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FOREWORD

IT is with great pleasure that I place before you the very first edition of RGNUL Financial and Mercantile Law Review. This law review was an endeavor on our part to better understand the financial market regimes of India and South East Asia and to promote discourse between academia in India, the West and South East Asia. We also sought to engage with the legal industry in India and wanted to lend our pages to their thoughts and opinions, so that we could better understand what the industry needs.

Needless, to say turning out the first edition has been a mammoth challenge but also, a very rewarding one. We got to engage with academicians all over the world who were encouraging and helpful to say the least and many went out of their way to help us and to contribute to our endeavor.; special thanks goes out at this point in time to our advisory board who associated with us not and lent their name to our enterprise and without whom this review would have been dead at its very inception. We would also like to thank our referees and contributors whose commitment to this review was inexorable in making this review see the light of the day.

The First edition deals with an interesting mix of issues. We have Prof. Sangroula writing about how economic and social rights are a salient and significant part of human rights and how law and development interplay. Then we have Prof. Haskell who writes a riveting note on TWAIL (Third World Approaches to International Law). Also, Bharat Budholia writes in on emerging trends in Competition law in India and we reproduce a paper Prof. Steven L Schwarcz Presented on Shadow Banking in Emerging economies. Also, Prof. Jonnalagadda presents an interesting take on the proposed Indian Financial Code, an attempt at streamlining financial laws in India.

We hope the review makes for an interesting read and we would love to hear your opinions on how we can make it better. Please feel free to write in to us.

Dr. Anand Pawar

Editor-in-chief

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SHADOW BANKING, FINANCIAL RISK, AND REGULATION IN CHINA AND OTHER DEVELOPING COUNTRIES[*]

Steven L. Schwarcz[**]

Shadow banking is growing rapidly in a number of developing countries, including China where it recently was estimated at around 20 trillion yuan (which is approximately a third the size of China's bank-lending market).[1] *The shadow banking sector in these countries is typically weakly regulated, yet the growth of the sector is thought to pose risks to financial stability. Additional regulation therefore may be needed. Any such regulation, however, should attempt to strike a balance between reducing that risk and preserving shadow banking as an important channel of alternative funding to developing economies, particularly in the face of significant retrenchment by large banks that had dominated the credit supply.*

 This paper is based in part on portions of my article, *Regulating Shadow Banking*, 31 BOSTON UNIVERSITY REVIEW OF BANKING & FINANCIAL LAW 619 (2012) (also available at http://ssrn.com/abstract=1993185).

[**] Stanley A. Star Professor of Law & Business, Duke University School of Law, and Founding Director, Duke Global Capital Markets Center; schwarcz@law.duke.edu. I thank Maxwell Watson and participants in a seminar at The Global Economic Governance Programme, University College, University of Oxford, for helpful comments and Jonathan E. Cote and Liu Xiaoli for valuable research assistance.

[1] *See In China, Hidden Risk of "Shadow Finance"*, WALL ST. J., Nov. 26, 2012, also available at http://online.wsj.com/article/SB10001424127887324712504578133053914208788.html?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+wsj%2Fxml%2Frss%2F3_7013+(WSJ.com%3A+What's+News+Asia) (reporting an estimate by Sanford C. Bernstein & Co.). More recent estimates suggest that the number may be as high as 30 trillion yuan (*see* Yi Xianrong, *Shadow Banking Rampant in China*, CHINA.ORG.CN (Jan. 27, 2013), available at http://www.china.org.cn/opinion/2013-01/27/content_27775060.htm) or even 36.8 trillion yuan (*see* David Barboza, *Loans Practices of China's Banks Raising Concern*, N.Y. TIMES, July 1, 2013)—the latter figure being "69 percent of China's gross domestic product" (*id.*, referencing a report released in May 2013 by JPMorgan Chase).

