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*Too Big to Fail?: Recasting the Financial Safety Net*¹

Steven L. Schwarcz²

Government safety nets in the United States and abroad focus, anachronistically, on problems of banks and other financial institutions, largely ignoring financial markets which have become major credit sources for consumers and companies. Besides failing to protect these markets, this narrow focus encourages morally hazardous behavior by large institutions, like AIG and Citigroup, that are “too big to fail.” This chapter examines how a safety net should be recast to protect financial markets and also explains why that safety net would mitigate moral hazard and help resolve the too-big-to-fail dilemma.

The real economy relies critically on the supply of liquidity in the form of credit.³ The subprime financial crisis, which has now devolved into a larger global financial crisis (collectively, the “subprime crisis”), “began in the credit markets, and eventually . . . will

¹ Copyright © 2009 by Steven L. Schwarcz. Portions of this chapter that derive in part from the author’s articles, *Systemic Risk*, 97 GEO. L.J. 193, 229 (2008), *Protecting Financial Markets: Lessons from the Subprime Mortgage Meltdown*, 93 MINN. L. REV. 373 (Dec. 2008), and *Complexity as a Catalyst of Market Failure*, are used with permission. Portions of this chapter also derive in part from the author’s keynote speech, *The Case for a Market Liquidity Provider of Last Resort*, at the NYU Law School symposium, “Modernizing the Financial Regulatory Structure,” held February 20, 2009 under the auspices of the NYU Journal of Law and Business.

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³ JOSEPH E. STIGLITZ & BRUCE GREENWALD, TOWARDS A NEW PARADIGM IN MONETARY ECONOMICS 142 (2003); MEIR KOHN, FINANCIAL INSTITUTIONS AND MARKETS 727 (1994).

end there.”⁴ Diminished credit harms the real economy because firms need credit to operate and grow and individuals need credit to buy homes and cars and to finance other expensive purchases.

Many think that the story of the credit crunch fundamentally is a banking story.⁵ Although there is now a severe lack of confidence in banks, the credit crunch predated and contributed to this lack of confidence; although the lack of confidence, in turn, is now making the credit crunch worse.

Securitization and Credit. The credit crunch started with the breakdown of securitization and other financial markets for debt. Securitization is a process whereby consumer financial assets (like mortgage loans, credit card receivables, and automobile loans) and corporate financial assets (like accounts receivable, lease rentals, and licensing fees) are financed through the issuance of debt securities backed by the financial assets.⁶ These securities—the most recognizable these days being securities backed by mortgage loans, or “mortgage-backed securities”—are sold to institutional investors in both U.S. and worldwide capital markets.⁷ I will refer, in a broad sense, to capital markets in which securitization and other debt securities are issued and traded as “securitization markets.”

Increasingly, corporate and consumer financing is originated not from banks per se or from bank deposits but from securitization markets. This shift—known as “disintermediation,” removing banks as intermediaries of funds⁸—can be very efficient.

⁴ Eric Dash & Vikas Bajaj, *In 2009, Economy Will Depend on Unlocking Credit*, N.Y. TIMES, Dec. 31, 2008, at [cite] (explaining that, because “credit is not flowing . . . , [c]rucial parts of the financial system have stopped functioning”).

⁵ Cf. Jack & Suzy Welch, *For a Fast-Acting Stimulus Plan . . .*, BUS. WK., Feb. 16, 2009, at 78 (stating that “Healthy banks are to economies as healthy hearts are to people: They keep them alive with the ‘lifeblood’ of credit”).

⁶ Steven L. Schwarcz, *The Alchemy of Asset Securitization*, 1 STAN. J. L. BUS. & FIN. 133 (1994).

⁷ Technically, these debt securities are non-recourse debt securities; they are payable primarily from the financial assets backing them.

⁸ *Systemic Risk*, *supra* note 1, at 200. Investors in securitization markets may include banks, but they are then acting as ultimate investors, not intermediaries.

By removing the middleman, it removes the middleman's (that is, the banks') profit mark-up.

When securitization markets broke down, however, companies and consumers were deprived of this major source of credit financing.⁹ Companies had difficulty borrowing and could not purchase inventory and make capital investments. Consumers had difficulty borrowing and could not purchase homes and automobiles. The lack of credit very directly impacted the real economy.¹⁰

This raises two fundamental questions: Why did securitization markets break down, and how should they be protected?

Why Markets Broke Down. Securitization markets broke down due to a systemic cascade of failures initially triggered by the historically unanticipated depth of the fall in housing prices.¹¹ Mortgage loans to risky borrowers were often made with the expectation of refinancing through home appreciation. When home prices stopped appreciating, these borrowers could not refinance. In many cases, they defaulted.

These “subprime” loan defaults in turn caused substantial amounts of low-investment-grade-rated mortgage-backed securities to default and AAA-rated securities to be downgraded. The defaults were especially large for ABS CDO securities—a class of securities backed indirectly by subprime mortgages and other assets—because of the leveraged sensitivity of these securities to underlying mortgage defaults.

⁹ See, e.g., Mortimer B. Zuckerman, *No Time to Lose*, U.S. NEWS & WORLD REP., Mar. 2009, at 80 (observing that securitization “once accounted for 70 percent of our credit while conventional bank lending has dropped to 30 percent. Unless financial firms can securitize debt and, in turn, rely on investors willing to buy [securities representing] the bundled loans, credit will remain extremely tight.”).

¹⁰ *Id.*

¹¹ The following account is based on Steven L. Schwarcz, *Understanding the ‘Subprime’ Mortgage Crisis*, forthcoming S. C. L. REV. (2009) (Keynote Address, Law Review

That, in turn, spooked investors who believed that “AAA” meant iron-clad safety and that “investment grade” meant relative freedom from default. Investors started losing confidence in ratings and avoiding securitization and other debt securities. Fewer investors meant that the price of these securities started falling. Falling prices meant that firms using these securities as collateral had to mark them to market and put up cash, requiring the sale of more securities, which caused market prices to plummet further downward in a death spiral. This death spiral appears to have been made worse by the high leverage of many firms. Encouraged by the earlier liquidity glut, many firms had borrowed excessively because the cost of funds was so cheap.

The refusal in mid-September 2008 of the U.S. government to save Lehman Brothers, and Lehman’s resulting bankruptcy, added to this cascade. Securitization markets became so spooked that even the highly-conservative asset-backed commercial paper segment virtually shut down. And the market prices of mortgage-backed securities collapsed substantially below the intrinsic value—essentially the present value of the expected value of the underlying cash flows¹²—of the mortgage loans backing those securities.¹³

This collapse in market prices meant that banks and other financial institutions holding mortgage-backed securities had to write down their value. That caused these institutions to appear more financially risky, in turn triggering concern over counterparty risk: afraid these institutions might default on their contractual obligations, many parties

Symposium on the Subprime Mortgage Crisis), available at http://ssrn/abstract_id=1288687.

