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In 2010, the U.S. economy has been showing signs of pulling out of its tailspin. But questions remain about why it took so much monetary policy firepower to deal with the crisis.

Regulatory and Monetary Policies Meet 'Too Big to Fail'

by Harvey Rosenblum, Jessica J. Renier and Richard Alm

Not too long ago, conventional wisdom in academic and central banking circles held that monetary policy had become increasingly effective the past quarter century. Growth had become steadier. Recessions were shorter and less frequent. Inflation rates in much of the world had converged to low and relatively stable levels. This complacent view was shattered the past two years as a global financial crisis and severe recession raised doubts about central banks' performance.

To combat the crisis, the Federal Reserve put the target federal funds rate on a downward trajectory, taking it to near zero by year-end 2008. By itself, this traditional monetary policy stimulus proved insufficient to stem the output and employment declines or to reduce financial instability. So the Fed took the boldest policy actions in its 96-year history.



In 2008, the central bank created several special lending facilities that bypassed traditional financial channels for providing credit to the private sector in the U.S. and abroad. In 2009, it augmented the monetary stimulus with quantitative easing, a strategy of reducing longer-term interest rates through purchases of assets such as Treasuries and mortgage-backed securities.

In 2010, the U.S. economy has been showing signs of pulling out of its tailspin. But questions remain about why it took so much monetary policy firepower to deal with the crisis.

We look for answers in the financial channels that transmit monetary policy to the real economy and the regulatory scheme designed to keep the banking system sound. The channels clogged when the regulatory apparatus didn't ensure that banks were healthy enough to lend—a situation exacerbated by the growing influence of very large, systemically important financial institutions, the so-called too-big-to-fail banks.

How It Should Be

Monetary and regulatory policies operate in tandem to facilitate the money and credit flows vital to a modern economy. Central banks conduct monetary policy with an eye toward providing the macroeconomic stability and liquidity that encourage financial institutions to lend to businesses and consumers. Financial regulators strive to ensure lenders don't take on excessive risk.

Before examining monetary and regulatory policies in the crisis, we will review how they're designed to work.

Monetary policy. The Fed typically influences economic activity through the target federal funds rate, the interest rate that banks charge one another for unsecured overnight loans. The Federal Open Market Committee (FOMC) meets every six weeks or so to decide whether to increase, decrease or stand pat on this primary policy lever.

Federal funds rate changes impact the constellation of market interest rates, working primarily through the

banking and financial system. Over time, movements in market interest rates impact real economic activity through four primary channels.¹

When the FOMC adjusts the federal funds rate, banks' cost of funds rises or falls in tandem with that rate. Financial institutions respond by revising the terms and conditions on loans they offer borrowers, creating a *bank loan channel* that alters credit availability throughout the economy. The price and availability of credit influence buying and investment decisions, slowing or speeding up overall economic activity.

A *securities market channel* operates through money and capital markets, where interest rates generally move in the same direction as the federal funds rate. Changes in the price and availability of nonbank financing influence the borrowing decisions that determine larger businesses' employment and output decisions. Smaller companies and individuals usually borrow from banks and other financial intermediaries.

An *asset prices and wealth channel* works through interest rate changes' effect on market prices for a range of assets—such as bonds, equities, and homes and other real estate. Consumers and businesses carry these assets on their balance sheets and use them as collateral for loans. Changes in borrowing capacity directly affect credit use. The perceived value of the assets also factors into households' decisions to spend, borrow and save out of current income.

Finally, interest rate changes impact the relative attractiveness of U.S. investments, creating an *exchange rate channel*. When rates rise or fall faster in the U.S. than in other countries, foreign investors respond by acquiring or divesting dollar-denominated assets. These transactions alter currency values, which in turn affect the relative prices of imports and exports. The price changes filter through to demand for goods and services, affecting overall economic activity.

These four channels summarize how economic textbooks describe monetary policy's impact on the real economy. For the most part, the textbooks get it right—at least for the quarter century of highly effective monetary policy.