I. WHAT IS SHADOW BANKING?

Shadow banking is a loose term that refers to the provision of financing outside of traditional banking channels.[2] Estimated at $67 trillion worldwide,[3] shadow bank financing appears to dwarf traditional bank financing.[4]

There are many ways to provide financing outside of traditional banking channels. Structured finance and securitization, for examples, raise financing indirectly through the capital markets using special purpose entities ("SPEs") such as asset-backed commercial paper (ABCP) conduits and structured investment vehicles (commonly known as SIVs).[5] The term shadow banking also includes the provision of financing by finance companies, hedge funds, money market mutual funds, non-bank government-sponsored enterprises, securities lenders, and investment banks. The term even includes the provision of financing by banks using non-traditional means. For example, banks sometimes create and derive fee income from SPEs, ABCP conduits, and SIVs. Banks also are important players in repo markets.

II. SHADOW BANKING IN CHINA

Shadow banking is increasingly important in China, especially as a source of funding to small and medium-sized enterprises ("SME"s), including entrepreneurial start-up companies. The superficial reason is that Chinese banks are not extending as much credit to SMEs, focusing instead on lending to large Chinese companies and also investing abroad. SMEs therefore must seek other financing sources.

At least in part, this trend may reflect the unintended consequence of Chinese regulatory policy. Chinese banking law limits bank-loan profits to percentages of the loan,[6] which makes small and

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[2] Chinese regulators appear to follow this same definition. *See, e.g.*, Xiao Gang, *Regulating Shadow Banking*, CHINA DAILY (Oct. 12, 2012) (writing that "[s]hadow banking can broadly be described as the system of credit intermediation involving entities and activities outside the regular banking system"). Xiao Gang is the chairman of the Board of Directors of Bank of China.

[3] Financial Stability Board, Global Shadow Banking Monitoring Report (Nov. 18, 2012) (estimating shadow banking's worldwide assets in 2011).

[4] Zoltan Pozsar et al., Federal Reserve Bank of New York Staff Reports, No. 458: Shadow Banking Abstract, 4-5 (2010).

[5] For an introduction to structured finance and securitization in the context of China, *see* Steven L. Schwarcz, *Securitization, Structured Finance, and Covered Bonds* (2012), available at http://ssrn.com/abstract=2182597.

[6] *Cf.* Michael F. Martin, *China's Banking System: Issues for Congress*, CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, 10 & n. 24 (Feb. 12, 2012), *available at* http://www.fas.org/sgp/crs/row/R42380.pdf

medium-sized loans much less attractive than large loans.[7] The trend might also reflect the higher risks of SME lending, which sometimes exceed current banking lending standards.[8]

The resulting alternative financing arrangements are deemed part of China's shadow banking sector. Although much less diversified and complex than in the United States, participants in these arrangements include corporate-style entities such as property-development trusts[9] as well as individuals involved in more interpersonal lending through credit associations, rural cooperative foundations, and even pawnshops.[10] Peer-to-peer business lending is also becoming common, in which companies lend to other companies, sometimes arranged through banks.[11] Equipment-lease financing is increasing, sometimes arranged through the leasing subsidiaries of state-owned banks.[12] Accounts receivable factoring is also increasing in importance, to provide liquidity to

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("Historically, the [People's Bank of China] has maintained a roughly 3% range between comparable deposit and loan benchmark rates, thereby insuring banks approximately a 3% gross profit margin.").

[7] The People's Bank of China may now have removed the limitation on bank lending rates, except regarding certain loans (such as residential mortgage loans). E-mail from Liu Xiaoli, Associate at the Zhong Lun Law Firm in Beijing and Duke Law School LL.M. Class of 2013, to the author, May 6, 2013.