¹² See Simon Gervais & Steven L. Schwarcz, “Valuation of Risky Cash Flows” (working paper on file with author) (discussing how to calculate the intrinsic value of risky cash flows). The expected value of the underlying cash flows could be estimated, as was done in an English High Court of Justice case involving the Orion Funding SIV in which I served as an expert witness, by examining the mortgage loans backing the securities and ascertaining which were subprime, which were prime, and which were delinquent or in default.

¹³ Cf. International Monetary Fund, *Containing Systemic Risks and Restoring Financial Soundness*, GLOBAL FIN. STABILITY REP. (Apr. 2008) (indicating that the market prices of

stopped dealing with them. This counterparty risk and concern over bank-asset values is what has caused the lack of confidence in banks. This lack of confidence is thus a consequence, not the cause, of the collapse in market prices.¹⁴

Existing Safety Nets Failed. Existing governmental safety nets, in the U.S. and abroad, failed to prevent this breakdown because they are structured to protect banks and other financial institutions, not financial markets per se. Indeed, until recently, the media—as well as most economists and other scholars who study systemic breakdowns—likewise have focused almost exclusively on banks. History and law help to explain this narrow focus. From an historical perspective, bank runs are the most visible symbol of the Great Depression. From a legal perspective, the Federal Reserve spearheaded U.S. government actions over the past year to address the spreading financial crisis. But the Federal Reserve’s mission is limited, under section 13(3) of the Federal Reserve Act, to act as a lender of last resort in “unusual and exigent circumstances” to banks and other financial institutions. Other governmental central banks have similarly limited missions.¹⁵

Such a narrow focus worked well when banks were the primary source of consumer and company financing. But as the subprime crisis reveals, disintermediation makes this narrow focus insufficient. Greater attention needs to be paid to the securitization markets. We would not today be facing a lack of confidence in banks if their mortgage-backed and other investment securities had maintained market value reasonably corresponding to their intrinsic value.¹⁶

How, therefore, can securitization markets be protected? Inherent in this question is the threshold normative question of whether securitization markets *should* be protected.

at least some mortgage-backed securities may be significantly below the expected present values of their future cash flows).

¹⁴ *Understanding the ‘Subprime’ Mortgage Crisis*, *supra* note 11.

¹⁵ [cite1]

¹⁶ *See supra* notes 13-14 and accompanying text.

Properly Utilized, Securitization is Efficient. Securitization effectively allocates risk with capital.¹⁷ It enables companies to access capital markets directly, in most cases at lower cost than the cost of issuing direct debt, such as bonds or commercial paper.¹⁸ It avoids middleman inefficiencies.¹⁹ It also helps to transform financial assets, such as loans, into cash for new extensions of credit (indeed, the breakdown of securitization markets led to the recent credit crunch).²⁰

These positives might be outweighed, however, by securitization's negatives revealed by the subprime crisis. There are several potential negatives: for example, the originate-to-distribute model of securitization might create moral hazard; securitization can create servicing conflicts; and securitization can foster overreliance on mathematical models.²¹

Regardless of whether securitization's benefits outweigh these negatives, there is no question that securitization is an efficient financing tool if these negatives are effectively addressed. And these negatives can be addressed by refocusing on basic securitization structures and asset types in order to attract investors, emphasizing cash-flow securitizations in which there are the traditional "two-ways out,"²² and avoiding highly complex securitization products like ABS CDO transactions which magnify leverage.²³ This view is shared by leading economists, such as Yale's Professor Gary Gorton who concludes:

There are no such issues [as occurred in the subprime crisis] with securitization generally, or with the use of off-balance sheet vehicles for the securitization of [other than subprime mortgage loan] asset classes. Other securitizations are not so

¹⁷ Steven L. Schwarcz, *The Future of Securitization*, 41 CONN. L. REV. (forthcoming issue no. 4, 2009) (symposium issue on The Subprime Crisis: Going Forward). *See also supra* notes 8-9 and accompanying text.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² Subprime mortgage securitizations had only one way out: home appreciation.

²³ *The Future of Securitization, supra* note 17.

sensitive to the prices of the underlying assets and so they are not so susceptible to bubbles.²⁴

The abuse of securitization may have contributed to the subprime crisis. By regenerating credit, however, securitization can also help get us out of it.²⁵

Protecting Securitization Markets. Return now to the question of how securitization markets can be protected. These markets are already subject to many prescriptive regulatory protections,²⁶ and more are likely to be imposed in response to the subprime crisis. I have recently argued, for example, that future financial regulatory reforms should be focused on three categories of market failures—conflicts, complacency, and complexity²⁷—as well as on a possible fourth category: a type of tragedy of the commons that also can give rise to systemic financial market failures.²⁸ History, however, has shown that financial markets evolve faster than regulation can adapt.²⁹ Moreover, even market participants themselves cannot always predict how markets may break down.³⁰

²⁴ Gary B. Gorton, “The Panic of 2007,” NBER Working Paper 14358 (2008), at 67. *See also id.* at 75 (concluding that “[s]ecuritization is an efficient, incentive-compatible, response to bankruptcy costs and capital requirements”); Ethan Penner, *The Future of Securitization*, WALL ST. J., July 10, 2008, at A15 (observing that “securitization will continue to play an important role—if adapted appropriately”).

²⁵ Zuckerman, *supra* note 9.

²⁶ By prescriptive regulation, I mean regulation that restricts behavior.

²⁷ Steven L. Schwarcz, *Protecting Financial Markets: Lessons from the Subprime Mortgage Meltdown*, 93 MINN. L. REV. 373 (2008). Running throughout these causes is a fourth cause, cupidity; but because greed is so ingrained in human nature and so intertwined with the other causes, it adds little insight to view it separately.

²⁸ Because the benefits of exploiting finite capital resources accrue to individual market participants whereas the costs of exploitation, which affect the real economy, are distributed among an even wider class of persons, market participants have insufficient incentive to internalize their externalities. Therefore, even in a simple financial system with no conflicts and hyper-diligent market participants (that is, a financial system with none of the causes of failure indicated *supra* note 27 and accompanying text), systemic risk is theoretically possible. *Understanding the ‘Subprime’ Financial Crisis*, *supra* note 11. For a general analysis of systemic risk, *see Systemic Risk*, *supra* note 1.

