# Introduction

The financial crisis that started in August 2007 and then took a sharp turn for the worse in September 2008 has proven to require more than the *Subprime Solution* advocated by the Yale professor Robert Shiller, and to involve significantly greater loss than the *Trillion Dollar Meltdown* foreseen by Charles Morris. It is instead proving to be what Mark Zandi has called an "inflection point in economic history." That means that we need a historical perspective in order to understand our current predicament and to see beyond it to a possible future.[1]

The intellectual challenge of producing such an account is large, given the scope of the crisis that is transforming not only banking and financial institutions and markets but also the regulatory and supervisory apparatus within which those institutions operate, including most dramatically the role of the Federal Reserve. On this last point alone, textbooks still teach that the main task of the Fed is to control the short-term rate of interest in order to achieve a long-run inflation target. Ever since the crisis began, however, the Fed has instead been fighting a war, using every weapon at hand, including a number of new ones never used before.

"Lender of last resort" is the classic prescription for financial crisis. "Lend freely but at a high rate" is the mantra of all central bankers, ever since the publication of Walter Bagehot's magisterial *Lombard Street: A Description of the Money Market* (1873). That is what the Fed did during the first stages of the crisis, as it sold

o its holdings of Treasury securities and lent out the proceeds through various extensions of its discount facility.

But then, after the collapse of Lehman Brothers and AIG, and the consequent freeze-up of money markets both domestically and internationally, the Fed did even more, shifting much of the wholesale money market onto its own balance sheet, more than doubling its size in a matter of weeks. In retrospect this move can be seen as the beginning of a new role for the Fed that I call "dealer of last resort."

And then, once it became apparent that the emergency measures had stopped the free fall, the Fed moved to replace its temporary loans to various elements of the nancial sector with permanent holdings of mortgage-backed securities, essentially loans to households. is is something completely new, not Bagehot at all—an extension of "dealer of last resort" to the private capital market.

e transformation of the Fed's role during this crisis is evident in a simple chart showing the evolution of the Fed's balance sheet, both assets and liabilities, in 2007–2009 (see gure 1). e stages of the crisis stand out clearly, marked by key turning points: the collapse of Bear Stearns in March 2008, and of Lehman Brothers and AIG in September 2008. e chapters that follow are an attempt to provide the historical and analytical context necessary for understanding what this chart means for us, today and going forward.

## A Money View Perspective

It is no accident that the Fed has been at the center of policy response. Indeed, a fundamental premise of this book is that a "money view" provides the intellectual lens necessary to see clearly

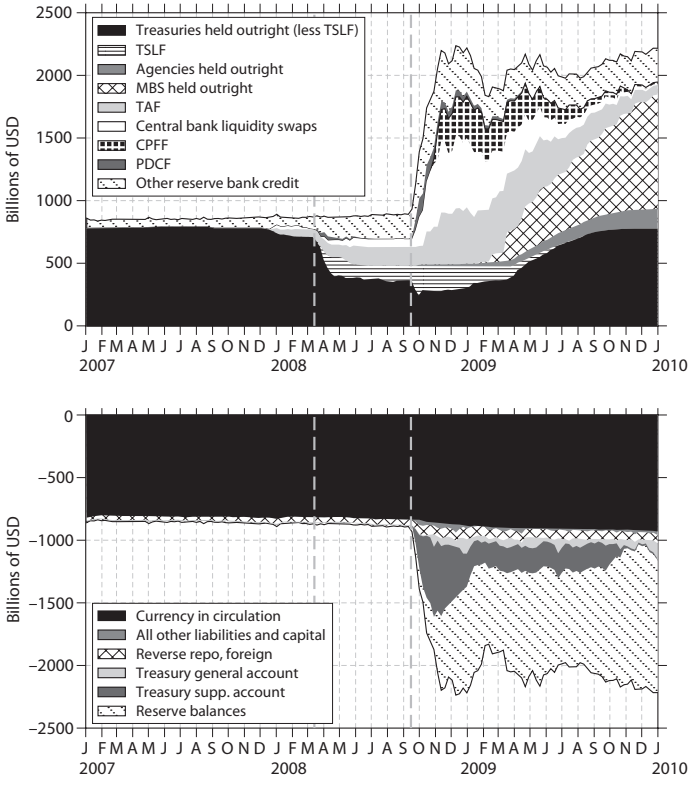


Figure 1: Fed assets (top panel) and liabilities (bottom), 2007–2009. Source: Federal Reserve Board H.4.1 "Factors A ecting Reserve Balances." Online at www.federalreserve.gov/releases/h41

the central features of this multidimensional crisis. e reason is simple. It is in the daily operation of the money market that the coherence of the credit system, that vast web of promises to pay, is tested and resolved as cash ows meet cash commitments. e web of interlocking debt commitments, each one a more or less rash promise about an uncertain future, is like a bridge that we collectively spin out into the unknown future toward shores not

yet visible. As a banker's bank, the Fed watches over the construction of that bridge at the point where it is most vulnerable, right at the leading edge between present and future. Here failure to make a promised payment can undermine any number of other promised payments, causing the entire web to unravel.

