



Too Big to Fail: Suggestions to Limit the Future Fallout

Chris de la Torre^a, Rutilio Martinez^b

a. Kenneth W. Monfort College of Business, University of Northern Colorado,
Greeley, Colorado

b. Kenneth W. Monfort College of Business, University of Northern Colorado,
Greeley, Colorado

Abstract

In 2008, the U.S. financial system suffered the most severe financial crisis since the Great Depression. AIG, Fannie, Freddie, Indy Mac, Country Wide, Bear Sterns, Merrill Lynch, Lehman Brothers, and others became casualties of the mortgage related meltdown that required significant intervention by the Federal Reserve. In the following years, Congress grappled with the appropriate response. The legislation that passed in 2010 has produced an even larger concentration of bank assets in the U.S. This paper discusses the principles that caused the problems and why these solutions will not work in long run.

Key Words: Bank Regulation, Commercial Banks, Deposit Insurance, Deregulating, Deregulation, FDIC, Federal Reserve Board, Federal Reserve System, Glass Steagall, Policy, Policy Making, Regulation, Regulatory, Standard

JEL: 280 Financial Institutions and Services: Government Policy and Regulation

1. Introduction

Has the 2010 Dodd-Frank Act diminished the probability of having a future financial crisis? If one of its necessary preventive measures was to minimize the concentration of bank assets, then Dodd-Frank has not fared-well. The *Wall Street Journal* stated that “In 1970, according to data from the Federal Reserve Bank of Dallas, the five largest U.S. institutions owned 17% of banking industry assets; in 2010 that share was 52%.”¹

If this is the case, how then does one limit the contagion and the possible devastating effects from a systemic failure from one of the biggest banks? Since the introduction of the term, “too big to fail,” with the Continental Illinois Bank failure in 1983, regulators have struggled with the idea of banks and other financial institutions becoming too important and large to allow for insolvency. One way to reduce this risk would be to break up the banks so that no one possible bank could be big enough to bring down the whole system. Thus it would no longer be *too big to fail*. So let us assume that you took JP Morgan Chase and split it into ten equally-sized banks. It was previously thought by academics and regulators that if any one bank fails, there will be little contagion, and the whole system would be able to survive. However, as in the Subprime Loan Crisis, when a very large bank runs into trouble, liquidity may dry up during a financial crisis for the banking system, since uninsured depositors and investors with information asymmetry, will have little information on the financial condition of other banks, particularly when complex

¹ (Frost 2012). In addition the following statement further supports the notion of asset concentration. “The top five U.S. commercial and investment banks — **Bank of America, J.P. Morgan Chase, Citigroup, Wells Fargo and Goldman Sachs** — have emerged from the financial crisis larger than ever. As of the third quarter of 2010, they had a total of \$8.6 trillion in assets, according to data provider **Capital IQ**. That’s 13.3% of all U.S. financial firms’ assets as calculated using **Federal Reserve** data, up from 11.8% three years earlier, when the financial crisis hit (Anonymous, January 11, 2011).” Furthermore, “And the biggest banks have only grown. The four biggest firms—J.P. Morgan Chase, Bank of America, Citigroup and Wells Fargo—have assets equal to 62% of total commercial-bank assets. That is up from 54% five years ago (Anonymous, December 7, 2011).” The most recent data available from the World Bank, via the Federal Reserve Bank of St Louis shows that the concentration for the 5 largest banks has fallen to 46.98% at the beginning of 2011.

loans and securities are involved, resulting in most banks having liquidity problems.² In other words, creating new legal entities, *i.e.* nine new banks with exactly the same composition of complex financial assets, does not diminish the systemic risk and the subsequent contagion.