²⁹ *See, e.g.*, Henry T.C. Hu, *Misunderstood Derivatives: The Causes of Informational Failure and the Promise of Regulatory Incrementalism*, 102 YALE L.J. 1457, 1499 (1993) (explaining why regulators cannot keep up with development of complex financial

Prescriptive regulation, even if highly restrictive, therefore cannot always prevent market breakdowns.³¹ Markets need a safety net for when prescriptive regulation inevitably fails. Such a safety net can be provided by creating a market liquidity provider of last resort (hereinafter “market liquidity provider”) to help stabilize irrationally panicked financial markets—such as securitization markets in which the price of securities is falling significantly below their intrinsic value—thereby averting a downward price spiral that could trigger a systemic cascade.³²

Ideal markets would not need a market liquidity provider of last resort. If financial securities are underpriced, investors will step in immediately to buy them. Real markets, however, do not always work this way. In a panicked market, for example, private investors may not act rationally—as the subprime crisis has shown.³³ Individuals at investing firms also may not want to jeopardize their reputations (and jobs) by causing

products). [Also cite to Edward Kane’s work on “regulatory dialectic,” arguing that innovation has efficiency but it also gets around regulation, so regulatory responses lag.]

³⁰ *Complexity as a Catalyst of Market Failure*, *supra* note 1.

³¹ Moreover, highly restrictive regulation would create its own inefficiencies. Gerard Caprio, Jr., Ash Demirguc-Kunt, & Edward J. Kane, “The 2007 Meltdown in Structured Securitization: Searching for Lessons Not Scapegoats” 5 (Nov. 23, 2008 draft), available at www.ssrn/abstract_id=1293169 (observing that “a tightly regulated financial system hampers growth”).

³² *Cf.* Michael D. Bordo, Bruce Mizrach, & Anna Schwartz, NBER Working Paper Series (No. 5371), *Real Versus Pseudo-International Systemic Risk: Some Lessons From History* 19 (1995) (observing that financial panic will not usually become contagious when a lender of last resort provides adequate liquidity); *Complexity as a Catalyst of Market Failure*, *supra* note 1, at ___ (discussing how de-coupling systems through modularity helps to reduce the chance that a failure in one part of a complex system will trigger a failure in another part); *Systemic Risk*, *supra* note 1, at 204 (explaining the chain of systemic collapse).

³³ [cite example(s) of investor panic]

their firms to invest at a time when other investors have abandoned the market.³⁴ Empirical evidence confirms that individuals engage in this type of “herd behavior.”³⁵

Private investors are also risk averse,³⁶ and the fact that disclosure has become so complex that investors are uncertain how much securities are worth increases the perception, if not reality, of risk. Private investors also would have greater real risk if—as almost certainly would be the case—the size of their investment is insufficient to ensure market stabilization. They then face the risk that a continuing fall in market prices could systemically impact the real economy (such as by shutting down credit markets, as occurred in the subprime crisis), thereby jeopardizing even the intrinsic value of their purchased securities.³⁷ Furthermore, even if they are confident that the intrinsic value of the purchased securities exceeds the amount of their investment,³⁸ they may not want to risk having to wait until maturity of the securities to profit.³⁹

³⁴ See, e.g., Tyler Cowen, *It's Hard to Thaw a Frozen Market*, N.Y. TIMES, Mar. 23, 2008, at BU 5 (asking why, in the context of the subprime mortgage crisis, “asset prices don’t simply fall enough so that someone buys them and trading picks up again”; and answering: “why seek ‘fire sale’ prices when you might lose your job for doing so?”).

³⁵ Cf. Paul M. Healy & Krishna Palepu, *Governance and Intermediation Problems in Capital Markets: Evidence from the Fall of Enron* 26 (Aug. 15, 2002 draft, available at www.ssrn.com) (forthcoming in J. ECON. PERSP.) (observing that fund manager who estimates a stock is overvalued but does not act on this analysis “and simply follows the crowd” will not be rewarded for foreseeing the problems, “but neither will he be blamed for a poor investment decision when the stock ultimately crashes, since his peers made the same mistake”); Stephen M. Bainbridge, *Mandatory Disclosure: A Behavioral Analysis*, 68 U. CIN. L. REV. 1023, 1038 (2000) (discussing how herd behavior may have a reputational payoff even if the chosen course of action fails, and arguing that where “the action was consistent with approved conventional wisdom, the hit to the manager’s reputation from an adverse outcome is reduced”).

³⁶ JONATHAN BERK & PETER DEMARZO, *CORPORATE FINANCE* 69 (2007).

³⁷ If the real economy is impacted, quality and creditworthiness of the financial assets underlying the purchased securities may be reduced, as when a mortgagor loses her job.

³⁸ See *supra* note 12 and accompanying text (discussing intrinsic value).

³⁹ This risk is exacerbated if the market value of undervalued securities is still falling because investors then would not even break even on near-term resale of the securities.

A market liquidity provider with the financial ability to stabilize markets is needed to correct these market failures.⁴⁰

Operational Mechanics. A market liquidity provider should have the capacity to invest (or, as explained below, to hedge) sufficiently large amounts to stabilize markets and also, if necessary, to wait until final maturity of the securities in which it invests. Such an entity would likely have to be governmental,⁴¹ although it may well be able to obtain at least partial funding from the private sector.⁴²

There are at least two ways that a market liquidity provider could act. First, it could choose to purchase market securities, at a price deeply discounted from the original market price and also much lower than the estimated intrinsic value of the securities purchased⁴³ but still high enough to stabilize market prices above the panicked free-fall level. Say, for example, that the intrinsic value of a type of mortgage-backed securities (or “MBS”) is estimated to be in the range of 80 cents on the dollar. If the market price of

⁴⁰ [Articulate this also using industrial policy nomenclature, e.g., if government goes big and long enough, it can shift the multiple equilibrium. cite]

⁴¹ As a governmental entity, a market liquidity provider would bear at least superficial similarity to the U.S. Resolution Trust Corporation (RTC), created in 1989 to clean up the savings and loan (S&L) mess by buying troubled loans. The RTC, however, “is not a perfect parallel for today’s needs” for several reasons, including that it was created to clean up the mess years after it occurred, not necessarily (as this chapter also contemplates for a market liquidity provider) to minimize occurrence of the mess. *Beyond Crisis Management: Bold Ideas for Solving America’s Financial Mess*, ECONOMIST, Sep. 18, 2008, at [cite]. Nonetheless, the RTC is a helpful model insofar as it represents a credible and reasonably efficient model of a governmental entity purchasing troubled financial assets. See, e.g., Sudhir Nanda, James E. Owers, & Ronald C. Rogers, *An Analysis of Resolution Trust Corporation Transactions: Auction Market Process and Pricing*, 25 J. REAL ESTATE ECON. 271, 290 (1997) (concluding that mispricing of its purchases were not typical but occurred only in limited cases).

