to contemplate anything that might be seen as courting a recurrence of the experience, however remote and however radically circumstances were now changed. What is more remarkable is how those same fears of inflation, brought alive by this history, informed and inhibited policy in other countries, like the UK, that had experienced the phenomenon only at second hand.

Associated with these fears was an all-but-universal reluctance to abandon the exchange rate as the anchor for monetary policy. The exchange rate against gold had been the basis for central bank decision making for years. The one peacetime exception, the first half of the 1920s, was a disaster of inflation and financial instability. The gold standard had malfunctioned, but there was no coherent alternative for conducting monetary policy. Much later, in the 1990s, central banks developed the conceptual framework known as "flexible inflation targeting."[2] When the crisis hit in 2007–08, they were willing to let their currencies move, if such movement was a corollary of monetary policies directed at stabilizing prices and output. But in the 1930s, the absence of a coherent alternative to the traditional exchange-rate-centered approach to monetary policy left central banks reluctant to abandon it. This in turn limited their ability to stabilize not just prices but also the economy and its financial system.

This reluctance allowed the Depression to deepen and persist. That depth and persistence in turn did much to discredit prevailing economic and financial arrangements. In some cases, as in the United States, this prompted efforts to repair and rehabilitate the market system. It led to regulatory reforms designed to stabilize financial markets, institutional reforms to strengthen the conduct of monetary policy, and social policy reforms to protect those unable to protect themselves. In other cases, as with Germany, the Depression and the failure of policy makers to address it led to less constructive outcomes. The market system was rejected in favor of state direction. This alternative to fixing the broken market economy, it would transpire, was far worse.

The exception that proves the rule, demonstrating what was possible when a government took concerted action, was Japan. The country had already endured a difficult decade, growing at less than 1 percent per annum between 1919 and 1929. Activity was disrupted by bank runs and financial panics. Failure of the Osaka-based Masuda Bill Broker Bank in April 1920 provoked runs across the country. In February 1922 the failure of Ishii Corporation, a lumber company speculating in commodities, sparked runs in Osaka, Kyoto, and Kochi Prefecture on banks thought to have ties to Ishii and one another. The Kanto Earthquake of 1923 wrought financial as well as physical damage, destroying the offices of fully 80 percent of all banks in Tokyo, leading to fears of more bank runs, and prompting a moratorium on debt payments. The government encouraged the Bank of Japan to discount commercial paper and other obligations payable in the affected areas and adopted an emergency ordinance promising to indemnify the bank, not unlike how the US Treasury in 2008 offered to indemnify the Fed for any losses it incurred as a result of its rescue of Bear Stearns.[3] There was then a further round of runs in 1927, when in the course of the debate in the Diet over the terms of that compensation officials revealed the existence of financial problems in Suzuki & Co., a large trading house in Kobe, and its financial partner, the Bank of Taiwan.[4]

This litany of woes and the need for central bank intervention on each occasion resulted in delays in returning to gold.[5] Japan finally did so in January 1930, in an act of exquisitely bad timing. The consequences were not unlike those in Britain, only worse. As in Britain, prices had risen sharply during the war. But in Japan, it was not possible to push them back down as rapidly as in Britain in the 1920s. Instead the Bank of Japan was forced to provide credit to keep the banks on life support. Thus, it could not restore the prewar exchange rate against sterling and gold.

Once conditions finally normalized sufficiently for the prewar exchange rate against sterling to be restored in 1930, the yen was significantly overvalued. This made for trade deficits and gold losses. It fed expectations that, when Britain abandoned the gold standard in September 1931, Japan would necessarily follow.

The Minseitō Party campaigned during the 1928 national election on a platform to cut wasteful public spending and restore the gold standard. The prime minister from 1929, Osachi Hamaguchi, appointed Junnosuke Inoue as his finance minister because he thought that Inoue, a fellow believer in gold standard orthodoxy, could successfully execute the policy. The austere, upright Inoue having done so successfully, he had much invested in the policy status quo. Following Britain's departure from gold, he quickly reaffirmed that the monetary standard would be defended. The Bank of Japan raised the discount rate in October and again in November in an effort to carry out his wishes.[6]

The Federal Reserve had responded similarly to the reserve losses precipitated by Britain's departure from gold.[7] But where America's gold peg held, Japan's did not. Japan had a greater recent record of financial instability. Worried about the state of the banking system and doubtful about the capacity of the central bank to continue draining liquidity from financial markets, National City Bank, the Hong Kong and Shanghai Banking Corporation (HSBC), Sumitomo, Mitsui, and Mitsubishi sold yen for dollars. Gold outflows continued unabated.[8] Unable to agree on steps to contain them, the Minseitō-led government was forced to resign on December 12.

This brought to power the opposition Seiyūkai Party, and specifically Finance Minister Korekiyo Takahashi. The elderly Takahashi was an unlikely revolutionary. The illegitimate son of a court painter at Edo Castle, he was born in 1854, a year after the arrival of Commodore Perry's black ships, and as an infant was adopted into the lowest rank of samurai. As a young man he served as an entry-level bureaucrat, first in the Ministry of Education and then in the Ministry of Agriculture and Commerce, before going to work for the Bank of Japan. For having helped to arrange the foreign loans that financed the country's war against Russia, he was awarded a peerage in 1905. In 1913, not yet forty, he was appointed finance minister. By 1931 he was on his fifth tour of the position. This obviously was no financial neophyte.

Takahashi held the further advantage that by 1931 Japan had formulated its monetary policy without support from the gold standard for more than a decade. Making monetary policy without that familiar structure was thus not something with which he or the Japanese public was unfamiliar. The decision to return to gold in 1930 having been taken by his predecessor, a member of the opposition party, Takahashi could reverse it without embarrassment.[9] In addition, there was a sense of rivalry between Inoue and Takahashi. Inoue was an exponent of not just the gold standard but also fiscal austerity; his rival Takahashi was happy to position himself as the opposite.

This decision to follow Britain off gold was not unlike the response of a number of other countries, as we will see below. What was unique was Takahashi's concerted use of policy to jump-start the economy. Immediately on embargoing gold exports, he moved to push down the exchange rate in order to vanquish expectations of deflation and strengthen export competitiveness.

In March 1932 he proposed that the Bank of Japan directly purchase all newly issued government bonds, expanding the money supply. This was actually more than a proposal, since the Bank of Japan was not independent but, in fact, under the supervision of the Ministry of Finance, Article 16 of the Bank of Japan Act providing a legal basis for the finance minister to instruct the central bank to engage in transactions in government bonds. There was little resistance within the bank; to the contrary, Takahashi received intellectual and political support from the deputy governor, Eigo Fukai, a fellow English speaker and friend.[10] Other members of the bank's administrative hierarchy were more skeptical but, the central bank not having exactly covered itself in glory, were in no position to object.[11]

In June Takahashi then submitted a supplementary budget providing for new spending on rural relief and on the army's military operations in Manchuria, where renegade officers, protecting Japan's colonial holdings there, had staged a terrorist incident they blamed on Chinese bandits, allowing them to launch a police action. Takahashi himself was opposed to Japan's military intervention in Manchuria, but he could still use it to advance his economic strategy.[12]

All this, Takahashi now proposed, should be financed by bond issuance. Remaining limits on the ability of the Bank of Japan to purchase those bonds were then removed by a law raising the amount of unbacked currency the bank could issue from ¥120 million to ¥1 billion, and by a second measure placing controls on capital outflows. The expectation, clear in light of Takahashi's actions and statements, was that the Bank of Japan would do its part to help finance his deficits. The government and central bank would be working in harness to actively bring deflation and depression to an end.

This, then, was an aggressively reflationary monetary policy made credible by fiscal expansion. In other words, it was precisely the policy claimed, erroneously, to have been followed in the United States under FDR.[13] But in Japan, unlike the United States, the fiscal expansion was real.

Here at least is one case where economic analysis may have played a role. Takahashi had firsthand knowledge of Western economic literature, having gained fluency in English at the age of eleven, when he was sent to the treaty port of Yokohama to study with American missionaries. (Takahashi was selected for foreign-language studies by a progressive samurai who understood that Japan, to survive, would need to import military technology, notably from the United States and Britain, and that language skills would be needed for the next generation to achieve these ends.[14]) Takahashi was familiar with the *Tract on Monetary Reform*, the 1923 book in which Keynes emphasized the distinction between exchange rate stability and price stability and the need to prioritize the latter. He was up to date on subsequent intellectual developments, being an avid reader of the *Times* of London.[15]

The results of his initiative were dramatic. Rates on short-term money fell from 15 to 1 percent. The money supply stabilized in 1932 before rising sharply in 1933. In the year from December 1931, the yen depreciated by more than 40 percent against the pound sterling and 60 percent against the dollar. Wholesale prices rose by 7 percent in 1932 and 12 percent in 1933, while industrial production rose even faster. Real GDP grew by 7 percent in 1932 and 8 percent in 1933.[16]

This was a happy outcome for the economy, if not also for Takahashi. When Japan returned to full employment in 1935, he cut back on defense spending—resulting in his assassination by disaffected military officers.