e Fed does not just watch; it also intervenes. As a banker's bank, the central bank has a balance sheet that gives it the means to manage the current balance between cash ows and cash commitments. "Lender of last resort" is one example, in which the central bank temporarily o ers up its own cash to meet commitments that would not otherwise be ful lled. "Bank rate policy" extends this kind of intervention from crisis to normal times, in an attempt to ward o crisis before it happens. By intervening in the money market, the Fed seeks to o er a bit more elasticity or to impose a bit more discipline, easing or tightening as conditions warrant.

A century ago, at the time of the founding of the Fed in 1913, this "money view" way of thinking was quite common, but today economic discussion is instead dominated by two rather di erent views. On the one hand, we have the view of *economics*, which resolutely looks through the veil of money to see how the prospects for the present generation depend on investments in real capital goods that were made by generations *past*. On the other hand, we have the view of *finance*, which focuses on the present valuations of capital assets, seeing them as dependent entirely on imagined *future* cash ows projected back into the present.

e economics view and the nance view meet in the present, where cash ows emerging from past real investments meet cash commitments entered into in anticipation of an imagined future. is *present* is the natural sphere of the *money* view. But both economics and nance abstract from money; for both of them, money is just the plumbing behind the walls, taken for granted. Both largely ignore the sophisticated mechanism that operates to

channel cash ows wherever they are emerging to meet cash commitments wherever they are most pressing. As a consequence, neither the economics view nor the nance view has been particularly well suited for understanding the crisis we have just been through, a crisis during which the crucial monetary plumbing broke down, almost bringing the rest of the system down with it.

e economics and nance views have taken turns dominating postwar economic discussion. First, in the immediate post–World War II decades, the economics view held sway—understandably so in the aftermath of depression and world war. Private and public sector alike built their present on the foundations of the past, the only solid ground that remained after the dust of war had cleared. en, in more recent decades, the nance view has held sway—excessively so, as the present crisis now con rms. Private and public sector alike dreamed fantastical dreams about the future, and nancial markets provided the resources that gave those dreams a chance to become reality.

As a consequence of this long dominance of the economics and then nance views, modern policymakers have lost sight of the Fed's historical mission to manage the balance between discipline and elasticity in the interbank payments system. In Bagehot's day, the Bank of England understood "bank rate" as the cost of pushing the day of reckoning o into the future; manipulation of that cost by the Bank was supposed to provide incentive for more or less rapid repayment of outstanding credit, and more or less rapid expansion of new credit. No longer. Today policymakers understand the Fed's job to be taking completely o the table any concern about the mere *timing* of cash ows. e money view has been obscured by other perspectives.

Abstracting from money, both the economics and nance views have in e ect treated liquidity as a free good and, even more, offered up their theories of such an ideal world as the norm for

monetary policy. According to that ideal, liquidity should not be scarce at all; users of the monetary system should be making decisions based on their intertemporal budget constraints, not their immediate cash constraints. Ideally, money should be just a veil obscuring the real productive economic processes underneath, and the job of the Fed is to get as close to that ideal as possible.

e rate of interest should re ect the price of time, not the price of liquidity.

## Lessons from the Crisis

One lesson of the crisis is that this ideal norm goes too far. Our thinking about money has mistaken the properties of models that formalize the economics and nance views for properties of the real world. is is an intellectual error, but one with signi cant practical consequences not least because it inserts a bias toward excessive elasticity at the very center of monetary policy. at bias has fueled the asset price bubble that created the conditions for the current crisis, and that bias will fuel the next bubble as well unless we learn the lesson that the current crisis has to teach.