⁴² See *Systemic Risk*, *supra* note 1, at 226-27 (examining how to privatize the role of a market liquidity provider). Cf. *infra* notes 45-48 and accompanying text (proposing that a governmental market liquidity provider could stimulate private investment by entering into derivatives contracts to strip out risks that the market has the greatest difficulty hedging).

⁴³ See *supra* notes 12-13 and accompanying text (discussing intrinsic value).

those securities had fallen significantly below that number,⁴⁴ say to 20 cents on the dollar, the market liquidity provider could purchase these securities at, say, 60 cents on the dollar, thereby stabilizing the market and still making a profit. To induce a holder of the mortgage-backed securities to sell at that price, the market liquidity provider could, for example, agree to pay a higher “deferred purchase price” if the securities turn out to be worth more than expected.⁴⁵ This is just one (simplified) example of the flexible pricing approaches used in structured financing transactions to buy financial assets of uncertain value which could be adapted to a market liquidity provider’s purchases.⁴⁶

Alternatively, a market liquidity provider could attempt to stabilize the market by entering into derivatives contracts to strip out risks that the market has the greatest difficulty hedging—in effect, the market’s irrationality element—thereby stimulating private investment. By hedging—and not actually purchasing securities directly—the market liquidity provider would appear to be taking less investment risk, and thus its function may be seen as more politically acceptable.⁴⁷ The Obama Administration in the United States presently appears to be considering this latter type of public-private partnership approach in its revised financial bailout plan.⁴⁸

⁴⁴ Because markets normally can fluctuate widely, a market liquidity provider should be careful to act only when the market price of securities is falling significantly below their intrinsic value.

⁴⁵ In the subprime crisis, some types of MBS securities had become so complex that investors were uncertain how much they were worth. Steven L. Schwarcz, *Disclosure’s Failure in the Subprime Mortgage Crisis*, UTAH. L. REV. (forthcoming 2008-09) (symposium issue on the subprime mortgage meltdown), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1113034, at __.

⁴⁶ These flexible pricing approaches to buying financial assets of uncertain value include using special-purpose entities. See STEVEN L. SCHWARCZ, *STRUCTURED FINANCE, A GUIDE TO THE PRINCIPLES OF ASSET SECURITIZATION* § 4:10 (3d ed. 2002 & supplements) (discussing pricing approaches) and *id.* at § 7:3 (discussing the accounting standards governing these pricing approaches, including Financial Accounting Standard (FAS) No. 140). Purchases also could be coupled with taking equity or contingent equity, such as warrants.

⁴⁷ *Cf.* Floyd Norris, *U.S. Bank Bailout to Rely in Part on Private Money*, N.Y. TIMES, Feb. 9, 2009, at A1 (observing that having the government purchase the distressed MBS securities directly would be a “politically perilous course”).

⁴⁸ *Id.* (reporting that the revised bailout plan would likely depend in part on private investors, such as hedge funds, private-equity funds, and perhaps insurance companies,

It is essential, of course, that the market liquidity provider's price-setting and hedging be insulated from inevitable investor lobbying pressure to pay more than the securities are worth. Strict integrity not only would ensure fairness and give taxpayers a chance to profit but also would instill securitization markets with confidence in valuing these types of securities.⁴⁹

Costs and Benefits. These types of targeted market investments should generate relatively minimal costs, and certainly lower costs than those of a governmental lender of last resort to financial institutions—the traditional role of the U.S. Federal Reserve Bank and other central banks.⁵⁰ By providing a lifeline to financial institutions, a lender of last resort can foster “moral hazard” by encouraging these entities—especially those that believe they are “too big to fail”—to be fiscally reckless.⁵¹ These loans will also not be repaid if the institution eventually fails.

In contrast, a market liquidity provider, especially if it acts at the outset of a market panic,⁵² can profitably invest in securities at a deep discount from the original market

buying distressed MBS, with the U.S. Government guaranteeing a floor value to the securities purchased).

⁴⁹ *Cf. infra* note 63 (arguing that one rationale for buying MBS under TARP was to establish objective valuations of those securities). *Cf.* American Securitization Forum, Securities Industry and Financial Markets Association, Australian Securitisation Forum, & European Securitisation Forum, *Restoring Confidence in the Securitization Markets: A Global Initiative 7* (Dec. 3, 2008) (hereinafter “*Restoring Confidence*”) (recommending expanding and improving independent, third-party, sources of valuation for specified types of asset-backed securities).

⁵⁰ [cite for other central banks]

⁵¹ [Give recent examples, including AIG and Citigroup. cite]

⁵² The timing of purchases will be critical. The market liquidity provider should try to act at the outset of a market panic, before market prices collapse too far. *Cf. infra* notes 68-69 and accompanying text (observing that we may already be past a tipping point in the ability of market purchases alone to remedy the problem). On the other hand, the market liquidity provider should be careful not to act when price fluctuations are normal. *See supra* note 44.

price and still provide a “floor” to how low the market will drop.⁵³ Buying at a deep discount will mitigate investor moral hazard and also make it likely that the market liquidity provider will be repaid.⁵⁴

Furthermore, by focusing on markets, a market liquidity provider can minimize the too-big-to-fail dilemma of a lender of last resort to institutions. This is because, by stabilizing financial markets, the market liquidity provider will minimize the likelihood that institutions invested in those markets will ultimately fail, thereby reducing the times when a lender of last resort would be needed.⁵⁵ If in the subprime crisis, for example, the securitization markets had not broken down, institutions like Bear Stearns, AIG, and Citigroup would not have needed to be bailed out.⁵⁶ In economic terms, therefore, any safety-net subsidies created by a market liquidity provider of last resort will be much smaller than those created by a lender of last resort.⁵⁷

Funding Illiquidity. A market liquidity provider also could be used to address temporary problems of funding illiquidity. This might occur, for example, when a market

⁵³ See *supra* note 44 and accompanying text. The market liquidity provider, and therefore taxpayers, would profit by buying securities at a much lower price than their intrinsic value.