2. Possible Remedies.

2.1 Limiting Notational Value. One possible remedy to reduce bank risk would be to limit the notational value of the derivatives associated with mortgage-backed securities and other instruments to say no more than two or three times or maybe even 10 times the underlying value?^{3,4} What this means is that the actual hedging of a transaction will be limited to a certain number of times the exposure.⁵ During the Subprime Crisis, not only was there no practical limit to the speculation, but some banks were so heavily levered in some cases to the tune of 36 times that when the hedge instruments moved against them. Some banks invested in lending money to hedge funds while other banks actually bought the instruments.

² Chances are that banks will invest in many of the same assets and make many of the same loans which during a financial crisis will result in the correlation between banks to approach 1 meaning that if the assets lose value and the loans are not serviced then the probability increases that all banks will have liquidity and solvency problems. *See also* (Sharpe, 1963), for a more mathematical explanation.

³ Let us assume that the amount of the risk exposure is only say \$100M. This is the notational value. But, let's also assume that you allow for other interested parties to take sides on the bet. This is no longer hedging but pure speculation. Normally, again no one will care if the losses are localized and no institution is jeopardized. But if the exposure becomes so large given the side bets, then this provides the destabilizing effect. In Las Vegas the house makes sure that its exposure is kept to a minimum by adjusting for example, the point spread. The casino ideally wants both sides of the wager to be covered equally so that it minimizes its naked exposure. This does not happen on Wall Street. There is no casino monitoring the lopsidedness of a bet.

⁴ As an further aside, insurance companies require an insurable interest before insurance will be issued, meaning that there has to be real risk exposure and not a means to speculate on a bad event occurring.

⁵ Synthetic CDOs have most commonly been linked to unlimited notational value. Whereas with real assets, there is a limit to the amount of contracts that can be written given the finite amount of revenue, with synthetics no limit exists. Literally the sky is the limit. And couple this with the fact that this is leverage to the fourth degree, you have for some very volatile situations. Small movements generate large gains. Large movements wipe firms out.

Regardless, whether the bank or the hedge fund suffered the loss, the bank had problems.

But what was not fully appreciated nor understood was the fact that markets were becoming more correlated and interconnected. When the same asset is the basis for 30-times the notational value—if that asset goes down then impact is felt much more and especially if the asset’s derivatives are sold all over the world. Why did the failure of the U.S. housing market cause so much damage? It was because the transaction was oversold, and not just in the U.S. but throughout Europe and Asia.

Furthermore, credit rating agencies gave investment grade assurances that many Collateralized Debt Obligations (CDOs) were low risk. Johan Norberg writes:

“The remarkable thing was that the riskiest tranches of those CDOs could also get top grades from the rating agencies. Since they are one step further removed from the actual housing market, you might think that CDOs were less exposed to price fluctuations or to bad loans. In fact, the risk could be significantly higher because the creators of CDOs would often buy the riskiest mortgage-backed securities and repackage them. But even if a CDO designer use only building blocks rated BBB or BBB-, 75 percent of the CDOs they were packaged into were awarded AAA rating because they, in turn, were insured with a major insurance company.” Norberg (2009, p. 48)

The rating agencies were snookered into believing that a portfolio of bad risks were transformed into investment worthy assets by simply having of number them as if financial alchemy could turn a sow’s ear into a purse.^{6 7}

⁶ Michael Lewis stated in *The Big Short*, wrote: “In early 2007 [Jim] Grant wrote a series of pieces suggesting that the rating agencies had abandoned their posts—that they were almost surely rating these CDOs without themselves knowing exactly what was inside them.” (2010, p. 177)

⁷ McGillivray and Fung (2013, p. 21) discuss pending legal action against certain credit rating industry members, noting that conflicts of interest arose from “their revenue stream, the risk inherent in the products being rated, and the delay in implementing updated analytical models and downgrading the RMBS and CDOs . . .”