Japan's experience thus illustrates what concerted monetary expansion, backed by fiscal stimulus, could do. But it is hard to find other similar examples. More typical was the response of the Bank of England. The bank's hand had been forced, as we saw in Chapter 10, by the run on sterling that led to the suspension of convertibility in Montagu Norman's absence. But even then, it was far from clear what would come next. The pound fell to $3.40 in the first week of floating, losing a quarter of its value. After a brief recovery, it then fell further to $3.23 at the beginning of December.

At this point Norman grew worried that any further decline would fatally undermine confidence. He also had to address the concerns of other governors and directors who had stepped into policy roles in his absence. Since assuming the governorship in 1920, Norman had turned the Bank of England virtually into a personal fiefdom. But his incapacity over the summer and absence at the time of the country's most critical financial juncture transformed internal decision-making processes. Committees were set up in his absence; advisors were consulted. Following his return, they continued to meet and to advise. Decisions now were taken collectively, in response to collective hopes and fears.

Specifically, there was the collective fear that if panicked sales of the currency followed, Britain would succumb to the kind of inflation that had infected France and Germany in the 1920s. That inflation was the fear at a time when unemployment was 22 percent—when deflation was the real and present danger—can only be understood in light of collective psychology informed by this recent Continental experience.

Concerned that sterling was on the brink, Norman and his colleagues kept the bank's policy rate at 6 percent through the end of the year and into 1932. The idea that sterling was poised to collapse was far-fetched, of course.

The currency still had faithful followers in the banks and governments of the Commonwealth and Empire, and in other countries with extensive trade relations with Britain. But there was no more powerful conservative impulse than fear of the unknown, the gold standard having been the touchstone of policy for more than a century.

Norman, predictably, made no bones of his desire to return, albeit at a lower parity than before. Even Keynes, famously a critic of Churchill's decision to return to gold in 1925, now encouraged the government to pursue an international agreement to restore gold convertibility and fixed exchange rates, albeit with the higher gold price and lower backing ratios needed for price stability. But agreement on a gold peg remained elusive.[17]

This context makes the cautious reorientation of policy easier to understand. Time was needed for old fears to subside. Only on February 18, nearly five months following the suspension of convertibility, did the Bank of England finally cut interest rates, from 6 to 5 percent. No exchange rate collapse or inflationary outburst materializing, it cut rates to 4 and then 3.5 percent in March, and finally to 2 percent in July. This, then, was the advent of Britain's policy of "cheap money," ten long months after the collapse of the old regime.

In fact, the important policy innovations, as in Japan, were undertaken not by the ever-conservative central bank but by the Treasury. Neville Chamberlain, son of Joseph Chamberlain (the father having been mayor of Birmingham, a member of Parliament, and, in his time, the country's leading protectionist politician), was appointed Chancellor of the Exchequer as a result of the October 1931 general election, which saw decisive rejection of the failed Labour government and election of a Conservative-dominated parliament. Eventually, Chamberlain's name would become synonymous with appeasement. But if as prime minister and geopolitical strategist he was a disaster, he was a singularly effective chancellor by the standards of the time.

Effective by the standards of the time meant balancing the budget, as Chamberlain energetically set out to do with backing from his Conservative majority.[18] His biographer, William Rock, captures well the prevailing ethos: "There was no relief from taxes; that might lead to a premature relaxation of the efforts which were beginning to produce a revival of public confidence. Drastic economies were necessary before the normal expenditures and revenue could be balanced; therefore, drastic economies there would be."[19] The resemblance with the policies of the David Cameron–led Conservative-Liberal government starting in 2010 was more than superficial.

Equally consequential was Chamberlain's decision to set up an Exchange Equalisation Account (EEA) in the Treasury. The stated purpose of the account was to smooth fluctuations in the value of sterling by intervening in the foreign exchange market. In practice, however, the bulk of that intervention took the form of purchasing foreign exchange with sterling in order to keep the currency from rising. As Susan Howson, the unofficial historian of the EEA, judiciously put it, "It is clear that the authorities wished to reduce fluctuations in the exchange value of the pound, particularly upward fluctuations."[20]

Using the EEA, Chamberlain kept sterling at a competitive level and ensured an adequate supply of domestic credit. Although he consulted with the Bank of England, it was the chancellor who made the final decision on the stance of policy. This was another example, in the manner of Takahashi, where a political leader seized the reins from a central bank that hesitated to act. Yet another instance of the same, as we have seen, was in October 1933, when FDR intervened in the gold market to push prices up and the dollar down.

As in the United States, and in contrast to Japan, however, there were no large-scale budget deficits accompanying this monetary expansion and no pressure on the central bank to buy the bonds issued to finance them. Moreover, a central bank discount rate of 2 percent, which was what Britain now enjoyed, was not cheap money by the standards of Mervyn King or Ben Bernanke. Supplies of money and credit increased only as permitted by inflows of foreign currency, which were then absorbed by the EEA in exchange for sterling. These could be fickle: inflows grew large in December 1932, when worries developed about a possible dollar devaluation by the US president-elect, but they could be small and even negative at other times. The British money supply, broadly defined, grew by 10 percent in 1932 but then stagnated in 1933.[21] There was no attempt to push sterling down or to expand the money supply more aggressively. Once FDR completed his gold-buying program, the sterling rate against the dollar essentially returned to its early-1931 level, where it was stabilized.

If this was weak soup by the standards of Japan, the policy was better than nothing. A higher domestic currency price of gold meant a higher price level. Wholesale prices stopped falling in the summer of 1932, coincident with the reorientation of policy. Industrial production bottomed out in the third quarter and started rising in the fourth. The subsequent recovery was driven by interest-rate-sensitive spending, notably housing starts, motor vehicle sales, and, beginning in 1934, industrial investment. Cutting interest rates and preventing further falls in the price level also reduced the cost of servicing the heavy public debts inherited from World War I. Britain was able to maintain debt sustainability without having to endure even more severe public spending cuts.[22] This was not vigorous recovery à la Japan, but it was recovery after a fashion.

Members of the Commonwealth and Empire and other countries trading heavily with Britain were uncertain how to proceed. With their partner now off the gold standard, the advantages of adherence to that system were clearly diminished. There was an incentive to allow the currency to depreciate along with sterling in order to limit the loss of competitiveness in the British market. But rather than follow Takahashi in taking aggressive action, they followed Chamberlain, re-pegging to the pound, generally at levels not too different from those prevailing before 1931. In effect, it was the chancellor and the technicians at the Bank of England implementing his policy who determined the price level of the members of the sterling area.

The extent to which the subsequent policies remained exchange-rate-centered is striking.[23] Sweden is regularly held up as one country that developed a coherent alternative in the form of price level targeting. The Riksbank, the country's central bank, set an explicit target for the price level, it is said, and adjusted policy accordingly. Swedish policy was informed by economists like Gustav Cassel and Eli Heckscher, who were skeptical of the efficacy of the gold standard. The country had a long intellectual tradition, pioneered by the great Swedish economist Knut Wicksell, of prioritizing the stability of the price level as the proper aim of central bank policy.[24] And, critically, Sweden had the advantage of not having endured a disruptive German- or French-style inflation, allowing officials to contemplate alternatives.

There was much rhetoric about the desirability of stabilizing the price level. The Banking Committee of the Swedish parliament, or Riksdag, which supervised the central bank, formed a committee to consider alternatives. It warned against the precipitous resumption of gold convertibility and urged avoiding both deflation and inflation. Riksbank researchers constructed a new index of consumer prices to enable the central bank to better monitor price level trends.