⁵⁴ *Systemic Risk*, *supra* note 1, at 229. Investor moral hazard can be further limited if the market liquidity provider adopts a policy of constructive ambiguity, not stating *ex ante* whether or not it will attempt to stabilize any given market panic and not indicating in advance the purchase price it would offer if it were to attempt to do so. *Id.* at 226-27. Investor moral hazard cannot be eliminated, however, because certain markets may be so important that investors can predict their stabilization with a high degree of certainty.

⁵⁵ [Explain this, possibly keying back to note 40, *supra*, as a “multiple equilibrium” effect. cite1]

⁵⁶ *Understanding the ‘Subprime’ Financial Crisis*, *supra* note 11. See also *supra* notes 13-15 and accompanying text (explaining that the collapse in market prices meant that banks and other financial institutions holding mortgage-backed securities had to write down their value, causing these institutions to appear more financially risky, in turn triggering concern over counterparty risk and causing the lack of confidence in banks).

⁵⁷ *Cf.* Caprio, Demirguc-Kunt, & Kane, *supra* note 31 (arguing that the goal of financial regulation and supervision is “to manage the [regulatory] safety net so that private risk-taking is neither taxed nor subsidized”); *id.* at 6 (arguing that, ideally, regulated parties should not have opportunities to “shift the deep downside of their risk exposures onto the [regulatory] safety net”).

for short-term investments becomes illiquid, threatening to undermine long-term investments that are funded by the short-term investments—such as investments in long-term financial assets, like bonds, funded by short-term asset-backed commercial paper issued by a securitization conduit.⁵⁸ In that case, to minimize moral hazard, the market liquidity provider should limit its financing to situations where market participants have reasonably used short-term funding to invest in long-term assets and the subsequent short-term market illiquidity is unexpected.⁵⁹

Application to the Subprime Crisis. A market liquidity provider could have at least mitigated the severity of the subprime crisis. If such an institution had existed at the outset of the crisis, it could have stepped in at that time to strategically purchase (or hedge) sufficient quantities of mortgage-backed securities to stabilize securitization markets, thereby deflecting the credit meltdown that ultimately impacted the real economy.⁶⁰

Early in the crisis, for example, the U.S. Treasury Department purchased mortgage-backed securities issued by Fannie Mae and Freddie Mac.⁶¹ As a result of these

⁵⁸ See *Complexity as a Catalyst of Market Failure*, *supra* note 1, at ___ (referencing Policy Statement on Financial Market Developments: The President’s Working Group on Financial Markets, 14 LAW & BUS. REV. AM. 447, 455-56 (2008) (suggesting that some 30% contraction of the ABCP market in the U.S. in 2007 was a factor contributing to the financial crisis)).

⁵⁹ *Complexity as a Catalyst of Market Failure*, *supra* note 1, at ___.

⁶⁰ See *supra* notes 11-14 & 55-57 and accompanying text. See also Testimony of Steven L. Schwarcz before the Committee on Financial Services of the U.S. House of Representatives, on “Systemic Risk: Examining Regulators’ Ability to Respond to Threats to the Financial System,” Oct. 2, 2007, available at http://www.house.gov/apps/list/hearing/financialsvcs_dem/ht1002072.shtml (explaining how a market liquidity provider of last resort would work). See also *Protecting Against Economic Shocks*, BALTIMORE SUN, Sept. 17, 2007; *Fed Must Also Guard Financial Markets*, [NEWARK] STAR-LEDGER, Sept. 17, 2007; *Markets, Systemic Risk, and the Subprime Mortgage Meltdown*, HUFFINGTON POST (posted March 18, 2008); *Systemic Risk Meets Subprime Mortgages*, Commentary, FORBES.COM (posted May 1, 2008). See also *supra* note 56 and accompanying text.

⁶¹ *How Three Economists View a Financial Rescue Plan*, N.Y. TIMES, Sept. 22, 2008, at C4 (describing this as “the first serious attempt by government to cure the underlying financial disease and not merely its symptoms”).

purchases, the “national average 30-year fixed mortgage rate [fell] a full percentage point, to just over 5 percent, setting off a huge refinancing boom.”⁶² These purchases did not, however, address the much larger—and more fundamental—problem of mortgage-backed securities that are not already effectively government-guaranteed.

The original Troubled Assets Relief Program, or “TARP,” under the Emergency Economic Stabilization Act of 2008 also contemplated government purchases of mortgage-backed securities, at least partly for the purpose of stabilizing market prices.⁶³ The intent was for a governmental entity to purchase mortgage-backed securities from banks and other financial institutions at a price above the collapsed “market” price but, hopefully, discounted from what the securities are intrinsically worth. This would effectively recapitalize these institutions with more transparently valuable assets (cash).⁶⁴

The TARP plan, however, ran into immediate political hurdles based on misunderstanding the distinction between market price and intrinsic value. Because the purchase price paid by the government would have to be above “market” to avoid even further counterparty write-offs, there was a populist perception that the government would be unjustifiably bailing out Wall Street.⁶⁵ Partly for these reasons, and partly because economists misjudged (in my opinion) the accounting and legal feasibility of purchasing securities directly,⁶⁶ TARP money was ultimately used mostly to purchase priority equity interests in troubled financial institutions. Those purchases did little,

⁶² Dash & Bajaj, *In 2009, Economy Will Depend on Unlocking Credit*, *supra* note 4.

⁶³ Cf. Alan S. Blinder, *Missing the Target With \$700 Billion*, N.Y. TIMES, Dec. 21, 2008, at BU 4 (arguing that the TARP’s rationales for buying MBS included establishing objective valuations and restarting the markets for these securities, thereby revitalizing mortgage finance).

⁶⁴ [cite]

⁶⁵ See, e.g., Mortimer B. Zuckerman, *We Deserve a Better Bailout*, U.S. NEWS & WORLD REP., Oct. 20, 2008, at 79 (arguing that buying the MBS at above-market prices “provides a huge, unjustified bailout of Wall Street” by “rescuing the financial industry from the consequences of its own misjudgments, profligacy, and greed”).

⁶⁶ [cite] to economists discussing the difficulty of pricing]

however, to stabilize market prices of the securities or to revitalize securitization markets.⁶⁷

If the TARP funds had in fact been used to purchase MBS, as originally contemplated, market prices might have stabilized.⁶⁸ If the government were now to attempt to use any remaining TARP funds to purchase MBS, however, it may be a case of “too little, too late.” By ignoring the breakdown of securitization markets for so long, the government may already have gone beyond a tipping point in the ability of market purchases alone to correct the problem. This is because the systemic impact of the credit crunch is shrinking the real economy and individuals are losing their jobs, making it more likely that obligors on assets backing even prime securities will default.⁶⁹ Stabilization is much easier to achieve at the outset of a market panic, before the panic becomes a self-fulfilling prophecy, cutting off credit and cratering the real economy.

