does allow for some regulation of shadow banks (if they are SIFIs), generally speaking, both Basel III and Dodd–Frank fall into the familiar trap of regulating by form rather than function. And by solely addressing the failures of banking institutions, regulators are excluding the systemically important shadow banking system that serves similar functions, such as clearing houses and money market funds. Excluding these groups of institutions makes the system vulnerable, prohibits access to emergency funding, and creates an unlevel playing field. Current regulation therefore violates the principle of the representation hypothesis put forth by the authors.

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Reforming U.S. Financial Markets: Reflections before and beyond Dodd–Frank. By Randall S. Kroszner and Robert J. Shiller. Edited and with an introduction by Benjamin M. Friedman. Cambridge, Mass. and London: MIT Press, 2011. Pp. xvii, 152. $19.95. ISBN 978–0–262–01545–5. *JEL 2011–0125*

Reforming U.S. Financial Markets is a very good contribution to the big-picture discussion of how economists should approach financial regulation in the aftermath of the 2007–09 global financial crisis. In the United States, the Wall Street Reform and Consumer Protection Act of 2010 (Dodd–Frank Act) proceeded ahead of much scholarly reflection, but ongoing work at the Financial Stability Board and in the regulatory implementation of Dodd–Frank make the issues raised in the volume still important.

While some analysis by academics of the crisis and its aftermath has emphasized a large number of regulatory changes at once (see, for example, Committee on Capital Market Regulation, 2009; Kenneth R. French et al. 2010), this volume presents views of Robert Shiller and Randall Kroszner in more focused areas. The principal essays by these leading economists tee up frameworks for reform of U.S. financial markets. While the main essays were written prior to the passage of the Dodd–Frank, the economic issues raised are fundamental and still worthy of analysis and debate. Shiller, drawing on insights from his research on asset pricing and behavioral economics, argues that responses to the crisis were ad hoc and ignored two principles for reform—"democratizing" finance (that is, applying the technology of finance better to people's needs) and "humanizing" finance (that is, pushing financial institutions to respond better to how people actually think and act). Kroszner, by contrast, focuses on the need to reform the market and legal infrastructure of finance. Specifically, he argues that successful regulatory reform would stop the ripple effects of weaknesses in interconnectedness among financial institutions. Both Shiller's top-down view and Kroszner's bottoms-up view deserve serious scrutiny by economists.

Shiller uses his guiding principles as a lens to view the financial crisis and the agenda for regulatory reform, arguing essentially that the roots of the crisis lie in the incompleteness of private and public efforts to realize principles of democratizing and humanizing finance. While this argument is useful for regulatory diagnosis and reform, it is curiously ahistorical, as centuries of financial crises have shared problems of risks of liquidity or maturity transformation and failure to appreciate

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systemic risk. Shiller does offer a historical observation that periods of regulatory innovation come in waves (for example, the sweeping banking and securities legislation of the 1930s) followed by periods of regulatory inattention. Such a view gives somewhat short shrift to the political economy of regulation, in which crises lead to regulatory reforms, leading to competitive pressure and innovation, followed by regulatory response. In that view, regulation playing catch-up is almost surely less effective in the long run than regulation attacking underlying weakness in financial architecture.

Shiller identifies faith in the efficient markets hypothesis as a key culprit in the recent financial crisis. There is no doubt that some regulators (including Federal Reserve chairman Alan Greenspan) held a view that market prices should not be interfered with, the notion that markets and regulators' slavish devotion to the efficient markets hypothesis started the crisis fire seems suspect for two reasons. First, substantial bodies of research in financial economics have evolved away from the efficient markets hypothesis, and many prominent successful investors have embraced such models. Second, the roots of the crisis lie in the "bank run" series of events, with cascading effects through the financial system via shrinking collateral in fire sales. While it is true that, in the crisis, prices departed from fundamental value, that fact is very different from the efficient markets hypothesis's having caused the crisis. The mispricing of tail risks in market prices in the precrisis period does, of course, raise questions of informational imperfections, beliefs about government (rescue) intervention, and other factors. In this respect, Shiller's acknowledgement of the importance of complacency about systemic risks in this precrisis period seems spot on.