But, new index of consumer prices or not, the board of the Riksbank remained preoccupied by the stability of the exchange rate, this still being regarded as the most reliable indicator of inflationary or deflationary tendencies. When the krona then showed signs of strengthening excessively in the spring of 1933, it was pegged to the pound at a level that remained unchanged until the outbreak of World War II. Having depreciated sharply in the Kreuger crisis of 1932, the currency was now competitively valued.[25] But that valuation was more an inadvertent consequence of the crisis than a conscious monetary strategy. So much, then, for price-level targeting as an alternative to exchange-rate-centered policies.[26]

The story in Latin America was again similar. Since the United States rather than the UK was the most important trading partner of many Central and South American countries, they pegged their currencies to the dollar.[27] Their governments having borrowed heavily abroad, currency adjustment was delayed until something was first done about the debt; otherwise, depreciating the currency would have made external obligations denominated in dollars impossible to service. Exchange controls were imposed to limit imports. One Latin American country after another then suspended debt service payments, after which devaluation of the currency could follow. Although antagonizing the creditors by halting interest payments was not ideal, foreign lending had already collapsed; there were worse fates now than having one's bonds de-listed in New York and London. With the collapse of foreign trade, there was similarly less fear of trade retaliation.[28]

Having been cut loose from gold, the currency and balance of payments were now supported by imposing tariffs on imports of manufactured goods. Latin American countries had not seen much in the way of industrial development prior to this period.[29] This now began to change as currency depreciation and tariff protection caused households and firms to substitute the products of domestic manufacturing firms for imported manufactured goods.[30] There were also other less salutary government interventions, like those of the Coffee Stabilization Council in Brazil, which purchased fourteen million bags of coffee, only to burn them and dump them at sea in a futile attempt to support the world market price.

Still this was nothing remotely approaching the extent of intervention in Germany and the countries of Central and Eastern Europe soon to come within its orbit. Germany, Austria, and Hungary, as victims of 1920s hyperinflation, were supremely reluctant to contemplate anything that might be construed as monetary manipulation. Even after the 1931 financial crisis, they continued to maintain the pretense, if not the reality, of the gold standard. Rather than allowing their currencies to move, they applied exchange controls to limit capital flight. Hungary was first to do so, in July 1931, when it was infected by the banking crisis in its old imperial partner, Austria. Within months Czechoslovakia, Bulgaria, Romania, and Yugoslavia all followed.

An advantage of exchange restrictions for authoritarian governments was that they provided an additional lever with which to control the economy. By controlling the allocation of foreign exchange, they could determine the source and composition of imports. Exchange control was thus a step toward market socialism and, ultimately, central planning. It was an instrument of foreign policy that governments, notably Germany's, deployed by demanding concessions and negotiating bilateral agreements with trading partners over which they had economic leverage.

Germany, as it did in other contexts, took these destructive tendencies to the extreme. Hitler himself was not especially knowledgeable of economic matters. On being appointed chancellor by President Paul von Hindenburg in January 1933, he turned for guidance and advice to Hjalmar Schacht, the Magician who had supposedly conjured up the 1924 stabilization. As power hungry as ever, Schacht not so secretly cultivated the chancellor-to-be and encouraged a reluctant Hindenburg to appoint him following the Nazis' strong showing in the 1932 election. Thus, among Hitler's first acts was to reappoint Schacht to the presidency of the Reichsbank, replacing Hans Luther.

Power hungry or not, for more than six months Schacht made essentially no use of his monetary powers to reflate the economy. With memories of hyperinflation omnipresent, he allowed the money supply to keep falling for the balance of 1933.[31]

But in the absence of monetary reflation, it was necessary to resort to less savory methods to stabilize the economy. Strikes were banned and union officials were arrested as the Nazis sought to boost employment by keeping wages low. Prices were controlled, and a price commissioner was appointed to monitor them. The Nazis established marketing boards with the exclusive right to purchase agricultural goods, first to support farm prices and then to keep them down as the economy recovered. They signed long-term contracts with industrial groups to purchase their output at fixed prices, using the threat of nationalization to secure favorable terms. From there it was a small step to establishing the Hermann Göring Works and other government-owned enterprises.

Understanding where the real power lay, Schacht moved in 1934 to the Ministry of Economics while also retaining his central bank presidency. There he enjoyed the kind of decree powers of which central bankers can only dream. Starting in September, when he announced his "New Plan" for overseeing all foreign exchange purchases and sales, with the exchange rate for trade depending on the country, there was a sharp shift in the composition of imports from consumer goods to the materials needed for rearmament. From this point, Schacht's control of the country's international transactions was complete.

However unsavory the means, the government's ends were achieved. Output rose by 25 percent between 1933 and 1935, rescaling the peak reached in 1928. All this was done in the interest of rearmament, and only incidentally recovery, but no matter. Growth was led by capital spending on the military-industrial complex (steel, chemicals, aircraft, and motor vehicles). "Hitler had found a cure against unemployment before Keynes was finished explaining it," was the way the Cambridge economist Joan Robinson put it.[32]

This was an exaggeration. The budget deficit of the Reich rose from essentially zero in 1932 to 3 percent of GDP in 1934, where it remained until 1937. This was a significant fiscal stimulus by the standards of the time, but it was too small to restore full employment in an economy with an unemployment rate above 20 percent and in which output had fallen more than 25 percent below potential.[33] The association between budget deficits and inflation was still too vivid for even Hitler to engage in aggressive fiscal expansion.

And it is not as if whatever employment was created stimulated consumer spending. Wages were controlled. The availability of consumer goods was limited. Farmers were prohibited from borrowing to finance modernization and obtain working capital. "Guns, not butter," the well-known slogan, was in fact coined by the Nazi propaganda ministry in 1935 to impress on the German public the priorities. Hitler could point to the restoration of full employment, but the main mechanisms by which this was achieved were the introduction of compulsory military service in 1935; transformation of the voluntary labor service into the obligatory Reich Labor Service, in which men aged eighteen through twenty-five were required to serve six months; and the Nazis' propaganda campaign against the labor force participation of women—not the Keynesian stimulus of which Joan Robinson admiringly spoke.

The Nazis were a peculiarly German aberration, although they had analogs in antisystem parties in other countries experiencing deep depressions, whose mainstream parties showed little ability to cope with the consequences. But even where the result was not political extremism, deflation encouraged an interventionist response.

This was most notably the case in countries that clung to the gold standard—France, Belgium, the Netherlands, Switzerland, and Italy—where deflation and depression were worst. Spending on final goods being in short supply, their governments resorted to tariffs and quotas to bottle it up. The Netherlands, having been faithful to free trade since the sixteenth century, now raised import duties by 25 percent and applied quotas and licensing fees to both imports and exports.[34] France had negotiated commercial treaties with its neighbors in the 1920s under the leadership of the visionary pan-Europeanist foreign minister Aristide Briand; now it applied quotas, product by product and country by country. Belgium, an open economy reluctant to tax foreign goods for fear of retaliation, doubled its tariffs between 1928 and 1935 while, in self-protection, negotiating special bilateral agreements with its powerful French neighbor. Defending the strong lira established by Mussolini in 1927, Italy adopted the largest absolute increase in tariffs of any country save Germany and used comprehensive exchange controls as a lever for negotiating German-style bilateral clearing arrangements with its trading partners.[35]

Governments resorted to these disruptive interventions because existing institutions and policies had not delivered socially acceptable outcomes. If free trade did not deliver the goods, it followed that trade needed to be managed. If foreign lending was associated with instability, then foreign lending needed to be controlled. In fact, what made the Great Depression great were not the problems of trade or even foreign lending, but the flawed monetary and fiscal policies that flowed from a flawed monetary and fiscal regime. But where that regime was too deeply embedded to be uprooted, governments unable to respond by fiscal and monetary means responded in the only way they knew, by controlling trade and capital flows.

The alternative treatment, like chemotherapy administered to a cancer patient, had unfortunate side effects. Tariffs were not raised across the board. Instead, the most generous protection was afforded to the least efficient agricultural and industrial sectors, which were most desperate to attract spending and most at risk of losing sales to foreign competitors. These, naturally, were the sectors that lobbied most intensively for help and got it more often than not. Sectors propped up by protection grew accustomed to public support and adept at lobbying for its extension. The same sectors that benefited from these interventions in the 1930s, like agriculture, were again the recipients of the most generous protection after World War II.[36]

The consequences for international relations were even worse. Germany used its trade-policy levers to increase the dependence of its Eastern European neighbors on its economy.[37] Trade-policy conflicts in turn hindered the efforts of the allies to form a united front against the Reich.

After 2008–09, central banks were criticized for cutting interest rates to zero and expanding their balance sheets in the effort to reflate their economies, on the grounds that those policies distorted financial conditions, threatened an outbreak of inflation, and had other damaging side effects. A close reading of the 1930s suggests that the counterfactual in which central banks sat on their hands would have seen even more damaging consequences.