This is not to say that even delayed market purchases of securities won't have some salutary effects. Recently, for example, the Obama White House announced that “the Treasury Department will continue to purchase Fannie Mae and Freddie Mac mortgage-backed securities to promote stability and liquidity in the marketplace.”⁷⁰ Similarly, the Term Asset-Backed Securities Loan Facility, or TALF, also contemplates investing government funds in certain consumer-asset-backed securities to reduce consumer financing costs, although its results are not yet known.

⁶⁷ Blinder, *supra* note 63 (arguing that using TARP funds to buy equity in banks, rather than MBS, “wasted a precious resource,” and likening such misuse to “another disaster” like the Iraq war and the response to Hurricane Katrina).

⁶⁸ *Cf. supra* note 63 and accompanying text (observing that MBS purchases under TARP were intended primarily for minimizing counterparty risk and only secondarily for stabilizing market prices).

⁶⁹ *Cf. Dash & Bajaj, In 2009, Economy Will Depend on Unlocking Credit, supra* note 4 (observing that “[i]n a struggling economy, even a seemingly solid loan can turn bad quickly”).

⁷⁰ Excerpt from White House announcement of the Homeowner Affordability and Stability Plan (Feb. 19, 2009).

Practical Concerns. The market-liquidity-provider concept raises several practical concerns. One such concern is whether holders of securities in panicked markets would be willing to sell their securities to a market liquidity provider if, as this chapter contemplates, the price offered is much lower than the intrinsic value of the securities but still much higher than prices in the collapsing market.⁷¹ Some holders, for example, may refuse to sell their securities if they have to mark down value on their financial statements.⁷² Some holders may even oppose creation of a market liquidity provider because, even if a given holder does not sell, mark-to-market accounting may require it to mark its securities down to market prices set by the market liquidity provider in its other purchases.⁷³ These concerns could be addressed, however, by applying (as this chapter contemplates) to those purchases of securities the same flexible pricing approaches used in structured financing transactions to purchase financial assets of uncertain value.⁷⁴

Failed governmental efforts to try to control their currency exchange rates might raise another concern: whether a market liquidity provider, even if governmental, would have sufficient spending power to stabilize irrationally panicked securitization markets. Only Hong Kong was able to control its currency exchange rate, and that was because its reserves, which implicitly included all of China's reserves, were large enough to be credible. There are important distinctions, though, between controlling a currency exchange rate and stabilizing irrationally panicked securitization markets. Controlling a currency exchange rate depends on all of the macroeconomic factors to which the country in question is subject whereas stabilizing panicked securitization markets depends mostly on factors specific to the securities in question. Also, because the market liquidity provider should consider acting only when a panicked market is so irrational that the market value of its securities is significantly below their intrinsic value,⁷⁵ the market liquidity provider should be able to stem the information asymmetry leading to this valuation differential by explaining the irrationality and, by buying (or hedging) at an

⁷¹ See *supra* notes 43-44 and accompanying text.

⁷² [Give example of this in the subprime crisis, such as banks refusing to sell. cite]

⁷³ [cite]

⁷⁴ See *supra* notes 45-46 and accompanying text.

⁷⁵ See *supra* notes 32 & 44 and accompanying text.

above-market price, putting its money where its mouth is. It effectively would be providing to investors in that market the same type of real credibility and comfort that a country's large reserves provide to currency investors.⁷⁶

A third practical concern is whether purchases by a governmental market liquidity provider could have inflationary effects or expose taxpayers to too much risk.⁷⁷ If, for example, a market liquidity provider obtains funds to purchase securities directly or indirectly from the Federal Reserve (or a foreign central bank), the government in effect might be printing money to make the purchases—which could be viewed as a form of “quantitative easing.”⁷⁸ That in turn could spark inflation.⁷⁹ Similarly, if the securities so purchased turn out to be poor investments, the government, and thus taxpayers, would suffer any consequences.

These concerns turn on the quality of the purchases made by the market liquidity provider. If its purchases are fairly priced—a goal I argue is feasible even if the securities

⁷⁶ Any analogy of the market-liquidity-provider concept to The Bank of Japan's failed attempt to support the Tokyo Stock Exchange's Nikkei index would also be inappropriate. The Nikkei is an index of shares of 225 companies selected to be representative of the Tokyo Stock Exchange as a whole and thus the price of those shares turns on a multitude of macroeconomic factors, including Japan's financial condition.

⁷⁷ Another practical concern, outside this chapter's scope, is that a market liquidity provider might become ineffective due to political pressures on what assets to buy and how to manage those assets. *Cf.* Luc Laeven & Fabian Valencia, [cite] (arguing that government-owned asset-management firms, in the U.S. and elsewhere, become ineffective due to political pressure).

⁷⁸ The term “quantitative easing” is ill defined, but it generally refers to any central bank policy that tries to affect financial markets through approaches other than directly controlling interest rates. Because a form of quantitative easing was first used, unsuccessfully, by the Bank of Japan in 2001 to fight deflation (*see, e.g.,* Mark M. Spiegel, *Did Quantitative Easing by the Bank of Japan “Work”?*, FRBSF ECON. LETTER No. 2006-28, Oct. 20, 2006), the term sometimes has a negative connotation.

⁷⁹ *See, e.g.,* Edmund L. Andrews & Jackie Calmes, *Fed Cuts Key Rate to a Record Low*, N.Y. TIMES, Dec. 17, 2008, at [cite] (reporting that other than controlling the federal funds rate, the Fed's tools—including those contemplated under TALF—would all “involve borrowing . . . by the Fed, which amounts to printing money in vast new quantities,” which could be “extremely inflationary”).

purchased have significant valuation uncertainty⁸⁰—the market liquidity provider, and thus taxpayers, will not lose money on the purchases. In that case, the purchases should not have significant inflationary effects because the market liquidity provider ultimately will be able to repay the central bank.⁸¹ The government, in other words, will merely have made a favorable investment.⁸²

Yet another practical concern is how effective a market liquidity provider would be in a market for securities that are not actively traded. Even without active trading, however, the market liquidity provider should at least set the floor-price standard.⁸³ Furthermore, even non-actively-traded securities are increasingly traded in virtual markets, such as the ABX.HE indices, which mimic active trading.⁸⁴

Finally, there may be concern whether the very existence of a market liquidity provider could, inadvertently, make falling markets even less stable. For example, parties anticipating market-liquidity-provider stabilization of a falling market might sometimes wait to invest in market securities, even if they believe the securities are undervalued, until they see the price offered by the market liquidity provider. Theoretically this should not occur, but the signal sent by a market liquidity provider might be so strong as to not only set a floor but also a ceiling on the market price. The extent to which this might occur cannot be predicted without empirical data.