Most of the time people do not care if we enter into a zero-sum bet because there is no net effect on society (*i.e.* a large Super Bowl bet that goes wrong will only affect me and the casino). However, when the bet produces such a wealth transfer from one side to the other, and the losing side happens to be a large financial institution, such as Fannie Mae or Merrill Lynch, then that transfer has to be honored with a government bailout. So perhaps the amount of any one transaction could be limited. But what about splitting the transaction into many? Would this be a means to reduce risk? Probably—which would imply that the notational value limit may have to be imposed but not just by transaction, but across the whole financial system. No set of transactions could have, perhaps more than thirty-times the cumulative notational value, regardless of the size of the individual transactions. The other worry about limiting the transaction amount and even the notational value is whether this could be imposed internationally. What would stop a large hedge fund or bank from transacting overseas? This would limit U.S. financial institutions from profiting on the transaction business without really limiting the overall problem.

2.2 Limited Liability. Another suggestion would be to limit the amount of limited liability afforded to banks. In other words make stockholders and directors/managers potentially liable for losses. It is interesting to note that if you go to a bank and ask for a loan for your LLC, or S-Corp, the bank will invariably ask for a personal guarantee. Is it surprising that banks want to get their money back by making you personally liable for the company's debt? Yet, why not have something akin to a limit on limited liability. The argument against limited liability would be that lending would become scarce and more expensive, making future growth more expensive and limited. Furthermore, foreign countries would lend on more favorable terms, placing the domestic financial industry at a cost disadvantage.

2.3 More Equity/Convertible Debt. Another variation on this would be to have more capital at risk. If the amount of equity is increased then the amount of potential losses can serve as a deterrent to unwarranted risk-taking. This would be the classic “more skin in the game” approach. A different approach would be to have a class of debt that

would automatically convert to equity if certain ratios falter. Most of the time convertible debt is exercised by the debt holder when the stock goes up in value. In this case, the bonds would be converted by the regulator when the bank is suffering losses with accompanying stock declines. This would make bonds riskier and more expensive but also make the bondholders more aware of the type of investments being made by the bank. In essence bondholders would be recruited to be another overseer of the bank's risk management team.

In a recent *Wall Street Journal* article (Reilly, 2013), a variation of the above theme would be to require that TBTF banks hold more long-term bonds as debt, which would result in a higher interest expense and would also create a larger pool of bank liabilities that in liquidation could be used to absorb losses before having to dipping into the deposit insurance. This would be a less radical approach as compared to using convertible debt.

2.4 Treasuries equal to Deposits: Holman Jenkins, a *Wall Street Journal* columnist (Jenkins 2013) had another solution to the TBTF problem. One way to protect depositors and limit FDIC exposure would be to require large banks to hold Treasuries equal to the amount of deposits. As Jenkins states,

“Disturbed would be the certainty of uninsured creditors that they would be bailed out to minimize the cost of bailing out insured depositors. Yes, the implications would be profound. Checking-account customers might have to begin paying for the services they consume rather than being a hidden beneficiary of the rents from deposit insurance. This is a feature not a bug.”⁸

This would also serve to limit the money supply as the amount of low-cost deposits and loans to banks would be reduced unless banks offered higher rates of return, which

⁸ Jenkins, Holman W., “Yes, Let's 'Bail In' Depositors: One Cheer for the Cyprus solution to banks that are ‘too big to fail.’” *Wall Street Journal*, March 19, 2013, available at www.wsj.com.

in turn would possibly restrain bad behavior by possibly decreasing liquidity and increasing interest rates, all of which would limit bankers' actions.

2.5 Establishing Exchanges for More Transparency. If you want to limit the amount of notational value, the only way to do so is to establish an exchange that will provide order and supervision. And yet, markets are moving more and more away from exchanges as evidenced by the growth in dark pools.⁹ Hedge funds will especially complain about having to show their cards. Yet, without knowing the amount of money being speculated in certain assets and transaction, it will be impossible to gauge the systemic risk.