CHAPTER 19 | Preventing the Worst

In 2011, in an interview with the *Daily Telegraph*, Bank of England Governor Mervyn King succinctly summarized what had been achieved by the response to the crisis. "We prevented a Great Depression," King baldly stated. Readers may have been inclined to dismiss the comment, coming from a leading central banker, as self-aggrandizing hyperbole, but King's assertion was not inconsistent with the facts. Global GDP dropped by a disastrous 15 percent between the peak in 1929 and the trough in 1932. Between 2008 and 2009, in contrast, it fell by just a fraction of 1 percent, and growth resumed already in 2010.[1] Even in the advanced countries hit hardest, the fall in 2009 was 3.5 percent of GDP, and growth turned positive again the next year. All was not sweetness and light, but this at least was no Great Depression.

There is no question that policy makers deserved much of the credit. Not all of it, of course. Changes in economic structure over the intervening decades also helped to moderate the slump, insofar as the relatively volatile industrial sector became less important in the advanced economies, while the stabler service sector acquired a heavier weight. The growth of government strengthened the effectiveness of automatic fiscal stabilizers, which work mainly by reducing tax payments when incomes fall. Nothing similar happened in the 1930s, since taxes accounted for a much smaller share of GDP and because governments did what they could to prevent deficits from emerging. The institutionalization of the global trading system, culminating in creation of a World Trade Organization with binding dispute-settlement powers, discouraged resort to beggar-thy-neighbor trade restrictions.[2] Central bank cooperation was fostered by regular meetings at the Bank for International Settlements. Solidarity among governments was forged by heads of state and ministers meeting as the G20.

These institutional developments built in turn on the lessons of the 1930s. The growth of government reflected the conviction, seemingly ineluctable in the wake of the Great Depression, that the market left to its own devices was unstable. It reflected the conclusion that if individuals were unable to protect themselves from the vicissitudes of an unstable market, then government would have to protect them, if capitalism was to survive. New Deal programs establishing work relief, unemployment insurance, and Social Security are all to be understood in this light.

Similarly, belief in the importance of fiscal stabilizers was an implication of the theories developed by John Maynard Keynes in response to the Depression. These theories showed that fiscal policy is especially powerful in a depression, when interest rates approach zero. The worst thing governments can do, economists concluded on the basis of this experience, is to raise taxes and cut public spending in a slump. Central banks were reorganized to prevent the monetary mistakes of the 1930s from being repeated. Decision-making power was centralized in the hands of the Federal Reserve Board, as we have seen, to prevent the Reserve banks from working at cross purposes. Efforts to strengthen the institutions of international economic cooperation were likewise animated by the view that they had failed disastrously in the 1930s.

The institutions for the most part survived intact, though the historical lessons inspiring their creation did not. Initially, central banks responded more forcefully than in 1929, making use of their enhanced powers. Governments cut taxes and boosted public spending to offset the fall in private demand. In April 2009, at the London G20 summit that was the high point of international cooperation, they agreed to coordinate their fiscal initiatives and shun beggar-thy-neighbor policies. The US Congress extended the duration of unemployment benefits to ninety-nine weeks. It increased food stamp eligibility and benefits in recognition that the crisis was having a disproportionate impact on the most vulnerable.

Although the specifics varied across countries, the response, qualitatively, was everywhere the same. Given the speed with which the crisis unfolded, there was no alternative to relying on the institutions and instincts developed in response to the Great Depression. And given the challenge of making sense of the unprecedented news flow, there was little resistance to relying on the kind of monetary and fiscal stimulus, financial triage, and extensions of the safety net that post-Depression thinking deemed appropriate for a crisis as serious as that of the 1930s.

Following this initial push, however, the debate and with it the policy response began to shift. Conservative critics had long been concerned by the growth of government and warned against excessive deficits. Now they began pushing back against the budget deficits and government programs associated with fiscal stimulus. Debt sustainability rather than high employment or growth became the priority. At the February 2010 Group of Seven meeting of finance ministers and central bank governors in Iqaluit, remote Northern Canada, the call for austerity was embraced under the Northern Lights. Fiscal consolidation rather than stimulus became the focus, even though economies were still far from fully recovered from the crisis.

In Europe, health care and pensions for retirees were cut in the name of fiscal consolidation. The 2012 presidential campaign in the United States was dominated less by the plight of the unemployed than by the "47 percent" of the population that, in the words of Republican candidate Mitt Romney, was "dependent on the government." Romney may not have triumphed, but his rhetoric and arguments did. Or so it seemed when Congress limited access to food stamps, and North Carolina replaced extensions in unemployment benefits with cuts in relief.

Similarly, the opponents of monetary activism warned that the aggressive expansion of central bank balance sheets portended inflation, and that purchases of mortgage-backed securities by the Federal Reserve and of sovereign bonds by the ECB delayed the necessary consolidation of private and public finances. By keeping interest rates low, they limited the pressure on households and governments to tighten their belts. The critics mounted strident attacks on central bank policies in the pages of the *Wall Street Journal* and elsewhere. The classic example was the open letter to Chairman Bernanke in the *Journal* on November 15, 2010, signed by twenty-three economists, investors, and political strategists, whose money quote read as follows: "We believe the Federal Reserve's large-scale asset purchase plan (so-called 'quantitative easing') should be reconsidered and discontinued. We do not believe such a plan is necessary or advisable under current circumstances. The planned asset purchases risk currency debasement and inflation, and we do not think they will achieve the Fed's objective of promoting employment."[3] The language in Europe may have differed, but the sentiment was the same.

The worry that central banks were prone to debasing the currency was, to be sure, of long standing. In Europe, it was deeply rooted in 1920s experience. The preoccupation was reinforced now by concern that the monetary authorities were interfering with the operation of the market and, by artificially supporting the economy, weakening the pressure to undertake structural reforms.

Increasingly these arguments reshaped policy, even if the dangers to which they pointed were largely illusory. Inflation remained subdued so long as recovery was incomplete, slack was extensive, and interest rates were near zero.

The assumption that structural reform would proceed more quickly if central banks tightened the screws was just that: an assumption.

But, illusory or not, these critiques led central bankers to brood over the negative consequences of their policies. Members of the Federal Open Market Committee were obliged to explain how the Fed would exit from its accommodative policies. Although actual exit remained a matter for the future, talk of exit had a depressing effect. ECB President Mario Draghi was compelled to temper his commitment to "do whatever it takes" to defend the euro with a warning that ECB purchases of government bonds were contingent on pursuit of structural and budgetary reforms.[4] But qualifying the point in this way limited the effectiveness of the commitment to do whatever it took. The pressure on central banks was more intense to the extent that the arguments of the critics received official hearing, whether from Ron Paul and his "Audit the Fed" bill in the US House of Representatives or the German Constitutional Court in its readiness to consider the constitutionality of the ECB's Outright Monetary Transactions. All this helps to explain why central banks hesitated to do more despite the fact that recovery from the recession remained weak.

Thus, after a brief period in 2008–09 when the analogy with the Great Depression was foremost in the minds of policy makers and the priority was to stabilize the economy at all cost, the emphasis shifted. The priority now was to balance budgets. For central banks it was preventing an outbreak of inflation, however chimerical. This shift occurred despite the fact that the recovery continued to disappoint. Rather than avoiding the mistakes of the 1930s, policy makers almost seemed intent on repeating them.

Barack Obama's electoral victory on November 4, 2008, was decisive. His opponent, Arizona Senator John McCain, had not been helped by the crisis. McCain represented continuity with the now-discredited policies of George W. Bush. His understanding of complex financial matters was shaky. At a much-reported White House meeting on September 25, convened at the behest of the McCain camp, Obama demonstrated his grasp of the crisis. The Democratic candidate offered a thoughtful analysis while his Republican opponent sat in stony silence and then offered only vague platitudes about protecting the taxpayer.

What was apparent to participants in the White House meeting was apparent to the public as well. Obama better projected the cool demeanor of a capable crisis manager. He was better able to make sense of the crisis and the case for government action to resolve it. On November 4 he won 365 electoral college votes against McCain's 173. Although Obama's victory in 2008 was not as resounding as Roosevelt's in 1932—FDR received 472 electoral college votes to Hoover's 59—the Democrats again took control of both houses of Congress.[5]

The period between election and inauguration was now briefer than in 1932. Support for shortening the interregnum was indeed strengthened by the economic difficulties created by the four-month-long transition from Hoover to Roosevelt, although the effort to amend the Constitution to this effect was already underway. But even though the inauguration was moved from March to January, the awkward interval still lasted ten weeks. In the meantime, the task was to keep the financial system afloat.