International Dimensions. This chapter so far has discussed the concept of a national market liquidity provider. Financial markets, however, increasingly cross

⁸⁰ See *supra* notes 45-46 and accompanying text.

⁸¹ [Analyze more rigorously why repayment should alleviate inflationary concerns. cite1]

⁸² Even if the market liquidity provider occasionally makes poor investments, some inflationary effects or loss of taxpayer money are small prices to pay for avoiding larger consequences to the real economy. *Systemic Risk*, *supra* note 1, at [cite]. Cf. *id.* at 238 (examining applying a precautionary principle to the cost-benefit balancing).

⁸³ See *supra* note 53 and accompanying text.

⁸⁴ A potential investor could decide to invest in securities represented by one of the indices, such as ABS CDO securities and other asset- and mortgage-backed securities, without actually purchasing the underlying securities; the indices themselves simulate the risk and reward of trading in these securities. [cite]

national borders and are becoming interdependent.⁸⁵ That, in turn, has increased the global market's exposure to systemic risk.⁸⁶ There may well be a role for an international market liquidity provider of last resort (hereinafter, "international market liquidity provider").

Because this chapter's analysis of a national market liquidity provider is not necessarily tied to the United States or to any other country, the views already expressed in this chapter should be generically applicable. In an international context, however, three issues emerge: is a single regulatory approach to market liquidity desirable?; if so, is it feasible?; and who should act as the international market liquidity provider?

Whether a single regulatory approach to market liquidity is desirable has political ramifications beyond the scope of this chapter. I observe, however, that such an approach may be easier to adopt and administer in a global economy than country-specific regulation. It also may lessen the potential for a regulatory race to the bottom.⁸⁷ Assuming it is desirable, is it feasible?

⁸⁵ Jayati Ghosh, *The Economic and Social Effects of Financial Liberalization: A Primer for Developing countries* 9 (United Nations Department of Economic and Social Affairs, Working Paper No. 4, 2005) available at

http://www.un.org/esa/desa/papers/2005/wp4_2005.pdf ("[F]inancial liberalization creates exposure to the following kinds of risk: a propensity to financial crises, both external and internal; a deflationary impact on real economic activity and reduced access to funds for small-scale producers, both urban and rural. This in turn has major social effects in terms of loss of employment and more volatile material conditions for most citizens."); GERARD CAPRIO, PATRICK HONOHAN, & JOSEPH E. STIGLITZ, FINANCIAL LIBERALIZATION: HOW FAR, HOW FAST? 15–17 (2001) (observing that the liberalized financial markets "laid bare the previous inefficiencies and failures in credit allocation" and undermined efforts to value the true value of bank capital and the true risk of bank portfolios).

⁸⁶ RAHUL DHUMALE, JOHN EATWELL, & KERN ALEXANDER, GLOBAL GOVERNANCE OF FINANCIAL SYSTEMS: THE INTERNATIONAL REGULATION OF SYSTEMIC RISK 14 (2006).

⁸⁷ Cf. Elene Spanakos, *Note: Harmonization of International Adequacy Rules for Securities Firms: An Argument to Implement the Value At Risk Approach by Adopting Basle's Internal Model Methodology*, 26 BROOK. J. INT'L L. 221, 241–42, 244 (2000) (arguing that without international standards there will be a "race to the bottom" in regulatory schemes).

Given the diversity of approaches to financial regulation and supervision among nations, some commentators believe that any single regulatory model would be impractical.⁸⁸ The optimal regulatory model, they argue, must be customized for each country in accord with the structure and size of the country's financial system, its specific regulatory and supervisory objectives, and its unique historical evolution and political traditions.⁸⁹

These differences do not, however, appear to undermine the concept of an international market liquidity provider. There is nothing inherently country-specific about stabilizing financial market prices. Furthermore, political scientists and economists have observed that international cooperation is the natural and most effective response of states that share an interest in averting a common crisis that affects them individually—despite the many historical, cultural, and legal differences that distinguish nations.⁹⁰ Basel II, for

⁸⁸ See, e.g., David T. Llewellyn, *Institutional Structure of Financial Regulation and Supervision: The Basic Rules*, p. 7, Paper presented at a World Bank Seminar June 6th and 7th, 2006 available at: info.worldbank.org/etools/library/latestversion.asp?232743 (arguing that “[i]t is an illusion to believe there is a single, superior model of institutional structure that is applicable to all countries”); JAMES A. HANSON, PATRICK HONOHAN, & GIOVANNI MAJNONI, *GLOBALIZATION AND NATIONAL FINANCIAL SYSTEMS* 273-74 (2003).

⁸⁹ Llewellyn, *supra* note 88.

⁹⁰ See, e.g., James D. Fearon, *Bargaining, Enforcement, and International Cooperation*, 52 *INTERNATIONAL ORGANIZATION*, Spring 1998, at 271 (“Whether the goal is to control arms racing, reduce the risk of preemptive war, limit global environmental damage, stabilize exchange rates, or reduce protectionism in trade, state leaders . . . coordinate state policies and the actions of the relevant state bureaucracies . . . to gain various benefits of cooperating.”); RICHARD J. HERRING & ROBERT E. LITAN, *FINANCIAL REGULATION IN THE GLOBAL ECONOMY* 120–123 (1994) (suggesting systemic risk is analogous to epidemiological risk, in that both can be effectively resolved by international collaboration when “countries agree[] on how to act . . . [and their] cooperation advance[s] to the point of establishing an international agency and jointly financing international action to control and attempt to eradicate” the contagion); Edward J. Kane, *Government Officials as a Source of Systemic Risk in International Financial Markets*, in *REGULATING INTERNATIONAL FINANCIAL MARKETS: ISSUES AND POLICIES* 257–58 (Franklin R. Edwards & Hugh T. Patrick eds., 1992) (analogizing the global financial system to the interconnected subsystems of the human body and implying that just as the central immune system is the most efficient way to regulate the health of the body's many subsystems, so is a universal regulatory approach the most efficient means of regulating systemic financial risk).

example—whatever its faults—effectively illustrates that a single regulatory scheme for financial risk can be applied, at least in the banking context, across diverse national financial systems.⁹¹ Approximately 100 countries have signaled they will implement Basel II by 2010.⁹²

A single regulatory approach to market liquidity thus appears feasible. Who, then, could act as the international market liquidity provider? There are at least two obvious choices. One is the International Monetary Fund (IMF), which sometimes already takes on this role, albeit with controversy, in extending liquidity to troubled sovereign states. Another choice would be one or more national central banks, such as the U.S. Federal Reserve Bank or the European Central Bank.