[8] *Cf.* E-mail from Liu Xiaoli, Associate at the Zhong Lun Law Firm in Beijing and Duke Law School LL.M. Class of 2013, to the author, Nov. 11, 2012 (observing that China's banking industry has strict loan underwriting standards, and SMEs often cannot provide sufficient collateral to satisfy these standards). Ms. Liu nonetheless also observes that, in recent years, the State Council and financial regulators have been actively encouraging SME financing; as a result, some banks have been expanding their SME loan business. *Id.*

[9] *See Shadow Banking Looms Over China*, REUTERS, Sept. 28, 2012, *available at* http://www.reuters.com/article/2012/09/28/china-trusts-banking-idUSL4E8KS50J20120928 (reporting the rise of trusts in China, and particularly their exposure to the "property, infrastructure, and financial sectors"); *see also*, DELOITTE TOUCHE TOHMATSU LIMITED, CHINA REAL ESTATE INVESTMENT HANDBOOK, 51 & 81 (2012), *available at* http://www.deloitte.com/assets/Dcom-China/Local%20Assets/Documents/Industries/Real%20estate/cn_RE_REIH2012_130312.pdf. (quoting the OECD definition of a REIT as a "widely held company, trust or contractual or fiduciary arrangement that derives its income primarily from long-term investment in immovable property (real estate), distributes most of that income annually and does not pay income tax on income related to immovable property that is so distributed.").

[10] Kellee S. Tsai, Back-Alley Banking: Private Entrepreneurs in China 39 (2002).

[11] *See China Slowdown Stymies Plan to Curb Shadow-Banking Risks*, BLOOMBERG NEWS, July 17, 2012, http://www.businessweek.com/news/2012-07-16/slowdown-threatens-curbs-on-shadow-banking#p2 ("Shadow banking, including loans changing hands between friends, families and companies seeking capital as well as the off-balance-sheet business of lenders and trust companies, totals as much as 15 trillion yuan ($2.4 trillion), about one-third the size of China's official loan market"). Many peer-to-peer sites exist that allow small businesses to access loans from individuals and other businesses. *China Shadow Bankers Go Online as Peer-to-Peer Sites Boom*, BLOOMBERG NEWS, July 24, 2012, http://www.bloomberg.com/news/2012-07-23/china-shadow-bankers-go-online-as-peer-to-peer-sites-boom.html. Incongruously, peer-to-peer lending among enterprises is technically illegal (and thus risky for lenders) under Chinese financial regulatory law. E-mail from Liu Xiaoli, *supra* note 7. Nonetheless, courts often enforce lenders' repayment claims for principal and, to the extent not exceeding comparable bank deposit interest rates, interest. *Id.*

[12] *Cf.* Jonas Alsen, *An Introduction to Chinese Property Law*, 20 MD. J. INT'L L. & TRADE 1, 38 (1996) (describing financial lease terms in China).

vendors of goods.[13] As with securitization, factoring additionally enables those vendors to allocate risk on the receivables to third parties (in the case of factoring, those third parties are the "factors" who provide the financing), enabling vendors to quantify their repayment risk. Risk allocation is increasingly critical because receivables are becoming increasingly delinquent in payment.[14]

China's shadow banking sector also includes the provision of financing by banks, using non-traditional means.[15] Commercial banks, for example, provide wealth management plans to their customers, as investors. Customers entrust funds with their bank and join the plan; the bank uses the entrusted funds to invest in a pool of securities—functionally no different than an investment in a mutual fund. Wealth management plans have grown rapidly, estimated at 12 trillion yuan in the third quarter of 2012 compared to just 8.5 trillion yuan the year prior.[16] From an investor standpoint, the reason for this growth appears to be risk aversion: investors believe, rightly or wrongly, that wealth management plans provided by banks are safe because of banks' implicit guarantees.[17] From a bank standpoint, the reason for this growth appears to be regulatory arbitrage: it enables banks to avoid regulation that limits, among other things, their loan-to-deposit ratios.[18]

The changing details of China's shadow banking sector are less important, however, than the fact that it—like the shadow banking sector outside of China—reflects non-bank, or at least non-traditional-bank, intermediated financing.[19]

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[13] Factors Chain International, *Total Factoring Volume by Country in the Last 7 Years* (last visited Nov. 8, 2012), http://www.fci.nl/about-fci/statistics/total-factoring-volume-by-country-last-7-years (showing the rapid growth of Chinese factoring volume to become one of the largest factoring markets in the world).