The channels' proper functioning led Gordon Sellon, the Kansas City Fed's former director of research, to write in 2002: "Bank lending rates on consumer and business loans and mortgage rates now appear to exhibit a much stronger and faster response to monetary policy actions than in the past. Moreover, institutional changes, such as the increased use of variable-rate loans and the availability of low-cost mortgage refinancing, may have altered the transmission mechanism, potentially broadening the influence of monetary policy on the economy."²

Sellon's observation reflects a conventional wisdom that was right on—at the time. However, monetary policy's channels function smoothly only when banks hold enough capital to safeguard against bad loans and other risks. Well-capitalized banks can expand credit to the private sector in concert with monetary policy easing. Undercapitalized banks are in no position to lend money to the private sector, sapping the effectiveness of monetary policy.

The *bank capital linkage* completes the financial market architecture of effective monetary policy (*Figure 1*).³ However, it's regulatory policy—not monetary policy—that focuses on ensuring banks maintain healthy capital ratios.

Regulatory policy. History teaches us that financial markets—particularly unregulated ones—experience the exuberance of excess risk-taking in boom times, followed by the pain of hard landings. When busts occur, bank failures are particularly unsettling because they can have devastating effects on consumers, companies, industries and even the economy as a whole.

For these reasons, all modern economies seek to ensure the safety



and soundness of the financial industry. Regulation entails setting rules for institutions' operations, activities and ownership. Supervision involves monitoring them to verify that they comply with the regulations.

The Fed shares regulatory and supervisory duties with the Comptroller of the Currency, Federal Deposit Insurance Corp. (FDIC) and Office of Thrift Supervision. The financial institution's charter largely determines each agency's responsibilities. The Fed's regulatory responsibility lies with bank holding companies, those state-chartered banks that have chosen to be under Fed supervision and some foreign banking operations in the U.S.

The savings and loan crisis of the 1980s prompted regulatory reform designed to preserve the solvency of federal deposit insurance and to restore confidence in the banking system. The resulting legislation mandated an approach, dubbed prompt

corrective action (PCA), designed to remedy banks' potential balance-sheet problems before they could fester.⁴ It requires undercapitalized banks to take immediate steps to restore their financial integrity.

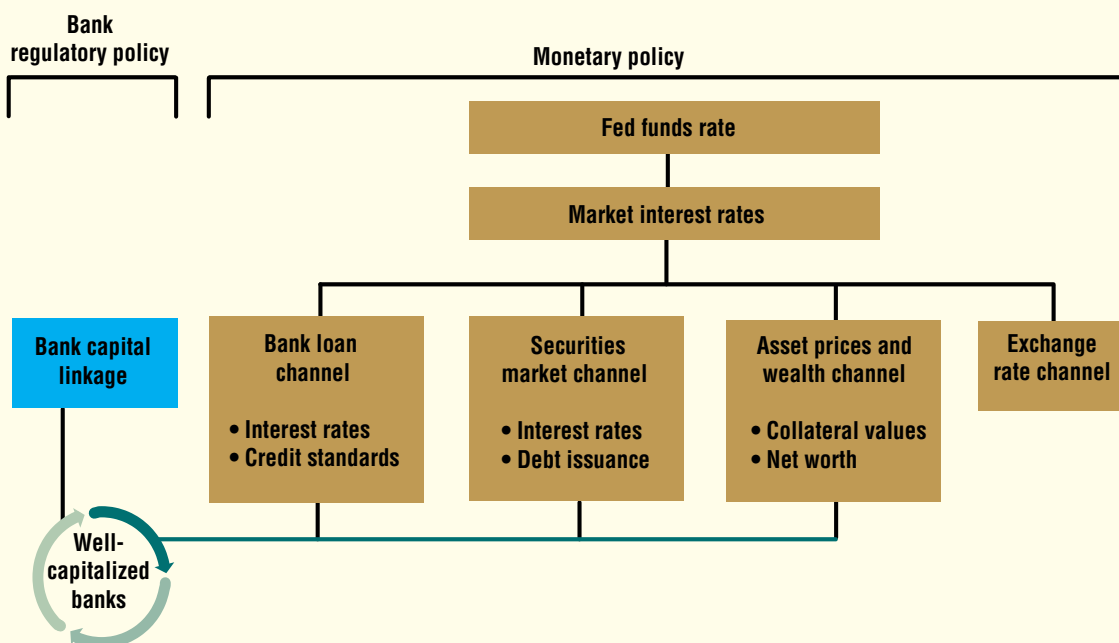
To be considered well-capitalized, banks are required to maintain capital-to-risk-weighted asset ratios of at least 10 percent. In hard times, higher-than-anticipated loan losses can force banks to take writedowns that erode their capital bases. When the key capital ratio slips below 8 percent, regulators begin to invoke a series of PCA procedures that include restraining asset growth. Once the ratio falls below 6 percent, banks face further requirements that include raising equity capital and restricting dividends and bonuses. Taking these actions forces banks to replenish their capital bases, restoring their capacity to lend.