Compare, for example, how the IMF and the Federal Reserve might function in an international-market-liquidity-provider capacity. An international market liquidity provider should ideally be able to advance funds in a widely-used international currency,

⁹¹ See Bank for International Settlements, *Basel II and Financial Institution Resiliency*, June 27, 2007, available at: <http://www.bis.org/press/p070627.htm%5D.>; IOANNIS S. AKKIZIDIS & VIVIANNE BOUCHEREAU, *GUIDE TO OPTIMAL OPERATIONAL RISK AND BASEL II*, 99–105 (2006).

⁹² Karen Krebsbach, *International-Rule Adoption May Harm Emerging Economies*, U.S. BANKER, April 2007, at 22 (“Already more than 100 countries have stated intentions to implement the Basel Capital Accord, known as Basel II.”); Memorandum from the Cent. Bank of Bahr., *Basel II Update (First Quarter, 2007)* (“Over 100 countries are committed to the implementation of Basel II, with implementation dates ranging from 2005 to 2010.”), available at http://www.cbb.gov.bh/cmsrule/media/pdf/policydevelopment/Consultations/Basel_II_Update_Q1_2007.pdf. The chairman of Basel II concedes, however, that implementing the accord will be extremely difficult. Peter Norman, *Basel II Chairman Says Rules Will Be Hard to Implement*, FIN. TIMES (London), Apr. 11, 2005. Some also argue that Basel II may actually prove counterproductive. See, e.g., DHUMALE, EATWELL, & ALEXANDER, *supra* note 86, at 263 (arguing that because the majority of developed nations will adopt some variation of Basel II, the G10 countries are likely to exert at least moderate pressure on developing nations to permit foreign banks to operate in their markets under Basel II, which in turn could have a disproportionate impact on the composition of credit risk in those jurisdictions and place foreign banks at a distinct advantage over local banks).

and the Federal Reserve is a source of U.S. dollars.⁹³ The IMF, in contrast, has no power to create currency. The Federal Reserve also may have an advantage in that it is, arguably, less bureaucratic than the IMF and thus capable of making quicker decisions.⁹⁴ Thus, the Federal Reserve (and, by analogy, the European Central Bank) appears to have a better institutional capacity than the IMF to act as an international market liquidity provider.

On the other hand, any national central bank (including the Federal Reserve or European Central Bank) acting as an international market liquidity provider would face possible conflicts of interest between its national and international responsibilities. The IMF, in contrast, is a truly international organization. Furthermore, through its access to member-state capital, the IMF can theoretically spread the burden of responding to international systemic risk.⁹⁵ The IMF cannot, however, create currency. It would not need that power if it has access to a potentially unlimited amounts of currency,⁹⁶ but such access would require reform of the IMF's relationship with its member-states.⁹⁷

There therefore is no clear choice who should act, as among existing institutions, as the international market liquidity provider.

⁹³ ROBERT KELEHER, JOINT ECONOMIC COMMITTEE, AN INTERNATIONAL LENDER OF LAST RESORT, THE IMF, AND THE FEDERAL RESERVE 178 (Comm. Print 1999) (arguing that the Federal Reserve Bank “has international reserve or money-creating powers and, accordingly, can act to satisfy increased demands for liquidity [and also] can act to create liquidity quickly via open market operations rather than through the slower, more cumbersome discount window mechanism,” though tying this argument in part to the U.S. dollar being the dominant reserve currency).

⁹⁴ *Id.* at 7 (the IMF “cannot create reserves or international money, cannot act quickly enough to serve as an international LOLR, and does not operate in a transparent manner. Further, IMF lending currently (indirectly) serves to bail out insolvent institutions, something wholly inappropriate for an international LOLR.”).

⁹⁵ Tobias Knedlik, *Implementing an International Lender of Last Resort* 26 (Halle Inst. for Econ. Research, IWH-Discussion Paper No. 20, 2006) (describing the IMF's substantial access to capital from more than 20 member states).

⁹⁶ *Id.* at 8 (“In the case of a global crisis . . . almost unlimited reserves would be necessary”).

⁹⁷ *Id.* at 26 (discussing how the IMF could obtain “quantitatively unlimited” access to member-state funds).

Conclusions. With the rise of disintermediation, financial markets have significantly replaced banks as sources of credit. Financial markets, however, can break down for unexpected reasons. Prescriptive regulation cannot always deter these breakdowns.

Financial markets need a safety net for when prescriptive regulation inevitably fails. Existing governmental safety nets, in the U.S. and abroad, are insufficient because they are structured to protect banks and other financial institutions, not financial markets per se.

This chapter proposes that a market liquidity provider of last resort could function as a safety net, stabilizing irrationally panicked financial markets to avert a systemic downward price spiral. This function should generate relatively minimal costs, and certainly lower costs than generated by existing safety nets which focus on governmental central banks as lenders of last resort to banks and financial institutions. Existing safety nets can foster moral hazard and give rise to significant taxpayer losses when institutions are deemed too big to fail.

I do not propose that existing safety nets be discarded. This chapter's conception of a market liquidity provider of last resort would supplement, not replace, a lender of last resort. The combination, however, would be synergistic: by stabilizing financial markets, a market liquidity provider not only would preserve credit but also would minimize the likelihood that institutions invested in those markets will ultimately fail—thereby reducing the times when a lender of last resort would be needed.

Finally, I want to emphasize that this chapter's market-liquidity-provider concept does not contemplate indiscriminate purchases of illiquid securities. Such purchases not only would foster moral hazard for parties that sell or invest in those securities, it also would waste taxpayer money on poor investments. This chapter only contemplates the market liquidity provider acting when market prices collapse substantially below the

intrinsic value of the securities, as in a panic.⁹⁸ In contrast, if prices in the collapsing market accurately reflect intrinsic value, the market should be left to fail. If that failure triggers a panic that happens to cause a more intrinsically sound financial market to collapse or to cause an otherwise-sound financial institution to fail, the market liquidity provider could then decide to protect that sound market, and any applicable lender of last resort could then decide to protect that institution.⁹⁹

⁹⁸ See *supra* notes 32 & 43-49 and accompanying text.

⁹⁹ In order to be able to differentiate between these circumstances—as well as to differentiate normal market fluctuations—a market liquidity provider would monitor and analyze securities markets on an ongoing basis. Its staff therefore should have the requisite expertise and experience to do so.