[14] Hu Xuwei & Lin Xiaozhuan, The Causes and Risk Management of SME's Accounts Receivable *Based on Information Asymmetry*, 212 (2009), http://www.seiofbluemountain.com/upload/product/200911/2009zxqyhy03a24.pdf (observing the high total volume, as well as the high default rates, of Chinese accounts receivable).

[15] *Cf. supra* notes 5-6 and accompanying text (observing that the term shadow banking even includes the provision of financing by banks using non-traditional means).

[16] Wang Xiaotian, *Banks' Wealth Management Products Have Growing Risks: Fitch*, CHINA DAILY, Dec. 05, 2012, available at http://www.chinadaily.com.cn/china/2012-12/05/content_15989924.htm.

[17] E-mail from Liu Xiaoli, Associate at the Zhong Lun Law Firm in Beijing and Duke Law School LL.M. Class of 2013, to the author (Apr. 16, 2013). *See also* Edward Chancellor, *China Crunch Shows Financial Fragility*, FINANCIAL TIMES, July 1, 2013, at 20 (observing that "Many [Chinese wealth management products] are kept off the balance sheets of the banks although it is widely understood that banks will make good any losses to investors.").

[18] E-mail from Liu Xiaoli, *supra* note 17. *See also* Cai Zhen, *The Features, Manifestations and Causes of the Chinese Shadow Banking System*, 11 CHINESE BANKER (2012), available at http://ifb.cass.cn/show_news.asp?id=51623.

[19] *Cf.* Paul Tucker, Deputy Governor, Financial Stability, Bank of England, Remarks at a BGC Partners Seminar: Shadow Banking, Financing Markets and Financial Stability (Jan. 21, 2010), *available at*

III. SHADOW BANKING IN OTHER DEVELOPING COUNTRIES

I investigated shadow banking in China in connection with a series of lectures I gave there in December 2012.[20] My understanding of shadow banking in developing countries outside of China ("other developing countries") is much more limited. Nonetheless, some general observations can be made.

Although banks still dominate the financial sector in most other developing countries, shadow banking is on the rise.[21] In those countries, however, shadow banking is "less about long, complex, opaque chains of intermediation and more about being weakly regulated or falling outside the regulatory sphere altogether."[22]

For example, the main shadow banking players in other developing countries tend to be "finance, leasing, and factoring companies; investment and equity funds; insurance companies; pawn shops; and underground entities."[23] These players overlap significantly with Chinese shadow banking market participants.[24]

IV. SHOULD SHADOW BANKING BE REGULATED?

Shadow banking tends to be much less regulated than traditional banking.[25] This inevitably means that shadow banking is, to some extent, driven by regulatory arbitrage.[26] But that does not necessarily mean that shadow banking should be subjected to more regulation. It sometimes might mean, for example, that traditional banking should be subject to less regulation. This alternative approach would have particular salience when traditional banking is subject to ill-inspired regulation that drives regulatory arbitrage, such as China's banking law limits on bank-loan

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http://www.bankofengland.co.uk/publications/speeches/2010/speech420.pdf (observing that we may "confront new variants of shadow banking in the future").

[20] Even in that context, however, my investigation was limited to conversations with Chinese financial regulatory experts as well as research of the relevant literature.

[21] Swati Ghosh, Ines Gonzalez del Mazo, & İnci Ötker-Robe, *Chasing the Shadows: How Significant Is Shadow Banking in Emerging Markets?*, The World Bank (Sep. 2012), at 2-3, *available at* http://siteresources.worldbank.org/EXTPREMNET/Resources/EP88.pdf.

[22] *Id*. at 3-4.

[23] *Id*. at 2.

[24] *See supra* notes 9-13 and accompanying text (indicating an overlap for pawnshops, investment funds, leasing companies, and factoring companies).

[25] Since 2010, however, the China Banking Regulatory Commission (CBRC) has begun to address regulatory arbitrage concerns, such as by imposing net capital regulations on trust companies (requiring them to maintain sufficient net capital to cover their potential business risks). E-mail from Liu Xiaoli, *supra* note 8.