Much of the heavy lifting in this period, like others, was done by the Federal Reserve. On November 25, 2008, in response to evidence of distress in securitization markets, the Fed announced it would purchase up to $100 billion of direct obligations of Fannie Mae, Freddie Mac, and the Federal Home Loan Banks and $500 billion of their mortgage-backed securities with the goal of restarting mortgage and housing markets. Purchases of mortgage-backed securities were not, however, something with which Fed staff had experience. The announcement therefore indicated that the central bank would be hiring private fund managers to execute the trades. This inaugurated the first round of what came to be known as quantitative easing.

In a second unprecedented step, the Fed announced creation of the Term Asset-Backed Securities Loan Facility, or TALF, for lending to hedge funds and other private investors to finance their purchases of securitized consumer loans. Lending to consumers had turned prohibitively risky. Those loans, moreover, were impossible to finance. Banks customarily bundled them together and sold them to hedge funds, which borrowed much of the money needed for their purchase. Now, however, the money market had seized up, and banks refused to lend. Who knew whether the kind of problems that brought down the market in mortgage-related securities also implicated the market in securitized consumer loans?

The consequences were alarming. If consumers were unable to finance their purchases, they would be unable to spend. Less spending would make for more unemployment, more defaults, and more problems for the financial system.

This was the vicious cycle the Fed now sought to break. Bernanke and Co. announced their readiness to provide up to $180 billion in loans to hedge funds and others purchasing securitized consumer loans. But offering to lend would not be enough if investors, worried by consumer defaults, hesitated to borrow. The Fed therefore promised to forgive its loans were consumers to default in large numbers. Treasury for its part put up $20 billion of TARP money to partially indemnify the central bank against losses.[6]

This was a clever way of leveraging Treasury's scarce capital. It testified to Paulson's mastery of financial engineering in his Goldman Sachs years. The plan's corresponding shortcoming, as with other financial-engineering schemes, was its complexity. There was the question of which securities would qualify, and how to ensure that the hedge funds would have skin in the game. A solution to the latter problem was found by requiring the hedge funds and others borrowing from the Fed's new facility to put up additional collateral against their loan. The other difficulties were eventually worked out by the government's attorneys. But "eventually" turned out to mean after four months, which was how long it took to get the consumer-lending program up and running.

Nothing better illustrates why the Fed's credit market interventions were so controversial. Lending directly to hedge funds reflected a delayed recognition, following Lehman's failure, of the importance of the shadow banking system. Better late than never. But guaranteeing those loans fanned fears of moral hazard and complaints that the Fed was extending yet another stealth bailout, this time to hedge funds and the banks with which they did business. And $20 billion of Treasury money did not guarantee that the Fed would escape all losses; it certainly did not let the taxpayer off the hook. Complex maneuvers of the kind the Fed employed to help Treasury lever up its TARP funds were leagues away from conventional monetary policy. Extraordinary times demand extraordinary measures, but extraordinary measures invite criticism if they defy easy explanation.

The motivation for these unconventional policies was, of course, distress in financial markets. And the reality was that the Fed was the only institution with an infinitely expandable balance sheet and the ability to respond quickly.

An additional motivation was that conventional monetary policy was reaching its limits, forcing the Fed to take unconventional steps. The FOMC had already brought its target for the federal funds rate down to 1.5 percent on October 8, 2008, and then to 1 percent on October 29. It flooded financial markets with liquidity. On December 16 the FOMC reduced its target for the Fed funds rate to between zero and 0.25 percent. The policy rate was as low as it could go. The Fed essentially committed to providing however much credit financial markets required, at zero cost.

Doing so was unprecedented in the history of the Federal Reserve System. Only once before, in the wake of September 11, 2001, had the FOMC pushed the Fed funds rate as low as 1 percent. Never had it been pushed lower. Even in the depths of the Great Depression, the discount rate, the 1930s equivalent of the Fed funds target, never fell below 1½ per cent, a level reached only in the New York district in 1931.[7] Even then, other Reserve banks, concerned to husband their gold reserves, had hesitated to go along. The current policy of providing unlimited access to Federal Reserve credit at essentially zero cost was very different. It was an indication that officials, their views informed by 1930s experience, were prepared to employ all the monetary power at their disposal to stabilize the financial system and prevent the economy from succumbing to deflation.

Bernanke was concerned that the decision should not be perceived as his policy, or the New York Fed's policy, as was the case in the 1930s, but rather as the system's policy. This would prevent the Fed's confidence-inspiring capacity from being diminished by internal divisions of the sort that raised questions about the commitment of the Federal Reserve in the Depression. In the run-up to the December 16 FOMC decision the chairman therefore worked to form a consensus in favor of the step. Agreement to cut to zero was successfully achieved.

Reaching this consensus allowed Federal Reserve officials to speak with one voice and impress the markets with their resolve to prevent the worst. Doing so was important in order to address the immediate threat of financial collapse. But deciding policy by consensus also prevented the Fed from responding even more aggressively to the continued threat of deflation and, soon, the disappointing pace of recovery. Several Reserve bank presidents had reservations about larger securities purchases, open-ended commitments, and numerical targets for policy, all of which might have helped to support a faster recovery. These reservations were grounded in worries that the Fed would be unable to "take back" the stimulus it had applied with sufficient speed, causing inflation and financial excesses to build up. As in the summer of 2008, a less consensus-oriented chairman might have dismissed their objections out of hand. But not Chairman Bernanke.

These initiatives—providing unlimited amounts of credit to the banks, financing purchases of commercial paper through the TALF, and purchasing mortgage-backed securities from Freddie Mac and Fannie Mae—all reflected the belief in official circles that the problem was one of liquidity. Trust had dried up. Doubts prompted collateral calls, forcing borrowers to engage in distress sales of assets, in turn requiring more collateral calls. From this diagnosis flowed a prescription: if the authorities stepped in with securities purchases, injecting liquidity into the markets, conditions would normalize.

That the problem was one of liquidity was Paulson's diagnosis in particular. Asset purchases, recall, were the focus of the TARP as proposed to Congress by the Paulson Treasury at the end of September.[8] The notion that the problem was fundamentally one of liquidity resonated with a Treasury secretary exposed to the inner workings of financial markets by his experience at Goldman Sachs. This diagnosis and the policies to which it pointed were politically expedient in that they enabled Treasury to deny that it was providing bailouts to individual financial institutions, plausible deniability being essential in the wake of the AIG rescue if the TARP was to have a snowball's chance of congressional approval. And it could even be argued that, insofar as the Fed and Treasury made their purchases at fire-sale prices, they might end up turning a profit.

There were just two problems. First, it would take weeks or even months to put in place the apparatus for security purchases. The securities in question were complex and varied, which was of course part of what had gotten investors in those same assets into trouble in the first place. Purchasing them would require Treasury to contract with private fund managers knowledgeable of the market, including some of the same financial institutions involved in originating those securities. Compensation schemes and mechanisms for monitoring fund manager performance would have to be arranged. All this would take time. And time was the one thing even scarcer than liquidity.

Second, there was the reluctant realization—reluctant on Paulson's part—that the issue was more than just one of liquidity. Banks that made big bets on real-estate-related investments had taken big losses. They now had inadequate capital as a buffer against losses, rendering them unable to borrow and reluctant to lend. Providing them with additional liquidity by purchasing their securities at something resembling current market prices would do little to solve this problem. As a student of the Great Depression, Bernanke could recall how FDR had used the bank holiday to reassure the public that any bank allowed to reopen would be adequately capitalized. Already in September, prior to final passage of the TARP, the Fed chairman was suggesting to Paulson that capital injections might be required to restore confidence and restart bank lending.[9]

It took ten days following passage of the TARP for Paulson & Co. to acknowledge these facts and agree to use $250 billion of TARP money to recapitalize the banks. On Monday, October 13, Columbus Day, Paulson, Bernanke, New York Fed President Geithner, and Sheila Bair, chair of the FDIC, convened their now-legendary meeting with the CEOs of nine big banks. The officials made clear the importance of those banks present all accepting public capital. If any refused, banks receiving assistance would be singled out as weak links, creating the same problem that had bedeviled the RFC from mid-1932. There was more than a little reluctance on the part of the CEOs and no little chest beating, or so journalistic accounts suggest.[10] Geithner and Paulson made clear that CEOs who resisted were unlikely to have their phone calls returned.

The terms were not onerous. The banks would be required to pay a dividend of 5 percent, significantly less than if they sought to raise capital on the market—assuming of course that they were able to access the market at all. Goldman Sachs, the bank in the strongest position, had just succeeded in raising $5 billion of capital privately, from Warren Buffett's Berkshire Hathaway, but paid handsomely for the privilege. It promised Buffett a 10 percent dividend on his shares, fully twice what was now demanded by the government.[11] Moreover, the government's new capital didn't come with voting rights. Treasury would acquire only nonvoting senior preferred stock, limiting its ability to intervene in future bank operations.[12]

These provisions were precisely what made this use of TARP funds controversial. Cheap capital smelled of subsidies. Preferred shares without voting rights made the taxpayer a silent partner while the banks called the tune. The government would have no way of compelling banks taking public money to use it for lending to corporations and households desperate for funds.