Some troubled banks may be too weak for this kind of remedial action.

Over time, movements in market interest rates impact real economic activity through four primary channels.

Figure 1

The Channels from Monetary Policy to the Economy: Monetary and Bank Regulatory Policies Aren't Independent but Work in Tandem





*Widespread jitters
sent the cost of raising
new capital through
the roof, reinforcing a
lesson of past crises:
Capital is prohibitively
expensive when
needed most.*

PCA requires that critically undercapitalized banks enter receivership or be sold while still solvent, thereby minimizing losses to the FDIC.

PCA breaks down if troubled banks are overlooked or undiscovered by regulators. Loan losses worsen, leading to tighter lending standards and slower or even declining lending activity. Scarce credit slows economic growth, bringing about new rounds of loan losses and writedowns among a widening circle of banks. And on it goes, eventually leading to hardship for the overall economy.

When functioning properly, PCA alleviates banking problems before they grow big enough to threaten the economy. However, problems arise when PCA doesn't live up to its name.

Enter 'Too Big to Fail'

Regulatory action that's both prompt and corrective should go a long way toward reducing the risk of entering the downward spiral of credit and economic activity that can follow loan losses and writedowns. The macroeconomic spillovers that threaten economic stability come from delayed corrective action, which allows troubled banks to put off the painful task of getting their balance sheets in order. The balance sheet problems just worsen.

What interferes with PCA? For starters, it could be a lot of banks getting into trouble at the same time—victims of the same shock. Regulators can't carry out PCA at that many banks quickly enough, and at least some troubled banks will be left to deteriorate further.⁵ Instead of getting well, the sick banks get sicker, tighten credit standards and rein in lending. The cumulative impact is slower growth in the overall economy, causing additional loan losses and feeding the downward spiral of credit and economic activity.

Too-big-to-fail (TBTF) banks are an even greater potential drag on PCA. Our financial system has changed a great deal since the introduction of PCA. The past two decades' financial-market innovations and legislative

changes have allowed banks to operate nationwide, offer a wider range of services and invest in riskier and ever more complex financial instruments.⁶

This business environment has fostered bigness. In 1990, the 10 largest U.S. banks had almost 25 percent of the industry's assets. Their share grew to 44 percent in 2000 and almost 60 percent in 2009. The two biggest banks in housing finance had 44 percent of U.S. mortgage originations in 2009, and the top four had 58 percent.

Mammoth financial institutions confound regulation and supervision because their operations are global, highly complex and often opaque. As the financial crisis unfolded, it became evident that top managers at some big banks didn't thoroughly grasp the risks involved in their institutions' investment decisions.⁷ For supervisory agencies, this overwhelming complexity makes determining the condition of such banks an epic undertaking in time and manpower—an obstacle to the "prompt" in PCA.

Perhaps more important, putting the "troubled bank" tag on a TBTF institution has daunting consequences. The biggest banks have tentacles that reach deep into other financial institutions, industries and countries, creating a potential for serious and unforeseen consequences from PCA. Shutting down a TBTF bank is a worst-case scenario that involves immense cost—directly for the FDIC and indirectly for the economy.⁸

In the financial crisis that began in 2007, widespread mortgage loan losses at banks led to massive writedowns. The number of problem institutions rose from 90 in first quarter 2008 to 702 in fourth quarter 2009.⁹ The assets of those troubled institutions totaled \$403 billion, the equivalent of a few large regional banks, suggesting that none of the largest—i.e., TBTF—banks ever reached the point of being declared a problem bank or being subjected to PCA intervention.