[26] *Cf*. Ghosh et al., *supra* note 21, at 3 (observing that regulatory arbitrage "played a role in the growth of (unregulated) shadow banking [in] China, Bulgaria, Croatia, and Romania").

profits.[27] The determinative issue is thus the consequences of the regulation. In deciding how to regulate shadow banking, it additionally is important to acknowledge that shadow banking has the potential to increase economic efficiency but also to increase risk.[28] Consider each in turn.

Increasing Economic Efficiency. Shadow banking can increase efficiency through disintermediation and decentralization. Disintermediation refers to the distinguishing feature of shadow banking: providing financing outside of traditional banking channels.[29] This helps companies avoid having to pay the profit markup that intermediary banks would otherwise charge on traditional products, such as loans. That reduction in cost can increase economic efficiency.

Shadow banking can additionally increase efficiency by diversifying, and thus decentralizing, the provision of financial products and services. This can increase consumer welfare, for example, by allowing investors to tailor financial portfolios to their own preferences. Consumer welfare can also be increased by serving underserved constituents, such as shadow banking's providing financing to underserved SMEs in China.[30] A decentralized financial system may also be more robust in the face of negative shocks. To the extent decentralization helps to reduce the size of firms, it also can mitigate the "too big to fail" problem.

Increasing Risk. But decentralization can also increase risk. For example, it may be relatively harder to control market failures, or there could be more such failures. Decentralization might also make it more difficult for market participants to effectively process information, allowing risks to accumulate unnoticed and unchecked. When hidden risks suddenly become apparent, market participants can panic[31]; and panics can trigger systemic risk.[32]

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[27] *See supra* notes 6-7 and accompanying text. *Cf.* Chancellor, *supra* note 17 (observing that a "collapse in the supply of credit . . . can also arise as a result of regulatory actions").

[28] *Cf.* Ghosh et al., *supra* note 21, at 2 (observing that it "is generally agreed that financial intermediation through nonbank channels [i.e., shadow banking] provides some benefits, and hence can constitute a useful part of the financial system").

[29] *See supra* note 2 and accompanying text.

[30] *See supra* note 6 and accompanying text.

[31] Daniel Awrey, Complexity, Innovation and the Regulation of Modern Financial Markets, 2 HARVARD BUSINESS LAW REVIEW 235 (2012).

[32] Panics often serve as a trigger that can commence a chain of systemic failures. Steven L. Schwarcz, *Systemic Risk*, 97 GEORGETOWN LAW JOURNAL 193, 214 (2008).

Another risk closely associated with, although not at all unique to, shadow banking[33] is the short-term funding of long-term capital needs, such as occurs when SPEs issue short-term securities (like commercial paper) to fund long-term projects.[34] This can increase risk by creating liquidity discontinuities (what economists sometimes call maturity transformation), which can have potentially systemic consequences. In traditional banking, this is labeled the risk of a "bank run." Economists argue that equivalent types of liquidity discontinuities in shadow banking "played a central role in transforming concerns about the credit quality of mortgage-related assets into a global financial crisis."[35]

Additionally, because non-bank shadow banking participants are unregulated or lightly regulated compared to banks, they might be more likely to fail than banks. Their failures could impact traditional banking to the extent shadow banks and traditional banks have contractual (or other) interrelationships.[36]

Shadow banking thus can operate as a double-edged sword, increasing both efficiencies and risks. The challenge for regulation is to minimize those risks while maximizing (or at least not significantly impairing) those efficiencies.

A. Regulation Focused on Maximizing Economic Efficiency

Regulation can maximize economic efficiency by correcting "market" failures. At least four types of partly interrelated market failures can occur within the shadow banking sector: information failure, rationality failure, principal-agent failure, and incentive failure.[37] None of these failures is unique to shadow banking, but all can be exacerbated by shadow banking's complexity.