Finally, this shift in use of TARP funding did not enhance Treasury's reputation for policy consistency. It encouraged the view that Paulson was still groping for a response. As David Swensen, manager of Yale University's endowment, put it, policy makers acted "with an extraordinary degree of inconsistency. You almost have to be trying to do things in an incoherent and inconsistent way to have ended up with the huge range of ways that they have come up with to address these problems."[13]

Such suspicions were not entirely wide of the mark. Unlike Robert Rubin, the Clinton-era treasury secretary similarly confronted with crises on his watch, Paulson did not have an overarching worldview to guide his decision making. In his memoirs, Rubin describes his particular view of market dynamics and how this led him to adopt what created at least the appearance of a systematic approach to decision making. Rubin kept a sense of personal detachment, whereas Paulson reacted emotionally to events, swinging from one solution to another. The title of his memoirs, *On the Brink*, almost seems to be referring to his mental state.

As it happened, it would take just days for events to bring the two men together. The occasion would have implications not just for Paulson's reputation but also for Rubin's.

Paulson continued to assert that diverting $250 billion of TARP funds to recapitalization was a one-off event and that the balance would still be used for asset purchases. He had promised as much when seeking congressional approval for the TARP, making it problematic to change tack now.[14]

In the event, it took less than a month for the secretary to drop the idea of purchasing toxic assets in its entirety. Market conditions were continuing to worsen, leaving no time for an elaborate purchasing operation. Capital injections promised a bigger bang for the buck.

Not only was there no time for complex financial engineering, but at this point the problem had migrated from the security markets to the banks, the beating heart of the financial system. The banks' capital shortfall was real. Still, the press struggled to make sense of yet another policy shift. Coverage of Paulson's November 12 press conference announcing the new strategy was unsympathetic. That Treasury was changing course yet again disconcerted the markets, which dropped by 5 percent.

The implication of the authorities now concentrating on recapitalizing the banks was that regulators knew something that others, as yet, did not. Investors quickly concluded that Citigroup, the largest US bank still standing, was the weak link. Their worries were rooted in awareness that Citi embodied all the worst features of twenty-first-century banking. With a limited deposit base, it relied on wholesale funding. Having pioneered multinational banking as far back as the 1920s, much of the wholesale funding came from skittish foreign investors. It held extensive positions in consumer loans, questionably underwritten commercial real estate, and collateralized debt obligations tied to subprime mortgages. It had not turned a profit since the second quarter of 2007, although management continued to pay dividends in an effort to convince investors that the reality was otherwise.

Inchoate fears gave way to panic on November 19, when Citi announced it was forced to wind up a structured investment vehicle heavily invested in subprime-related CDOs. Its stock fell by 23 percent, culminating several months of sharp declines.

But even in this wounded state, Citigroup still had more than $3 trillion of assets, counting those hidden away in its SPVs. If any US bank was too big to fail—if any bank had consciously set out to become too big to fail—this was it. Rubin, now in his capacity as chairman of the executive committee of Citigroup's board, reminded Paulson of these facts in a series of characteristically "low key" telephone calls.[15]

The legal niceties that Bernanke, Geithner, and Paulson had cited in connection with the decision to allow Lehman Brothers to go down were set aside in these dire circumstances. Sheila Bair was the one notable dissenter from the decision to go ahead with a bailout. Concerned to husband her agency's $35 billion insurance fund, Bair proposed putting Citibank, Citigroup's insured national bank subsidiary, into receivership. Bernanke, Geithner, and Paulson all argued that Citibank was not easily disentangled from the larger financial group of which it was part. Not only was Citigroup larger than Lehman, but it was more international. The kind of problems that arose when Lehman failed and its British regulator froze its accounts would be immensely more disruptive. For all these reasons, Treasury and Fed officials insisted there was no alternative to the rescue cobbled together over the weekend of November 22–23.

In the plan as ultimately structured, the government injected $20 billion of share capital, again taking preferred shares in return. Bernanke suggested common stock, but Paulson demurred. Had it received common stock, the government would have ended up "owning a large part of the bank," as Paulson subsequently put it, prompting unwelcome headlines about nationalization.[16] The government did, in fact, end up owning almost half the bank, given how Citigroup's market cap fell to little more than $20 billion following announcement of the bailout. The only difference, again, was that its shares did not come with voting rights.

Officials agreed, in addition, to split the losses on $300 billion of Citigroup's toxic assets. Citi would take the first $29 billion of losses, after which the government would absorb 90 percent, with the TARP, the FDIC, and the Fed taking them in turn. This was another way of leveraging Treasury's limited funds.[17] Providing insurance against losses on mortgage-related investments, moreover, was a less transparent way of providing assistance than injecting more capital or purchasing those assets outright. It was a way to deflect accusations that the authorities were providing another mega-bailout.[18]

The bailout left a sour taste for those who recalled this bank having been a prime mover in the elimination of Glass-Steagall. Citi was now advised by Rubin, who was also once Paulson's colleague at Goldman Sachs. Regulatory oversight of the bank was headed up by the New York Fed, whose president, Timothy Geithner, was Rubin's protégé during the latter's years in the Clinton Treasury and had just been announced by President-Elect Obama as treasury secretary-designate. The conspiracy theories to which this gave rise were over the top, but the optics did not make rescuing the bank, or subsequently its competitors, any easier.[19]

The reality that congressional opposition to bailouts without strict conditions, including replacement of top management and retention of voting rights on behalf of taxpayers, had been circumvented with the help of these financial-engineering devices fed skepticism about even more forceful steps to recapitalize the banking system. Still, the mold was cast. It was used again in January when the government bailed out Bank of America.

President Bush had hoped to leave this task to the new administration. Congress had not yet agreed to release the second half of the TARP funds, and Bush was reluctant to ask for fear that his last significant act might have to be to veto a congressional bill prohibiting its disbursal. In addition to the embarrassment, this visible sign of disapproval by Congress would not reassure financial markets. But indications that Bank of America would shortly be announcing a $2 billion loss for itself and a $22 billion loss for its newly acquired investment banking division Merrill Lynch threatened to spark another panic. Bush proved more willing to act than Hoover in his last days in office. On January 12, 2009, he requested the second tranche of TARP funds, and Congress reluctantly agreed. Three days later a deal was struck to use the TARP to inject $20 billion of new capital into Bank of America. The government and the bank agreed to split the losses on its $118 billion of mortgage-related assets ninety-ten, following the Citigroup formula, after the first $10 billion of losses, which would go to the bank.

And with this official support in place, Bank of America was able to announce its quarterly results the next morning.

CHAPTER 20 | Stressed and Stimulated

THROUGH ALL THIS, the president-elect and his team were watching uneasily. Lawrence Summers, chair-designate of Obama's National Economic Council, and Christina Romer, selected to chair the Council of Economic Advisors, resisted the idea of more stealth bailouts on fairness and moral-hazard grounds.[1] They preferred to find a way of seizing, recapitalizing, and reopening so-called too-big-to-fail institutions—nationalizing and quickly reprivatizing them while breaking them up along the way. Other academics farther from the seat of power argued the case for nationalization even more strongly.[2] For the academics, the approach taken by Sweden to repair its banking system in the 1990s had considerable appeal: the authorities would seize the troubled financial institutions and transfer their toxic assets to a government-run "bad bank," which would sell them off over time. The restructured banks could then be recapitalized and reopened, the shareholders having been wiped out and management unseated along the way.

But Obama's political advisors, from Chief of Staff Rahm Emanuel on down, feared sticker shock were the administration to go back to Congress for more funds to recapitalize the banks. Bank nationalization, even temporary nationalization, was anathema to large segments of the American public, not to mention to the banking lobby. Its academic advocates, unlike Treasury Secretary-Designate Timothy Geithner, had not been involved in the most recent round of bank rescues, allowing them to develop an idealized notion of how seamlessly nationalization and reprivatization would work. White House advisors toyed with the idea of testing out the Swedish approach on a single bank, where still-troubled Citibank was the obvious candidate, but the logistics were daunting.