2.6 Better Regulation and Moral Hazard. Finally for now, there is the idea of better regulation. One of the tenets of regulation is that no rule or regulation is perfect. This was one of Oliver Williamson's insights as to why firms sometimes decide to take over strategic suppliers rather than risk being held for ransom in negotiations.¹⁰ But in this context it is about moral hazard.¹¹ Anytime you do not fully absorb all the risk, there will be a motivation to take chances, obviously because you are not fully liable. Whenever you tell a bank that they will not be allowed to fail because they are too big to fail, you are literally stroking the fires for the bank to take on more risk. Can you fully regulate moral hazard?

⁹ Dark pools refer to large institutional-type investors trading off the organized exchanges by directly contacting each other. Regulatory oversight requires that the volume and settlement prices be disclosed at the end of the day.

¹⁰ In 2009 Oliver Williamson won the Nobel Prize in Economics. A part of his work dealt with Transaction Cost Economics which tries to better understand the famous Ronald Coase's "black box" characterization of the firm.

¹¹ Moral hazard can be defined in a number of ways. Granted, moral hazard occurs after the fact while adverse selection occurs before the fact. In both cases there is an imperfect pricing of risk. Both adverse selection and moral hazard attempt to take advantage of something given to you for free. If I know that my actions will not result in the full consequences of a possible loss, then I am being subsidized in my risk behavior and logically I will try to take full advantage of the "freebie."

Robert Shiller (2011) believes that the market can provide the discipline to restrict risk taking, by allowing the buying public to be fully informed. Shiller's argument finds strong support using rational expectations theory. However, as consumer behavior regarding alcohol and tobacco has shown, full information without penalties for bad behavior (*i.e.* internalizing the negative externalities) tends not to work. So if we know that regulation is always imperfect, and that markets can only work if no risk shifting is allowed, then what is the answer? One of the reasons for the *Glass-Steagall Act* was to disallow financial institutions that received deposit insurance to also have risk-taking ventures such as insurance, investment banking, and the like. Effectively this required banks to shed their insurance and investment banking arms. From an elementary or first principle basis, the idea was to have banks, which are receiving implicit guarantees from the government for the deposit holders, to not have free insurance for their other ventures. This was a classic case of trying to minimize the moral hazard exposure.

Over many decades the banks convinced the regulators that banks' ability to monitor and minimize risk were so sophisticated that any probability of a large contagion and catastrophic event was so minute, that this was no longer a reason for still having *Glass-Steagall*. Banks effectively argued that even though there was a moral hazard exposure, *i.e.* the ability to take risk without paying the full price of failure, the risk was effectively eliminated. Thus the 1999 *Gramm-Leach-Bliley Act* successfully neutered *Glass-Steagall*. Even Alan Greenspan believed that the markets had the ability to implement the necessary discipline to eliminate future speculative bubbles.¹²

So let us review—moral hazard occurs after the fact/transaction and adverse selection occurs before the fact. But the unifying constant is that someone does not pay the full price, for the risk undertaken (delete phrase--for what they want. Assume that you have an all-you-can-eat buffet; naturally big eaters will be attracted to the offering. This is the classic adverse selection example. Now assume that you have a bank that

¹² "Bubbles generally are perceptible only after the fact. To spot a bubble in advance requires a judgment that hundreds of thousands of informed investors have it all wrong. Betting against markets is usually precarious at best." (Greenspan, 1999)

gets a guarantee that it will be salvaged regardless of its actions. This is the classic moral hazard example given that banks will pursue a riskier course of action knowing that they will not have to pay for their mistakes. The question that needs to be answered is—how to eliminate the perverse incentive to pursue a path that is motivated by self-interest. If we have an all-you-can-eat buffet, the only way to change the incentive to eat too much is to charge according to what a person eats. If a bank makes bad loan, then you allow the bank to suffer the consequences. In the case of the restaurant, if the losses pursuant to the buffet become too great, then the only recourse is to end the buffet and charge *a la carte*. In the case of the bank should suffer for its mistakes but only if it has the resources to cover the losses. And this is the key. How do you make banks willing and able to cover their losses?¹³