Yet some of the largest banks were no doubt crippled. The financial



press certainly knew of the problems. Starting in early 2007, one article after another told of industry giants suffering huge losses on what would eventually be described as “toxic assets” (Table 1). Investors were also aware of the problems. In 2007 and 2008, bank stock prices plunged as the public lost confidence in bank managers and regulators (Chart 1).

What Went Awry

Facing rapidly deteriorating economic conditions in 2008, the Fed turned to its traditional monetary policy tool—the federal funds rate. Policymakers assumed lower interest rates and sharp increases in discount-window lending would have a positive impact on the real economy through monetary policy’s transmission channels.

It didn’t happen. The macroeconomic imperative called for maintaining and expanding private-sector loans. However, banks’ focus was microeconomic—the erosion of their capital ratios. Banks faced an urgent need to shore up balance sheets by raising capital and selling or otherwise reducing assets. But widespread jitters sent the cost of raising new capital through the roof, reinforcing a lesson of past crises: Capital is prohibitively expensive when needed most.

Banks’ diminished capacity to lend had important implications for monetary policy. The growing presence of undercapitalized banks blocked the channels that transmit central bank actions to the real economy. In time, the FDIC could whittle down the number of troubled banks by closing and merging smaller institutions. What the system couldn’t deal with was the TBTF institutions, which by their nature couldn’t be put out of business in the midst of a financial crisis.

Troubled banks left in place clog up monetary policy mechanisms. The *bank loan channel* behaved perversely. The FOMC aggressively lowered the federal funds rate, anticipating that interest rates on bank credit would go down, too. In their efforts to ration

Table 1

Selected Timeline of Global Financial Industry Distress: February 2007–January 2008

Feb. 8, 2007	Increase in bad home loans to high-risk borrowers in U.S. shakes HSBC, heightens perceived risk of corporate debt
April 2, 2007	New Century Financial, a leading subprime mortgage lender, files Chapter 11 bankruptcy
June 23–Aug. 2, 2007	Bear Stearns fights to save two ailing hedge funds by pledging billions of dollars and suspending redemptions, but it fails; both funds file for bankruptcy
Aug. 9, 2007	BNP Paribas, France’s largest bank, halts redemptions on three investment funds after it is unable to value subprime mortgage assets
Aug. 14, 2007	Goldman Sachs and investors inject \$3 billion into the firm’s flailing quantitative hedge fund
Sept. 14–17, 2007	Northern Rock, the United Kingdom’s fifth-largest mortgage lender, receives emergency funds from the Bank of England; the government guarantees savings deposits
Oct. 5, 2007	Following similar warnings by Citigroup, UBS and Credit Suisse, Merrill Lynch warns of major writedowns for bad investments linked to U.S. subprime mortgage defaults; Washington Mutual joins with warnings of major losses
Oct. 16, 2007	Citigroup begins a string of major writedowns based on subprime mortgage loans
Oct. 24, 2007	Merrill Lynch announces an \$8.4 billion writedown related to mortgage losses
Oct. 30–Nov. 4, 2007	Merrill Lynch CEO Stanley O’Neal and Citigroup CEO Charles Prince step down amid major losses
Nov. 13, 2007	Bank of America reveals need to write down \$3 billion in debt securities due to subprime mortgage defaults
Dec. 10, 2007	UBS posts a \$10 billion writedown in debts linked to the subprime U.S. mortgage sector
Dec. 14, 2007	Citigroup attempts to rescue seven structured investment vehicles in \$58 billion debt bailout
Dec. 20, 2007	Morgan Stanley takes a \$9.4 billion writedown of assets and sells a \$5 billion stake to a Chinese sovereign wealth fund
Jan. 15–23, 2008	Bank of America joins the parade of firms with mortgage-related losses, following Citigroup’s \$22.2 billion writedown and Merrill Lynch’s sale of a \$6.6 billion stake to foreign investors

SOURCES: Federal Reserve Bank of New York timeline, www.newyorkfed.org/research/global_economy/Crisis_Timeline.pdf; Federal Reserve Bank of St. Louis timeline, <http://timeline.stlouisfed.org/index.cfm?p=timeline>; Credit Writedowns, www.creditwritedowns.com/credit-crisis-timeline.

the limited capital remaining on their balance sheets, however, banks facing loan losses tightened credit standards and retrenched, and the rates that mat-

ter most—those paid by businesses and households—rose rather than fell, thwarting the Fed’s goal of reducing rates to stimulate the economy.