Shiller points out areas for improvements in the democratization of finance in mutual funds and private health insurance. The extent of competition in mutual funds or market-based alternatives to the Patient Protection and Affordable Care Act of 2010 in increasing insurance coverage are subjects of much countervailing research not mentioned in the essay. Likewise, the structure of the Consumer Financial Protection Bureau mandated by Dodd–Frank has generated countervailing views to the praise offered here (see, for example, Committee on Capital Markets Regulation 2009). Nonetheless, facilitating democratization of finance provides a useful theme for thinking both about regulatory failure and regulatory reform.

Particularly interesting and intriguing is the use of regulatory intervention to stimulate widespread use of user-friendly and beneficial financial products. Citing the introduction of the long-term mortgage as a new standard by the Homeowners' Loan Corporation in the 1930s, Shiller suggests the potential desirability of interventions to encourage home equity insurance and continuous-workout mortgages in housing finance. While potentially useful, regulatory intervention for "democratizing" and "humanizing" finance still leaves open the question of institutional weaknesses exposed during the 2007–09 financial crisis.

It is those weaknesses that lie at the core of Randall Kroszner's interesting and important essay. Kroszner focuses on the role of unacknowledged and or mispriced systemic risk in the financial crisis, using the analogy of a "ripple" effect. He starts from the microfoundations of finance, arguing that problems of "too big" and "too interconnected" arise from weaknesses in market and legal infrastructure. Such weaknesses permit problems to spread across institutions and across markets, as was the case for the fallout of failures in the "originate to distribute" model that fueled mortgage securitization. In that context, Kroszner's discussion emphasizes the role of credit rating agencies, reforms of mortgage securitization, and problems of funding runs and ensuing instability emanating from the lack of a robust framework for resolving nonbank institutions.

Regulatory emphasis on particular institutions (form) over functions (substance) allowed structural weaknesses to develop in Kroszner's view. The regulatory structure emerging from the financial crisis of the 1930s emphasized protecting banks and banks' principal source of funds, deposits. Over time, depository institutions' position in the financial sector declined (well before the rise of the shadow banking sector prominent in the 2007–09 crisis). Indeed, layers of intermediation in the contemporary financial system lead to a system of interconnections that can make the financial system as a whole more vulnerable to

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shocks hitting on institution or market; see, for example, R. Glenn Hubbard and Anthony Patrick O'Brien (2011), chapters 10–12 and Hubbard, O'Brien, and Matthew Rafferty (2012), chapter 9.

As a complement to Shiller's emphasis on the demand for financial services, Kroszner stresses the need for regulatory emphasis on the supply side of financial services, the "infrastructure," if you will, of financial institutions and markets. Analogous to testing weak links in a chain, his emphasis lies in assessing the resiliency of information and legal aspects of contract clarity and enforcement. With that theme in mind, Kroszner offers policy recommendations for credit ratings, securitization, resolution of financial institutions, and the clearing of derivative transactions.

At their best, credit rating agencies provide useful information about credit quality of issues and issuers, and regulation has granted substantial weight to the pronouncement of credit rating agencies. While many information-related critiques of rating agencies have focused on incentives (in particular, the "issuer pays" model of financing), Kroszner emphasizes the need for more competition. In particular, the agencies faced much less competition in their assessment of structured products than in their assessment of traditional corporate debt (where many analysts' opinions were also available). More information and more competition offer a good example of improving a weak link in the chain of financial interconnections.

Securitization—and securitization of residential mortgages in particular—has the potential to offer significant economic gains to originators, borrowers, and investors. Among other changes, effective consumer protection—common ground in both the Shiller and Kroszner essays—is needed to revive the flow of credit made possible by securitization.

Improving the resolution of complex financial institutions is another essential component of strengthening support for financial interconnections. Such a reform can also decrease the likelihood that ripples from a failure can become a wave wreaking havoc across institutions and markets. While countercyclical capital requirements and leverage limits are surely also important elements of preventing the spread of a financial crisis across institutions, Kroszner's emphasis on a resolution mechanism (not well executed in the Dodd–Frank Act) is another good example of strengthening weak links in the chain of financial interconnections.

Finally, Kroszner, like many economists, argues for more exchange trading and central clearing of derivatives to gain better information about exposures and concentrations of risk. In keeping with his emphasis on strengthening links in the chain of financial interconnections, he observes that markets with a credible central counterparty are less likely to freeze up. Of course, the central counterparty itself must then become an important focus of regulatory oversight and assessment of capital adequacy.