3. The State of Bank Regulation

Glass-Steagall. So should we go back to *Glass-Steagall* and separate the risk taking functions from the deposit/loan making functions of a conventional bank? As a young engineer one of the authors worked for El Paso Electric Company (EPEC), which had the dubious distinction of being the second publicly-held utility to declare for bankruptcy in the modern era. In the five-years working there, senior management increased their attention upon non-traditional business ventures, including renovating downtown real estate. The question always remained, who would responsible if these business ventures failed? Should the rate payers be asked to contribute more if the solvency of the company was at risk? On the other hand, if the ventures were successful, would that result in lower electric rates? The understanding was that losses, if any, should be compartmentalized if possible. But what if the losses are so great that stockholder equity is wiped out and the very essence of the electric company is threatened? Would the Public Utility Commission be forced to raise rates?

The reason that we bring up the utility example is to illustrate that the moral hazard problem is not unique to banking. EPEC was trying to use its cash flow machine in the

¹³ A recent paper by Reddy (2011) indicates that moral hazard in a problem with minimally capitalized Indian Banks.

form of a regulated utility monopoly to fund and increase its leverage in investment properties that supposedly would provide increased revenues. But the understanding was that any increased revenues were to be distributed solely to equity holders with no benefit accruing to the ratepayers. Yet, when EPEC was reorganized in bankruptcy, energy rates were increased to make up for the real estate losses. This was an example of the famous, “heads I win, tails you lose.”

So how does one allow a regulated entity, albeit a utility or bank, to take risk and pay the full cost for any losses? Let us review the first principles of regulating risk: ❶ Make the risk-taker pay for losses. ❷ Make sure the risk-taker has adequate resources to pay for the losses. ❸ Make sure that the risk-taker has the right incentives to continue to take risks. Right now, we have some ideas, but nothing earth-shattering. Our skepticism comes from the fact that big banks will always have the implicit guarantee that “too big to fail,” will never go away.

Part of the problem is that if we assume that *Glass-Steagall* was reinstated, effectively minimizing a bank’s direct ownership of investment subsidiaries, what is to stop banks from making loans to hedge funds that in turn invest in a future speculative bubble? If the bubble bursts, the loans go bad and the banks become insolvent. So now, the banks are one link removed from the bad assets, but are still engulfed by the bad loans. So, somehow *Glass-Steagall* does not seem to be the right answer. Instead, the answer has to be comprehensive which includes supervision of a bank’s direct investment, as well as the close supervision of loan portfolios. But doesn’t this describe the situation that existed prior to the housing crisis? In fact, we do have weighted risk-adjusted capital requirements, as per *Basel I, II and III*. Yet this did not appear to prevent the banking crisis that ensued after the housing bubble burst. This is why we are skeptical of new regulation.

The chairman of the Federal Reserve Bank of Dallas, Richard W. Fisher, stated his proposal for solving TBTF:

“In a nutshell, we recommend that TBTF financial institutions be restructured into multiple business entities. Only the resulting downsized *commercial* banking operations—and not shadow banking affiliates or the parent company—would benefit from the safety net of federal deposit insurance and access to the Federal Reserve’s discount window.” (Fisher, 2013, p. 3)

The proposal is simple and easy to understand. But the mere legal separation of functional areas will not eliminate the systemic risk unless the lending to these separate units is curbed. This can only happen with the coordinated efforts not only in the U.S. but around the world.

In another recent *WSJ* article, Fisher and Harvey Rosenblum (2013) posit another three-point plan. First they would limit the FDIC deposit insurance to only banks. Second, customers, creditors and counterparties would be required to sign an acknowledgement that the government would not backstop their investments. Third, that bankruptcy laws be amended to provide swift and definitive disposal of assets once liquidation. Yet, this assumes that these TBTF banks would be allowed to declare bankruptcy and that customers/clients would really believe that government would not in fact bail them out. It is unlikely that the Federal Reserve would really allow a TBTF bank to fail.