Chart 1
Bank Stock Prices Plunge Amid Turmoil



NOTE: Index based on average stock price of Citigroup Inc., Bank of America Corp. and J.P. Morgan Chase & Co. TARP is the Troubled Asset Relief Program.

SOURCES: Bloomberg; *New York Times*; authors' calculations.

The *securities market channel* constricted because investors hunkered down as the rapidly deteriorating conditions of many TBTF banks slowed the economy and shattered overall confidence. Toxic assets' deadweight impeded the flows of debt and equity capital to businesses and consumers. In past crises, large companies had the alternative of issuing bonds when troubled banks raised rates or curtailed lending. This time, capital markets offered little relief.¹⁰

When the crisis sent private-sector interest rates up rather than down, the value of homes, stocks, bonds and other assets fell, impeding the *asset prices and wealth channel*. In a flight to cash, households and businesses turned to balance sheet deleveraging—that is, asset sales, even at unattractive prices. Debt and new borrowing tumbled at the worst possible time.

The *exchange rate channel* failed for several reasons. First, official policy rates fell, but rising interest rates for private-sector borrowers made U.S. assets more attractive. Second, the

simultaneous drop in official policy rates in other countries experiencing similar financial problems reduced the incentive for foreigners to purchase U.S. assets, goods and services. Third, investors fled to the safety of the U.S. dollar, pushing its value up.¹¹

Because of the blockages in these channels, PCA was ineffective in an era of TBTF banks (*Figure 2*). The problems originated with several very large, systemically important financial institutions that were experiencing similar shocks and hemorrhaging losses. Because PCA loses its “prompt” in the case of TBTF banks, problems festered, causing negative spillovers in the rest of the economy.

TBTF banks became the propagating mechanism for an adverse feedback loop between the banking system and the economy. As a result, traditional monetary policy lost much of its effectiveness. The obstructions in monetary policy channels worsened a recession that has been longer, deeper and more painful than any post-World War II slump.

With its conventional policy tools blocked, the Fed resorted to unprecedented measures the past two years, opening new channels to bypass the blocked ones and restore the economy's credit flows. While the extraordinary measures helped stabilize the economy, the fact remains that monetary policy didn't work as it should have. In retrospect, it is clear that TBTF financial institutions were clogging the channels vital to the proper functioning of monetary policy.

Connecting the Dots

PCA is well-intentioned, but it assumes that bank failures are isolated events, a notion that made sense before the banking system became so highly concentrated and interconnected. Even more problematic, PCA isn't equipped for the challenges of too-big-to-fail financial institutions. When a lot of banks are in trouble at once, or when one or more TBTF institutions are tottering, efforts to keep the financial system sound are delayed—with potentially serious implications for monetary policy.

It may be possible to restore promptness to PCA by expanding the capacity for supervision and remedial action—at least for non-TBTF banks that run into problems. Until we address issues surrounding TBTF, however, the biggest, most complex institutions will remain a potential danger for two reasons. First, their size, geographic reach and complexity render them too complex to manage. Second, these characteristics make them an overwhelming challenge for regulators. Supervisors must rely on the same opaque and confounding accounting and management information used by the banks themselves.

Many ideas have been put forward to reduce the threat of TBTF banks so that they won't undermine bank regulatory policies, frustrate monetary policy and weaken the economy in the future. Among the proposals: (a) increasing capital, (b) reducing leverage and size, (c) imposing product limitations, (d)



enhancing supervision, (e) improving market discipline and (f) breaking up TBTF institutions *before* the next crisis.¹²

While any of these proposals might help, there's no doubt risk management needs improvement, perhaps as part of a regulatory and supervisory overhaul. The merits of imposing controls over the freewheeling and unregulated segments of the financial services industry, often called the shadow banking system, also deserve some focus and debate.¹³ Clearly, some combination of these general reform recommendations is needed to reduce the probability, frequency and magnitude of future financial bubbles.