1. *Information Failure*

[33] Traditional banks, for example, typically fund themselves through short-term deposits and use the proceeds to make long-term loans.

[34] *See supra* note 5 and accompanying text (discussing ABCP conduits and SIVs, which do this). *See also* Ghosh et al., *supra* note 21, at 3 (observing that "many, if not most, [shadow banks] fund themselves through short-term or callable deposit-like liabilities").

[35] *See, e.g.*, Daniel Covitz, Nellie Liang & Gustavo Suarez, *The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market*, Fed. Reserve Bd. Finance and Discussion Series, #2009-36 (2009), at 16, *available at* http://www.federalreserve.gov/pubs/feds/2009/200936/200936pap.pdf (examining the inability of many ABCP conduits to roll over their short-term commercial paper in the last five months of 2007).

[36] Even given such interrelationships, however, it is unclear whether the decentralization of shadow banking actually reduces systemic risk on a net basis; a shadow bank may well be more likely to fail than a traditional bank, but the failure of a shadow bank is less likely to systemically impact traditional banking.

[37] *Regulating Shadow Banking*, *supra* note **Error! Bookmark not defined.**.

Shadow banking can be complex and arguably is becoming more complex as economies develop.[38] Although disclosure always will remain important and necessary,[39] complexity limits disclosure's ability to achieve meaningful investor transparency.[40] A question, therefore, is whether regulators should try to simplify or standardize shadow banking to minimize its complexity. Currently, this question may be more critical in the United States and other developed countries where shadow banking is especially complex.[41]

2. *Rationality Failure*

Humans have bounded rationality. And the more complex something is, the more we tend to focus on the simpler and more straightforward elements with which we're familiar. We also tend to believe what we want to believe.

Shadow banking increases complexity. As a result, market participants sometimes act even more irrationally. For example, investors were prepared to believe, based on mathematical models they did not fully understand, that the investment-grade rated securities issued in highly complex second-generation securitization transactions,[42] offering much higher returns than other similarly rated securities, represented good investments even though they were at least partly backed by subprime mortgage loans.

3. *Principal-Agent Failure*

Conflicts of interest between managers and owners of firms are widely studied. At least in the shadow banking sector, I believe the more serious conflict is *intra-firm*: secondary managers, such as analysts, are almost always paid under short-term compensation schemes, misaligning their interests with the long-term interests of the firm.[43] This intra-firm principal-agent failure is not

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[38] *Cf. supra* notes 21-22 and accompanying text (observing a correlation between the complexity of shadow banking and developed economies).

[39] *Cf.* Global Shadow Banking Monitoring Report, *supra* note 3 (arguing for more transparency).

[40] Steven L. Schwarcz, *Disclosure's Failure in the Subprime Mortgage Crisis*, 2008 UTAH LAW REVIEW 1109, also available at http://ssrn.com/abstract_id=1113034; Steven L. Schwarcz, *Rethinking the Disclosure Paradigm in a World of Complexity*, 2004 UNIVERSITY OF ILLINOIS LAW REVIEW 1 (2004), also available at http://ssrn.com/abstract=336685.

[41] *Cf.* Ghosh et al., *supra* note 21, at 3 (observing that in emerging market and developing economies, "the shadow banking sector is relatively simple, given the [lower] level of sophistication of financial markets and instruments").

[42] These transactions included securitizations of collateralized-debt-obligation securities, or "ABS CDO" transactions.