Geithner, for his part, opposed any intervention that might disrupt business as usual and damage the prospects for recovery. He feared that nationalizing one bank might create expectations that others would follow, causing investors to sell their shares in a self-fulfilling prophecy. He was skeptical that there was such a thing as temporary nationalization. The step would demoralize the markets, rendering the nationalized institutions impossible to sell. About this aspect, at least, he was right, as countries like the UK, which went the nationalization route, would discover in the course of time.

But avoiding nationalization required coming up with an alternative, something that was easier said than done in the early days of a new administration, as Raymond Moley and William Woodin could have explained. Where Paulson's Treasury was chaotic, Geithner's was understaffed. Vetting senior appointees was laborious, and congressional confirmation was far from ensured. Although Treasury under Paulson had a thin bench of economists and finance specialists, the situation under Geithner was worse.

The result was reminiscent of how the Roosevelt administration, lacking ideas, adopted the bank rehabilitation plans of its predecessor. Similarly, Geithner's plan was—wait for it—to use TARP funds, suitably leveraged, to buy toxic loans and assets from the banks. It was essentially an expansion of the TALF, which targeted consumer loans, to mortgage-backed securities, property loans, and CDOs. This was the essence of the Public-Private Investment Program for Legacy Assets, or PPIP, announced on March 23, 2009, for which $22 billion of TARP funds was earmarked.

There were other elements of continuity as well. Buying securities would require partnering with private fund managers, as in Paulson's security purchase scheme.[3] There would have to be a way of ensuring that fund managers had skin in the game, like the hedge funds that were the government's partners in the TALF. In other words, if they bought securities for the government, they would also have to buy securities for themselves, at the same prices, as a way of ensuring they did not overpay. In addition to putting up TARP funds to buy securities directly, the Treasury, the FDIC, and the Federal Reserve would guarantee each pool of securities purchased up to 85 percent of the amount bid by investors, much as they had guaranteed 90 percent of the legacy assets of Citigroup and Bank of America.[4]

PPIP excited much negative commentary for the same reasons that these earlier interventions did so. It was difficult to understand. It relied on mortgage securitization and leverage, the very forms of financial engineering that had given rise to the crisis. It involved another open-ended guarantee, exposing taxpayers to losses. It looked to be overpaying for toxic assets again, since the banks would be reluctant to sell at a loss.

But the most serious problem was the same one that derailed Paulson's original scheme for security purchases, namely the time needed to scale it up. The Fed had taken four full months to get the TALF up and running, and Treasury lacked its experienced staff. PPIP was finally launched in September 2009. Rather than removing $1 trillion of bad loans and assets from the banks' balance sheets, the program ended up eliminating just $40 billion, a veritable drop in the financial bucket.

With nationalization off the table and PPIP on hold, Treasury's backup plan of stress-testing the banks was the only option left standing. Secretary Geithner unveiled the idea at a poorly received press conference on February 10, where attention focused on the asset-purchase program. Now the stress tests became the centerpiece of the strategy. Specialists at the Fed and the FDIC, working with Treasury, would construct scenarios for the performance of the banks' mortgage loans, credit card loans, auto loans, and other assets. Nineteen big banks, together with their supervisors, would then estimate their losses under what was referred to as the adverse scenario, "adverse" being one rung up from "worst-case." If a bank's reserves were too small to plug the hole, it would have to raise more capital. If it had trouble raising capital from investors, it would have to take it from the government. With only needy institutions tapping public funds, the burden on taxpayers would be limited. And with every bank adequately capitalized, investors would be reassured. The banks, possessing the resources and cushion against losses to resume lending, could do their part to encourage recovery.

The exercise was greeted with skepticism on the part of investors, the informed public, and even the White House. Supervisors lacked the expertise to value complex securities, forcing them to defer to the banks and their in-house models. If their scenarios were too optimistic and the amount of new capital was small, the markets might dismiss the process as a charade. But if their scenarios were dire and the amount of capital was large, the banks might be unable to raise it, forcing them into the hands of the government in the nationalization scenario investors and officials both feared. Either way, confidence would be damaged rather than restored.

The stress testers thus had a Goldilocks problem: the porridge had to be neither too cold nor too hot. Not being required to value the banks' assets at current market prices, they could instead tweak their model-based estimates of those prices to produce the desired result. Or they could adjust their assumptions about the banks' future earnings growth.

Not surprisingly, the total ultimately selected—for selected it was—was $75 billion, roughly halfway between the low and high estimates of $35 billion and $125 billion.[5] It was not so low as to be dismissed as a gift, nor so high as to make it impossible to raise. It was less than the $125 billion the government had compelled the nine big banks to take a few months earlier. Just in case, it was also less than the Treasury's remaining TARP funds.

Bank stocks jumped when the results were released.[6] With hindsight, it is clear that this marked the beginning of the end of the crisis. But, even now, just why is unclear. Geithner's hunch, like Paulson's before him, was that the banks were not, in fact, insolvent and that, with time and the support of investors, they could earn their way back to health. Not a few other supposed experts had asserted that the banks were insolvent and could be stabilized only by a massive infusion of public funds. In the event, the experts were wrong, while Geithner was right. The banks may not have leapt back into lending with both feet—in fact they dipped their toes in only cautiously—but they were able to steady themselves, raise additional capital, and get back to business.

Doing so required a modicum of investor confidence. Here it helped that the stress tests, unlike the earlier rescues of Bear Stearns, Citigroup, and Bank of America, were not thrown together over a weekend. They were just credible enough to inspire confidence. Appearance, in this case, made for reality. Such is the nature of banking, where confidence is in the eye of the beholder.

In 1933, when declaring the bank holiday, the Roosevelt administration similarly put up a good front. It solemnly declared that only solvent banks would be allowed to reopen. In reality, it was hardly possible in the subsequent two weeks to conduct careful inspections of each and every financial institution, urban legend notwithstanding. Yet the government permitted the vast majority of banks to reopen, providing only verbal reassurance that they were adequately capitalized.

The stress tests were now conducted with comparable solemnity and produced comparable results. Given their effects, it becomes necessary to view the 1933 bank holiday and its aftermath in a somewhat different light and to acknowledge that, like the stress tests, they involved more than a little showmanship.

A less happy interpretation is that the Good Housekeeping Seal of Approval conferred by the tests was tantamount to a colossal government guarantee. The nineteen biggest banks received special attention. Treasury asserted that they were solvent. Nine of them, starting with Goldman Sachs and JPMorgan Chase, required no additional capital. Citigroup, Bank of America, and eight of their less pristine competitors would be adequately capitalized if they raised only an additional $75 billion of capital, or so the government averred. If they then got into trouble, it stood to reason that this would be due to events not of their own making, and that the authorities, having attested to their soundness, would bail them out.

In this respect as well, the response resembled 1933, when the Emergency Banking Act empowered the Federal Reserve to discount notes, drafts, bills, and acceptances as the central bank saw fit, allowing it to provide the banks the liquidity they needed to meet the needs of their depositors. And as in 1933, the policy response stabilized the banking system, but by opening the door to moral hazard on a massive scale.

Or perhaps, as in 1933, it was not so much the measures addressed at the banking system as other policies that were responsible for the happy outcome.

The most contentious responses were the Obama administration's $787 billion fiscal stimulus and three rounds of quantitative easing by the Federal Reserve. The stimulus excited no end of controversy then and continues to do so today. The case was straightforward for those whose views were informed by the experience of the 1930s. The Hoover and Roosevelt administrations had done too little to offset the decline in private spending. Although the New Deal featured prominent public investment projects, from the Grand Coulee Dam to the Triborough Bridge, the increase in spending was too small to make a significant dent in a double-digit unemployment rate. All this was doubly unfortunate in an environment of near-zero interest rates, when there was little danger that an increase in public investment would crowd out a commensurate amount of private spending. The research of Obama's Council of Economic Advisors chair, Christina Romer, pointed to the conclusion that fiscal policy made only a limited contribution to recovery because the fiscal initiatives of the period were small by the scale of the problem.[7]

This was the mistake whose repetition the Obama stimulus was designed to avoid. Moving an eleven-hundred-page bill from first draft to final passage in a bit more than three weeks was a considerable achievement. It was fast action even by the standards of FDR's Hundred Days, which Obama like every subsequent president-elect had studied (and Obama was more studious than most). The act was hailed by House Appropriations Committee Chairman David Obey as "the largest change in domestic policy since the 1930s." The *Washington Post*, de facto arbiter of such inside-the-Beltway matters, concluded that the stimulus bill represented "the start of a new ideological era that places the federal government at the center of the nation's economic recovery."[8]

Given these elevated expectations, it was all but inevitable that disappointment would follow. During the interregnum, Romer, along with Jared Bernstein, soon to be appointed Vice President Biden's economic advisor, used a simple model to calculate how much stimulus was needed to offset the decline in private spending. This involved, first, estimating the decline in spending and hence the gap to be filled. Romer and Bernstein then divided the result by a textbook estimate of the fiscal multiplier.[9] What could be easier?