Even if we reduce the TBTF threat, monetary policy will still depend heavily on effective regulatory policy. Transmitting the Fed's actions to the

real economy requires sound financial institutions that are well-capitalized and willing to lend. It's the job of regulation and supervision to weed out the weak banks so their inability to lend doesn't block monetary policy channels.

This reliance on well-functioning banks gives central bankers a vital need for precisely targeted, real-time data on the health of the financial system and the institutions within it. These data can affect central bank decisions such as the timing, strength and tactics of monetary policy actions, including lender-of-last-resort policies and decisions. Incomplete or dated information increases the chances for errors.

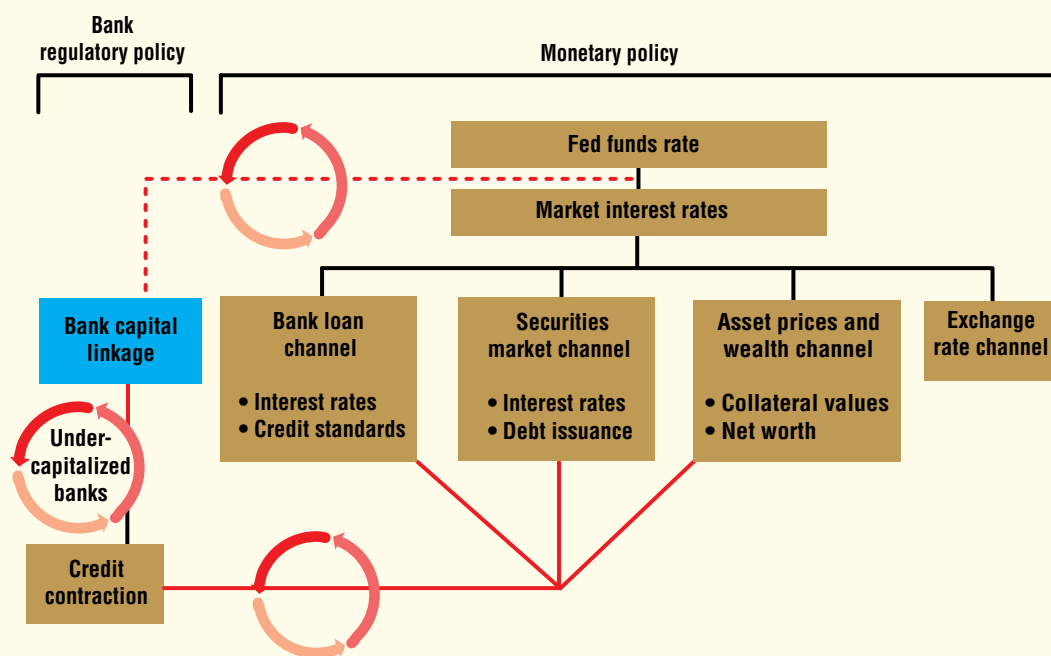
Monetary and regulatory policies are inseparable. The Fed's supervisory role puts the central bank's finger

directly on the pulse of the financial system, providing a tool that serves the goal of effective monetary policy-making. While the Fed has accepted criticism for failing to detect potential problems prior to the crisis, the failure only highlights the need for better integration of monetary and regulatory policies. Stripping the Fed of regulatory functions would compromise the conduct of monetary policy.

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Figure 2

Monetary Policy Channels Blocked in Crisis, Especially in Era of Too-Big-to-Fail Banks



When banks are undercapitalized, an adverse feedback loop of tightening credit directly affects terms of bank loans, the securities market and asset prices, thus undermining official interest rate policy. These same channels, along with the exchange rate, are adversely affected in indirect ways through sticky market interest rates as a result of bank retrenchment. If undercapitalized, too-big-to-fail banks are major obstacles to effective monetary policy because of their size, complexity and resistance to regulatory remedies.