[43] Steven L. Schwarcz, *Conflicts and Financial Collapse: The Problem of Secondary-Management Agency Costs*, 26 YALE JOURNAL ON REGULATION 457 (2009); also available at http://ssrn.com/abstract_id=1322536.

unique to shadow banking; but the complexity of shadow banking, combined with the technology that enables it, can exacerbate the failure. For example, the complexity of shadow banking motivated senior manager reliance on the imperfect value-at-risk, or VaR, model for measuring investment-portfolio risk, thereby enabling conflicted secondary managers to propose dangerous investment products, like credit default swaps, which had low VaR risk profiles.[44]

4. *Incentive Failure*

Technology has enabled the shadow banking sector to finely disperse investment risk. In theory, that could be beneficial. But risk can sometimes be marginalized by becoming so widely dispersed that rational market participants individually lack the incentive to monitor it.[45]

Summary: Shadow banking regulation should focus on maximizing shadow banking's potential to increase efficiency and minimizing its potential to increase risk. I have so far discussed regulation focused on maximizing economic efficiency by correcting market failures. Regulation can help to control, but it cannot completely eliminate, those failures. I next examine shadow banking regulation focused on minimizing systemic risk.

B. Regulation Focused on Minimizing Systemic Risk

Regulation should also focus on minimizing shadow banking's potential to trigger systemic risk.[46] One way to minimize that potential is to make panics less likely.[47] It is impossible, however, to identify and forestall all the causes of panics. To some extent, even the market failures I've already discussed could trigger panics or other systemic shocks. For example, information failure, principal-agent failure, and incentive failure could, individually or in combination, cause one or more large firms to overinvest, leading to bankruptcy; and rationality failure could cause prices of securities in a large financial market to collapse.

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[44] *See id*. at 460.

[45] Steven L. Schwarcz, *Marginalizing Risk*, 89 WASHINGTON UNIVERSITY LAW REVIEW 487 (2012); also available at http://ssrn.com/abstract=1721606.

[46] *Cf*. Xiao Gang, *supra* note 2 (observing that "China's shadow banking sector has become a potential source of systemic financial risk").

[47] *Cf. supra* note 32 (observing that panics often serve as a trigger that can commence a chain of systemic failures).

Regulation could indirectly help by limiting the factors that give rise to shadow banking. Because the most important factor is regulatory arbitrage,[48] there is a circularity: greater regulation of shadow banks could reduce the risks of (by reducing) shadow banking, but at the possible cost of reducing efficiency. China appears to be trying to limit regulatory arbitrage by regulating at least some shadow banks.[49] It can be difficult to know ex ante, however, whether enhanced regulation of non-banks optimally maximizes efficiency while minimizing risk.

Regulation might also be considered to reduce the interrelationships between shadow banks and traditional banks.[50] That would make it less likely that the failure of a shadow bank could impact traditional banks. To the extent the interrelationships are created by contract, however, such regulation would necessarily reduce freedom of contracting. It is not clear that would be beneficial, even assuming it could be adequately monitored and enforced.

Shadow banking regulation therefore might be able to mitigate, but cannot prevent, the occurrence of systemic shocks. I therefore would argue for more regulatory *ex post* approaches, such as trying to protect against systemic consequences that could result from these shocks.[51] This regulatory approach is inspired by chaos theory, which holds that in complex engineering systems—and, I have argued, also in complex financial systems[52]—failures are almost inevitable. Therefore regulatory remedies should focus on breaking the transmission and limiting the consequences of these failures.[53] In other contexts, I have shown how regulation could accomplish this, such as by ensuring liquidity to systemically important firms and markets and by privatizing sources of liquidity in order to help internalize externalities and motivate private-sector monitoring.[54]

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[48] Another factor giving rise to shadow banking may well be technology, which facilitates ever more sophisticated financial mechanisms. However, it would almost certainly be futile, if not counter-productive, to try to regulate the use of technology.

[49] *See supra* note 25 (observing that the CBRC has begun imposing net capital regulations on trust companies).

[50] *See supra* note 36 and accompanying text.

[51] *Cf.* Iman Anabtawi & Steven L. Schwarcz, *Regulating Ex Post: How Law Can Address the Inevitability of Financial Failure*, forthcoming 92 TEXAS LAW REVIEW (2013) (arguing that ex post regulation is necessary).

[52] Steven L. Schwarcz, *Regulating Complexity in Financial Markets*, 87 WASHINGTON UNIVERSITY LAW REVIEW 211 (2009); also available at http://ssrn.com/abstract_id=1240863.

[53] *Id*.