How ever did we lose knowledge that was once commonplace, the knowledge that came from the older money view? is

cial for the capital development of the nation. At the time, Moulton's shiftability theory provided intellectual support for those who sought to break from the conservative bank doctrine of yesteryear, and thus helped to shift the balance from excessive discipline toward more appropriate elasticity, but it also did more than that.

is book tells the story of how the triumph of Moulton's shiftability view, as a consequence of depression and war as much as anything else, eventually led to the almost complete eclipse of the money view in modern discourse. Today policymakers focus their attention on the rate of interest that would be established in an ideal system of perfect liquidity. Instead of monitoring the balance between discipline and elasticity, the modern Fed attempts to keep the bank rate of interest in line with an ideal "natural rate" of interest, so called by the Swedish reform economist Knut Wicksell.[2]

In contrast to those who held the money view, the academic Wicksell did not see any inherent instability of private credit that central bankers must manage, but rather an inherent stability that central bankers are prone to mismanage. According to him, the pro t rate on capital is a "natural rate" of interest in the sense that the economy would be in equilibrium at that rate. e problem comes when central bankers choose a "money rate" of interest different from this natural rate. If lower, then the di erential creates an incentive for credit expansion to fund new capital investment, and the new spending tends to drive up the general level of prices. Higher prices bring improved pro tability and hence also improved creditworthiness, which creates incentive for further credit expansion in an unsustainable cumulative upward spiral.

Wicksell's academic way of looking at the world had clear implications for monetary policy: set the money rate equal to the natural rate and then stand back and let markets work. Unfortunately, the natural rate is not observable, but we do observe the

price level, and so we can use that as an indicator of whether the money rate is too high or too low. If prices are rising, then the money rate is too low and should be increased; if prices are falling, then the money rate is too high and should be decreased. Unlike the classic British money view, Wicksell tells us that central bankers have no need to pay close attention to conditions in the money market. ey just need to watch the price level.

In modern formulations, neo-Wicksellian policy rules are derived from somewhat di erent analytical foundations, and they focus attention not on the price level but instead on price in ation as an indicator for policy.[3] But the idea is the same. Central bankers have no need to pay attention to conditions in the money market. ey just need to watch prices and adjust interest rates accordingly. One modern formulation of this type is the so-called Taylor rule, which uses the level of aggregate income as well as in ation as an indicator of the appropriate setting for the money rate of interest. e Stanford economist John Taylor has suggested that the origin of our present crisis lies in the failure of the Fed to follow such a Taylor rule, choosing instead to keep the money rate below the rule level for about four years, 2002–2005, thus fueling the bubble that burst in 2007.[4]

Taylor's conclusion that the underlying problem was excessive monetary ease is compatible with the older money view, but the money view would look to developments in private credit markets as well as to actions of the Fed in order to understand what happened. From a money view perspective, instability is the natural tendency of credit markets, not necessarily a consequence of monetary mismanagement; as Bagehot famously stated, "Money does not manage itself." A central bank that understands its role to be the elimination of liquidity constraints, however, tends to exacerbate this natural tendency toward instability because it eliminates a key source of discipline that would otherwise constrain individ-

uals and coordinate their market behavior. e problem we face is not that the Fed failed to follow an appropriate neo-Wicksellian Taylor rule but rather that neo-Wicksellian policy rules are themselves excessively biased toward ease.

Such a bias, it is important to note, would have been impossible in the circumstances for which the money view was originally developed, namely, the nineteenth-century gold standard. In those circumstances, excessive ease would have led promptly to gold out ows, threatening maintenance of gold convertibility in international exchange markets. e breakdown of the gold standard, and its replacement by a dollar standard, meant that the U.S. monetary system faced no such reserve constraint. Here we nd further institutional basis for decline of the money view.

e Fed could, of course, have imposed such a reserve constraint on the system as a matter of policy, but in general it chose not to do so. ( e Volcker episode of 1979–1983 stands out as the only signi cant exception.) For that policy choice, the intellectual support provided by the economics view and then the nance view was crucial. Abstraction from the plumbing behind the walls provided scienti c support for a policy stance that was at systematic variance with what the older money view would have recommended. Dominance of the economics and nance views meant that policymakers chose from a palette of policy options that was biased toward ease.

at said, release from the excessive discipline of the gold standard was certainly a good thing, and it follows that restoration of the Bagehot-era money view is no solution to the current crisis in economic thinking. Bias toward excessive discipline is no answer to the current bias toward excessive elasticity. Instead, what is needed is a restoration of the ancient central banking focus on the *balance* between discipline and elasticity. Furthermore, because the modern economic and nancial world is much changed from

the world in which the money view originally arose, restoration of ancient wisdom must be accompanied by reconstruction for modern conditions and concerns.

is book seeks to begin that reconstruction by taking a resolutely money view to D P D J F X