Notes

¹ See “The Monetary Transmission Mechanism: Some Answers and Further Questions,” by Kenneth N. Kuttner and Patricia C. Mosser, Federal Reserve Bank of New York *Economic Policy Review*, May 2002, pp. 15–26.

² See “The Changing U.S. Financial System: Some Implications for the Monetary Transmission Mechanism,” by Gordon H. Sellon Jr., Federal Reserve Bank of Kansas City *Economic Review*, First Quarter, 2002, pp. 5–35.

³ See “Explaining Bank Credit Crunches and Procyclicality,” by Robert R. Bliss and George G. Kaufman, Federal Reserve Bank of Chicago *Chicago Fed Letter*, no. 179, July 2002.

⁴ Federal Deposit Insurance Corporation Improvement Act of 1991, www.fdic.gov/regulations/laws/rules/8000-2400.html.

⁵ In the 1980s savings and loan crisis, Richard Breeden, chairman of the Federal Savings and Loan Insurance Corp., told the press his agency had the capacity to close only three S&Ls a week, putting an effective cap on the number of institutions that could be shuttered. Until the week of June 26, 2009, when the Federal Deposit Insurance Corp. (FDIC) began closing an increased number of banks on a sustained basis (as many as nine banks in one week), it appeared as though the FDIC would face similar capacity restraints.

⁶ The Glass–Steagall Act of 1933 and Bank Holding Company Act of 1956 had prohibited a single institution from acting as a combination investment bank, commercial bank and insurance company. In 1999, the Gramm–Leach–Bliley Act opened up the market to allow such combinations within a financial holding company, although these entities still cannot own nonfinancial firms. Moreover, the Riegle–Neal Interstate Banking and Branching Efficiency Act of 1994 eliminated most restrictions on interstate banking and branching.

⁷ In answer to questions during testimony before Congress on Feb. 25, 2010, Fed Chairman Ben Bernanke explained the difficulties supervisors have in assessing risks faced by institutions that even corporate managers didn’t fully comprehend: “In the previous crisis we really learned that many large, complex companies didn’t really understand the full range of risks that they were facing. And as a result, they found themselves exposed in ways they didn’t anticipate. So if a

company doesn’t have strong risk management controls and a strong culture of enterprise-wide risk management, I think that would be also grounds for the supervisor requesting either substantial strengthening in those controls or eliminating those activities.”

⁸ Finding a healthy bank that is willing and able to be a merger partner for a very large troubled bank can be particularly difficult in the midst of a financial crisis when many banks are already hobbled by the same shocks and overall economic weakness. The problem is compounded when the financial crisis spreads globally.

⁹ FDIC Quarterly Banking Profile, Fourth Quarter, 2009, www2.fdic.gov/qbp/2009dec/qbp.pdf.

¹⁰ See *In Fed We Trust*, by David Wessel, New York: Crown Publishing Group, 2009, pp. 102–03.

¹¹ The strength of a currency also reflects perceptions about the relative financial strength of each country’s banking system because, after all, one’s ability to obtain currency is dependent upon a bank’s ability to honor its obligation to depositors to convert bank deposits into cash. This obligation is dependent upon the perceived robustness of the nation’s deposit insurance system. In the U.S., the FDIC’s reputation is unparalleled for quickly paying depositors the full amount of their deposits, up to the insured limits. As a result, it is no accident that a flight to safety during banking and financial panics is much the same as a flight to U.S. dollar deposits.

¹² See “The Blob That Ate Monetary Policy,” by Richard Fisher and Harvey Rosenblum, *Wall Street Journal*, Sept 28, 2009; “Paradise Lost: Addressing ‘Too Big to Fail’ (With Reference to John Milton and Irving Kristol),” speech by Richard Fisher, president and CEO of the Federal Reserve Bank of Dallas, Nov. 19, 2009; “Lessons Learned, Convictions Confirmed,” speech by Richard Fisher, March 3, 2010; and “The \$100 Billion Question,” speech by Andrew G. Haldane, executive director, financial stability, at the Bank of England, March 2010. As of this writing, numerous proposals to address TBTF financial institutions were making their way through the U.S. Congress.

¹³ Parts of the shadow banking system exist even within the shadows of traditional commercial banking—including hedge funds owned and operated by commercial banks.

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