[54] *Id*. *See also* Steven L. Schwarcz, *Controlling Financial Chaos: The Power and Limits of Law*, 2012 WISCONSIN LAW REVIEW 815, 829-33 (also available at http://ssrn.com/abstract=2016434).

Another question for further inquiry might be the extent to which regulation of shadow banking should tie more closely to particular factual patterns.[55] For example, more regulatory attention could be given to managing the short-term funding of long-term assets which, as mentioned, can create a risk of liquidity discontinuities with potentially systemic consequences.[56] Chinese regulators appear to be very concerned about this risk.[57]

The market failure underlying this risk is partly an information failure: that investors in short-term debt may not individually have enough at stake to make it worthwhile to fully evaluate the transaction. Those investors therefore will not accurately price the repayment risk.[58] One possible remedy might be to encourage the development of a liquidity-support industry. Such an industry could achieve an economy of scale in which professional liquidity providers have enough at stake to make that evaluation economically worthwhile.[59]

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[55] *Cf.* e-mail from Dan Awrey, University Lecturer in Law & Finance, University of Oxford, to the author (Jan. 24, 2012; emphasis in original) (saying that he is "increasingly of the view that the prevailing notion of 'shadow banking'—which throws a number of divergent institutions, instruments and markets into the same bucket—has become a meaningful obstacle to regulatory reform in a number of key areas (esp. wholesale funding markets). There are many different *objects* of (potential) regulation wrapped up in this definition, each manifesting different *issues* and requiring different regulatory *responses*.").

[56] *See, e.g.*, Steven L. Schwarcz, *Regulating Shadows: Financial Regulation and Responsibility Failure*, forthcoming 70 WASHINGTON AND LEE LAW REVIEW issue no. 3 (2013); also available at http://ssrn.com/abstract=2159455. *Cf.* Kyle Glazier, *Bernanke: Financial Crisis Was a Structural Failure*, BOND BUYER, Apr. 16, 2012, at 2 (quoting Federal Reserve Board Chairman Ben Bernanke as saying that "a key vulnerability of the [disintermediated or "shadow," financial] system was the heavy reliance . . . on various forms of short-term wholesale funding"); Viral V. Acharya & S. Viswanathan, *Leverage, Moral Hazard, and Liquidity*, 66 JOURNAL OF FINANCE 99, 103 (2011) (observing that short-term funding of long-term projects "played an important role in the financial crisis of 2007 to 2009 and the period preceding it").

[57] Xiao Gang, *supra* note 2. Xiao Gang observes that "China's shadow banking is contributing to a growing liquidity risk in the financial markets. . . . [In] some cases short-term financing has been invested in long-term projects, and in such situations there is a possibility of a liquidity crisis being triggered if the markets were to be abruptly squeezed." *Id*.

[58] *Marginalizing Risk*, *supra* note 45. *Cf.* Tobias Adrian & Adam B. Ashcraft, "Shadow Banking Regulation," Federal Reserve Bank of New York Staff Report No. 559 (Apr. 2012), available at http://www.newyorkfed.org/research/staff_reports/sr559.pdf (arguing that part of the problem of shadow banking is inaccurate pricing of risk).

[59] *Cf. id.* (arguing, among other things, that regulatory reform should focus on enabling more appropriate pricing of shadow bank liquidity arrangements). Other ways to mitigate the risk might include better standards on match-funding coverage, better internal controls on collateral valuation and margining policies, and internalizing externalities (such as mandating privately funded systemic risk funds). The international Basel III capital accord takes a match-funding coverage approach, for example, introducing a liquidity coverage requirement that banks hold sufficient high-quality liquid assets to cover their total net cash outflows over 30 days and another requirement that banks maintain minimum yearly available amounts of stable funding. Jerome Walker, Rosali Pretorius, Michael Zolandz, & Gary Goldburg, *Reconciling the Dodd-Frank and Basel Committee Capital Requirements*, 129 BANKING LAW JOURNAL 627, 631 (July/August 2012).

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