Several things, it turned out. To start, output was already falling faster than anyone realized, rendering it inevitable that unemployment would rise higher and making the Romer-Bernstein team look too optimistic. Given the exceptional nature of the crisis—how firms, unable to get credit, were cutting back on production and drawing down their inventories at an unprecedented rate—it is not surprising that government surveys did not fully capture how quickly output was falling. Still, the fact that unemployment failed to stabilize at 8 percent as advertised enabled the critics to question the effectiveness of the policy. Their questions provided ammunition for the advocates of an early turn to austerity.

Moreover, the amount of stimulus finally agreed was less than suggested by Romer and Bernstein's own calculations. Their modeling indicated that filling the output gap would require a stimulus of $1.2–1.8 trillion, depending on the magnitude of the contraction in the pipeline and the policies of the Federal Reserve. But numbers above $1 trillion were enough to give heartburn to even congressional Democrats. The Republicans had already labeled their opposition the party of tax-and-spend. They denigrated the legislation by appealing to the American public's instinctive hostility to big government. "This bill is supposed to be about jobs, jobs, jobs, and it's turned into nothing more than spend, spend, spend," as House minority leader John Boehner put it.

An election might have just happened, but this also meant that midterms were a mere two years away. Keeping the Democrats in Congress on board thus required not making the increase in the deficit too large. $1 trillion was the trip wire; the political operatives were unanimous that the stimulus had to come in below this. Arguments were therefore offered for why $800 billion was enough. A larger stimulus would panic the markets. The rise in unemployment was baked in; nothing could be done to prevent it. It is not clear whether anyone believed these rationalizations. This was economic logic enlisted on behalf of political ends.

A few White House strategists imagined that Congress might solve their problem. Once the House and Senate added their bells and whistles, the final bill would be larger than requested by the administration. But this didn't figure with the rise of the Tea Party, the loose populist coalition advocating reducing the size of government by any and all means, or with a refusal to cooperate on the part of House Republicans. It didn't figure with political rancor set in motion by the crisis and the bailouts taken in response.

An administration and a president convinced of the merits of a larger stimulus could have campaigned for it. Obama could have invested the political capital he possessed as a result of his recent electoral victory. He could have appealed to GOP senators from swing states like Maine and Pennsylvania. Going over the heads of Congress, he could have appealed to the public. But Obama's instinct was to weigh the options, not to campaign for his program. It was to compromise, not confront. The economic advisors who might have helped him make the case did not speak with one voice. And the political advisors agreed that an aggressive campaign for a larger stimulus was not the best use of the president's political capital.

Finally, there was the conflict between shovel-ready projects promising an immediate economic impact and the longer-term agenda to renew the country's infrastructure, enhance its energy efficiency, and invest in its people. Focusing on forms of stimulus spending that could be rolled out quickly was critical for containing the crisis. Without an immediate boost to spending, there would be nothing to break the vicious circle of private-sector deleveraging and financial-sector distress. Front-loading the stimulus was also a way of signaling that it was an exceptional measure to which the administration had been driven by exceptional circumstances and that it would be rolled back once the crisis passed. Reflecting these arguments, more than half of total stimulus spending was concentrated in 2009–10.

But insofar as this was the emphasis, it meant that the country's structural problems went unaddressed. Geithner describes how during the transition Obama hoped for an inspiring project like a smart electric grid, but his advisors talked him out of it.[10] The Obama administration would have no Grand Coulee Dam to point to in seeking continued support for its approach. Nine billion dollars for high-speed rail was a limp substitute. That the stimulus left no physical legacy allowed the skeptics to denigrate the effects and advocate quick abandonment.

Rather than a short recession followed by a vigorous recovery, the United States experienced an extended period of high unemployment. That recovery was slow meant the economy would have benefited from infrastructure investment that took years to roll out. The need for additional government spending was an opportunity to develop a coherent plan for spending on not just infrastructure but basic research and education, in order to better position the country to meet the challenges of the twenty-first century.

But this is different from saying it would have made sense to shift more of the $787 billion of stimulus away from transfers to state and local governments in 2009–10 and toward spending on long-term infrastructure projects in subsequent years. Fewer transfers to the states in 2009 would have meant more unemployment and financial distress, a high price to pay for infrastructure renewal. The circle could have been squared by adding appropriations for infrastructure spending without also cutting back on transfers to the states. But an even larger stimulus that would have permitted the government to pursue not-yet-shovel-ready projects without forcing it to cut back short-term spending was not in the political cards. And the throes of a crisis, when policy makers were struggling to prevent the financial system from seizing up, was an awkward time to ponder a national development plan.

Evaluations of the stimulus continue to differ. But it is not enough for detractors to point to the fact that unemployment peaked out at 10.1 percent, two full percentage points higher than initially promised. Nor is it enough to observe, à la Mervyn King, that another Great Depression was avoided. The question must be posed as a problem in counterfactual history. How much higher would unemployment have been without the stimulus? Would there have been a Great Depression–like slump in its absence?

Any serious effort to answer these questions requires a model of the economy that can be put through its paces with the stimulus and without. Different models predictably yield different results. Keynesian models with a large fiscal multiplier point to large positive effects. In contrast, classical full-employment models in which interest rates rise with public spending, causing a commensurate amount of private spending to be crowded out, suggest no positive output effects. In the world of evidence-free modeling, anything goes.

But the world of modeling, and more generally the world itself, is not evidence free. Models have implications that can be set against evidence as external tests of validity. The classical model predicts, to pick an example not entirely at random, that the stimulus should have driven up interest rates, whereas the Keynesian model does not. The fact that interest rates remained low thus favors one class of models over the other.

Although government agencies like the Congressional Budget Office typically employ several models for purposes of policy analysis, the models they use are limited to those whose implications are not wildly inconsistent with the facts. Employing a number of data-consistent models, CBO estimated that real GDP was 1.7–4.5 percent higher in the second quarter of 2010 with the stimulus than without, after which the effect diminished.[11] The actual fall in GDP between 2007 and 2009 was 3.4 percent. The midpoint of the CBO's high and low estimates thus suggests that the output loss would have been about twice as large in the absence of the stimulus. The number of full-time-equivalent jobs was 2.0–4.8 million higher, according to its estimates, than in the absence of the stimulus.[12]

The experience of other countries, where policies and economic outcomes differ, is another basis on which to evaluate US experience. If the recession was deeper and longer in countries where circumstances were otherwise similar but stimulus spending was less, then the magnitude of the difference can be used to identify the relevant counterfactual. International organizations like the IMF engage in this kind of counterfactual thinking. The work of the Fund's chief economist, Olivier Blanchard, points to fiscal multipliers above 1 (1.3 is the middle of his estimated range). This suggests that, other things equal, $400 billion of stimulus spending in calendar year 2010 raised GDP by $520 billion, or roughly 4 percent in a $13 trillion economy.[13] The conclusion is consistent with the range suggested by the CBO's modeling.

A related strategy is to compare the change in output and employment across US states and counties receiving differing amounts of federal funding. James Feyrer and Bruce Sacerdote of Dartmouth College adopted this approach, finding substantial effects of aid to low-income individuals and infrastructure spending and sizable impacts of the stimulus overall. The effect is smaller than estimated by the CBO and the IMF but still considerable. A team of Berkeley, Stanford, and MIT economists adopting a similar approach made use of the fact that Medicaid matching funds provided by the stimulus varied widely across states. (On a per capita basis, Washington, D.C., received almost five times the per capita transfers of Utah.) They concluded that $100,000 of additional matching funds increased employment by 3.5 job-years and that an additional $100,000 of federal outlays raised final spending by as much as $200,000.[14] This suggests an even larger impact than other approaches.

Finally, historical experience provides a basis for imagining the counterfactual. Eighty years of scholarship may not have produced universal agreement on the effects of New Deal policies, but it has yielded a broad consensus on what worked and what didn't, on which policies were more and less important, and what should have been tried but wasn't. It suggests that fiscal policy worked where it was tried and didn't where it wasn't. It points to the effectiveness of policies that put money in consumers' pockets, like the 1936 Veterans' Bonus, but also to the case for taking advantage of singularly low borrowing rates to finance infrastructure projects. It suggests that public spending, whether for rearmament or other purposes, had especially large effects in an environment of near-zero interest rates. All this implies that the Obama stimulus helped, but that it would have helped more had policy makers aimed higher.