Other contributors add interesting observations complementing those of Shiller and Kroszner. Benjamin Friedman, after observing commonality in Shiller's and Kroszner's emphasis on systemic risk regulation and on accounting rules and capital requirements, makes two interesting incremental points. First, limited liability structures can exacerbate moral hazard problems in financial institutions (as Kroszner later observes, there were in earlier periods with double liability requirements in commercial banking). Second, the Fed's unconventional lending and guarantee policies during the crisis were clearly conducting fiscal policy (given the clear risk of loss), running the risk of jeopardizing the Fed's independence in the future.

George Kaufman channels the classic Pogo reflection: "We have met the enemy, and he is us." In this case, all of us, as he generalizes beyond the Shiller and Kroszner critiques—"culprits" include central bankers, commercial bankers, financial engineers, government, investors, mortgage borrowers, mortgage brokers and salespeople, and prudential bank regulators. He focuses, aptly, on regulatory failures in the precrisis period to focus on systemic risk and financial stability and on market mechanisms (such as mandatory subordinated debt issuance for large banks) that could provide guidance.

Robert Pozen is strong in criticizing Shiller's arguments against Glass–Steagall-styled deregulation: It was not securities underwriting that got major banks in trouble during the financial crisis. It was, of course, highly rated portfolios of mortgage-backed securities that were the principal culprit in bank losses; if underwriting were the

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major concern, such losses would have come from lower-rated tranches more difficult (in that view) for banks to sell. He also offers an alternative to Kroszner's call for more competition among credit rating agencies—the Securities and Exchange Commission would appoint experts who would select a credit rating agency for a transaction, reducing incentive problems.

Hal Scott emphasizes three important areas of systemic risk mitigation. First, he notes the inadequacy of Basel capital requirements for commercial banks, arguing instead for more countercyclical provisions. Second, while sharing Kroszner's general enthusiasm for clearinghouses and exchanges for derivatives, he rightly notes that not all risk can be eliminated and the need to monitor concentrated risks in the central clearing party. Finally, he observes, like Kroszner, that resolution mechanisms for large, complex financial institutions are important.

The essays in *Reforming U.S. Financial Markets* are an important addition to the "Where do we go from here?" discussion prominent in financial regulation and in the management of financial institutions. At the same time, the essays are a cautionary tale. Approaching the aftermath of the financial crisis with either grand rethinking of government regulation or with technical fixes to imperfect market mechanisms may not be quite right. Instead, understanding weak links inherent in financial regulation and avoiding ways to allow those weaknesses to cascade across institutions should be the essential goal. Based on recent actions in Washington and Basel, the authors are right that we still have learning to do.

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Running the World's Markets: The Governance of Financial Infrastructure. By Ruben Lee. Princeton and Oxford: Princeton University Press, 2011. Pp. xvii, 450. $55.00. ISBN 978–0–691–13353–9. *JEL 2011–0135*

According to the European Commission, financial markets infrastructure is like the plumbing in a building, "vital, but unglamorous and forgotten until something goes wrong."[1] The events of the recent crisis have shown how appropriate this comparison is and have highlighted the importance for researchers to understand the details of the institutions at the heart of our financial system.

"Running the World's Markets" aims to give such an understanding of the key market infrastructure institutions (MIIs): *exchanges*, which provide markets by operating trading systems to execute orders and disseminate data; *central counterparties* (CCPs), which interpose themselves between counterparties in financial markets and clear trades; and *central securities depositories* (CSDs), which hold securities and settle trades by transferring ownership in a central register. The book focuses on three main issues and their interactions: (1) the role MIIs play in the regulation of financial markets; (2) how MIIs themselves are regulated; and (3) what the governance structures of MIIs and their implications are.

The book is divided into four parts comprising a total of ten chapters. The first part lays the groundwork of the book: Chapter 1 provides definitions from first principles starting with a definition and discussion of the term "infrastructure" itself and then focusing on the subject matter in the form of exchanges, CCPs and CSDs. The relevant economic principles are reviewed in chapter 2 with a discussion of market power as the main characteristic of MIIs since trading, clearing and settlement are complementary services and there are strong network effects, returns to scale and high set-up costs in all three.

Parts 2 and 3 form the descriptive heart of the book with extensive and detailed survey evidence as well as case studies on the workings of MIIs. First comes survey evidence on the allocation of regulatory powers between governments and MIIs

[1] See http://ec.europa.eu/internal_market/financial-markets/index_en.htm (cited in the book on p. 13).

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