A recent paper by Charles S. Morris (2011), stated that banks typically provide the following broad functions:

- Commercial banking—deposit taking and lending to individuals and businesses.
- Investment banking—underwriting securities (stocks and bonds) and providing advisory services.
- Asset and wealth management—managing assets for individuals and institutions.
- Dealing and market making—intermediating securities, money market instruments, and over-the-counter derivatives transactions for customers.
- Brokerage services

- Proprietary trading—trading for bank’s own account and owning hedge funds and private equity funds.

Mr. Morris believes that banks should only provide the first three functions, which would lead to more transparency on the part of the banks and subsequently more effective regulation. The problem is that the systemic risk is not reduced—only shifted to the hedge funds and other institutions that make the market. Again, while the banks may not be directly involved, if the banks in fact lend to the hedge funds then the risk is only once removed but still in the system. In many ways the problems is similar to the house with a leaky roof. While patching the most obvious leaks will lead to a drier inside, water will always seek an entry point to the dismay of the homeowner.

3.1 A few other comments. *Dodd-Frank* also gave us the *Volcker Rule* that prohibits banks from investing or sponsoring hedge funds or private equity funds or from engaging in proprietary trading. The *Volcker Rule* can be considered an updated version of the Glass-Steagall Act. Furthermore, even if the *Glass Steagall Act* had never been repealed, the Act never applied to the securities activities of U.S. banks outside the U.S. Given the fact that much of financial transactions occur or would occur outside the U.S. borders, the efficacy of such a regulation would be questionable.

3.2 Better Regulation Redux. So is Shiller right? Can regulation and the market provide enough “tough love” to provide sufficient friction to stop another global financial meltdown? We are pessimistic. Greed is such a powerful inducer. Finance guys are always motivated by making more money, which attracts talent. This talent typically outguns the regulator in motivation and in brain power, and of course in computing power. The regulator is always playing catch up so it should not be surprising that a new scheme is hatched before the regulator has time to react.

It may be possible that new compensation schemes could be instituted, such as long-term claw backs that are found in the corporate sector. This would allow for

board of directors to have bonuses returns if long-term metrics deteriorate. Unfortunately this would require a majority of the banks to adopt such policies as it would encourage forum shopping in only a few banks held this position. On the other hand, the fact that so many investment banks awarded bonus compensation at the end of 2008-2009, even with the magnitude of losses, only served for an industry public relations nightmare.¹⁴

3.3 Dodd-Frank. So is *Dodd-Frank* the solution? One aspect of *Dodd-Frank* is to establish a systemic council that supposedly has the authority to shut banks down, coupled with enforcing a “living will” that banks supposedly have prepared in the case of their financial death. Does anyone really believe that a regulator/council will have the guts to “pull the trigger” and shut the bank down especially if this is the first time? We do not. It sounds great but remember—what is to stop lobbyists from going to Congress and asking for more time? Call us skeptical. We guess that the best way to curb excessive moral hazard exposure would be to minimize the risk that remains unpaid. That means bank officers and stockholders must feel more the pain of the losses. Debt-holders have to feel the pain as well. Yet, how to do this remains a question. We are not the first to write on this subject, so we may be plowing already furrowed ground when we suggest higher risk capital be required, along with convertible debt. Will this put American banks at a disadvantage? Perhaps, until banks spin off their investment subsidiaries. Once these are gone, then these newly formed hedge-funds can be regulated by more strict lending standards.

4. Conclusions

We believe that regulated imperfect markets with asymmetric information invariably lead to a high level of moral hazard that will ultimately lead to large levels of systemic risk. There is no regulation or set of rules that can eliminate this problem because, as the fable of *scorpion and frog* tells us, “it is in our nature,” to take something for free.

¹⁴ Approximately \$70B in bonus were paid in 2008, even though TARP had been approved to help bail out these same banks. See Bowers (2008).

The fundamental problem that still remains is how to get banks to pay for their risk-taking. Our belief would pursue a bifurcated approach: first, limit the systemic risk potential by limiting the notational value. This will also require an exchange to monitor the total exposure. Second, have banks more liable for losses by requiring more capital, having convertible debt and having senior management partially liable for losses.

Is it possible that the American financial system can adopt the necessary mechanisms in isolation from other major countries and their central banks? No, it must be a coordinated effort on the magnitude of the *Basel* banking rules. But these rules demonstrate how slowly and non-comprehensive this process can be. Even after more than twenty-years and three iterations, the rules are an incomplete patchwork of possible regulation.

Do we think the U.S. financial system will pursue these changes? No. That is why there will be another financial crisis. Banks will vigorously fight any attempt to provide transparency that could ultimately expose trading strategies. That is why a public exchange will not likely occur. During the summer of 2012, the state of Colorado suffered many major forest fires. Some of these were called “super fires,” given the major damage that ensued. Analysts attributed these events to a strategy that attacks smaller fires but does not eliminate the dead wood in the forest, which inevitably will become the fuel for a future fire. In many ways *Dodd-Frank* will suppress small financial crises but will not be able to suppress the major financial catastrophe because the necessary propellant/ingredient is still there—systemic risk.

References

Anonymous, "Number of the Week: Big Banks Gobble Up Market Share," *Wall Street Journal*, January 11, 2011.

Anonymous, "The Battle Over Too-Big to Fail Continues," *Wall Street Journal*, December 7, 2011.

Bowers, Simon, "Wall Street banks in \$70B staff payout," *The Guardian*, October 17, 2008.

Federal Reserve Bank of St. Louis, Economic Research, "5-Bank Asset Concentration for United States." Updated 2013-06-06.

Fisher, Richard W., "Ending 'Too Big to Fail': A Proposal for Reform Before It's Too Late (With Reference to Patrick Henry, Complexity and Reality)," "Remarks before the Committee for the Republic Washington, D.C., January 16, 2013.

Fisher, Richard W., and Rosenblum, Harvey, "How to Shrink the 'Too-Big-to-Fail,'" *Wall Street Journal*, March 11, 2013, p. A17.

Frost, Tom C., "The Big Danger with Big Banks," *Wall Street Journal*, May 15, 2012.

Greenspan, Alan, Address to the Joint Economic Committee of Congress, June 1999.

Jenkins, Holman W., "Yes, Let's 'Bail In' Depositors," *Wall Street Journal*, March 19, 2013.

Kroszner, Randall S. and Shiller, Robert J., *Reforming U.S. Financial Markets: Reflections Before and Beyond Dodd-Frank*, MIT Press, 2011, p. 41.

Lewis, Michael, "The Big Short: Inside the Doomsday Machine," W. W. Norton & Company, 2010.

McGillivray, Jennifer, Hung-Gay Fung, "The Need for Ethical Reform in the US Financial Industry," *International Review of Accounting, Banking and Finance*, Vol 5. No. 1, 2013.

Morris, Charles S., "What Should Banks Be Allowed to Do?" *Economic Review*, Kansas City Federal Reserve, Fourth Quarter, 2011.

Norbeg, Johan, "Financial Fiasco: How America's Infatuation with Homeownership and Easy Money Created the Economic Crisis," Cato Institute, 2010.

Reddy, Kalluru Siva, "Management Behaviour in Indian Commercial Banks," *International Review of Accounting, Banking and Finance*, Vol 3. No. 3, 2011.

Reilly, David, “An Antidote for the Too-Big-Bank Subsidy, *Wall Street Journal*, March 11, 2013, p. C6.

Sharpe, W. F., “A Simplified Model for Portfolio Analysis,” *Management Science*, January 9, 1963 (2) pp. 277-293.

Shen, Chung-Hua, Meng-Fen Hsieh, “Prediction of Bank Failures Using Combined Micro and Macro Data,” *International Review of Accounting, Banking and Finance*, Vol 3. No. 2, 2011.

Shiller, Robert J. “Reforming U.S. Financial Markets (with Randall Krosner), MIT Press, 2011.