Essential Papers on the Economics of Financial Law

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Essential Papers on the Economics of Financial Law

Geoffrey P. Miller

Abstract: This introduction to a compendium published by Edward Elgar (forthcoming) identifies and critically discusses leading research on the economics of financial law. Topics include the nature of the banking firm, shadow banks, liquidity, lending, capital, bank runs and systemic risk, financial crises, issues in bank regulation, governance, central banks, consumer banking, and challenges for future research.

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The topic of financial law is so vast, covers such a wide array of subjects, and involves so many important public policies, that it may be optimistic to suggest that the subject has a central core or that the idea of an ‘economics of financial law’ has intellectual coherence. Nevertheless, the readings compiled in these volumes, when considered from a sufficiently abstract point of view, do reflect common themes.

One such theme is the safety and soundness of institutions and markets. Bankers have incentives to serve the public interest by operating in a prudent manner; but they also face temptations to harm the public interest by investing in inappropriate and risky ventures. The history of financial systems is punctuated by crises and panics that destroy vast accumulations of capital, undermine public confidence, and suppress economic activity. The world’s financial markets experienced such a panic in 2007–2009, a topic that receives substantial coverage in the pages that follow.

Another common theme is the protection of consumers. Inherent in the banking function is the potential for abusive or sharp practices. Transactions in financial instruments are inherently non-transparent, a fact which creates opportunities for manipulation. The sophistication and complexity of modern finance, moreover, affords professionals a built-in advantage over ordinary investors and borrowers. In the wake of the financial crisis of 2007–

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2009, which unmasked many questionable practices, the subject of consumer protection in financial markets has emerged as a front-burner issue in many countries. In the United States these concerns led to the creation of a powerful new administrative agency, the Consumer Financial Protection Bureau.

The rules, regulations, and practices affecting financial institutions are principally justified as enhancing safety and soundness or protecting consumers against exploitation. This is not to say, of course, that financial regulations, even if justified on sound public policy grounds, are always sensible or well-crafted. Critics have long claimed that many bank regulations are poorly designed, ineffective, or counterproductive, and that too often rules ostensibly justified as serving broad public policies are little more than thinly-disguised favors for organized special interests. Whether bank regulations are sensible or misguided is often a matter of debate. An adequate assessment of their justifications requires an understanding of the underlying economic factors to which they respond and with which they will interact. The readings in this compendium are intended to assist in that enterprise by compiling in convenient form the essential literature on the economics of financial law.

Scholarship on in this field is both broad and deep, and extends back far into the history of economic science. It has, accordingly, been impossible to include all important contributions. The selection of some materials for inclusion, and the decision to omit others, are inevitably subjective tasks. An added problem is presented by the financial crisis of 2007–2009, an event that challenged longstanding assumptions about the safety and soundness of banks, the sufficiency of bank capital, the efficiency of financial markets, the vulnerability of consumers, and the ability of central banks to prevent liquidity crises. Any
analysis of financial markets undertaken prior to these events is subject to revision and rethinking in light of the lessons of experience.

Given these difficulties of selection, no compilation can hope to achieve complete and comprehensive coverage. I have attempted, however, to identify leading contributions in the field and to organize them in a logical fashion that reflects the underlying economic structure. On occasion, I have included in this introduction a description and discussion of contributions which were excluded from the compilation for reasons of space. I hope the consolidation in these volumes will be useful to researchers, policymakers, and others who are concerned with the topic of financial institution regulation.

The Nature of the Banking Firm

It is perhaps discomforting that economists have never reached consensus on the most basic question of all: what is a bank? The difficulty of the matter stems, in, from the multifaceted nature of contemporary financial markets. Banks and related institutions make loans, take deposits, issue debt, act as brokers, dealers and underwriters of securities, act as brokers and underwriters of insurance products, provide safe deposit services, manage mutual funds and individual portfolios, provide investment advice, supply trust services, participate in swaps and derivatives markets, offer credit enhancement products, provide business introductions, and much else besides.

Beneath this welter of activities, economists, lawyers, and policymakers seek to identify what is fundamental. One common perception is that the distinctive feature of banks is that they invest money contributed by public investors. The notion of banks as custodians

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of customer wealth has been a persistent theme in the literature and politics of banking for more than 200 years. The idea traces back at least to the English economist David Ricardo (1772–1823), who is reported to have remarked that ‘the distinctive function of the banker begins as soon as he uses the money of others’. In the twentieth century, the idea was taken up by populists who complained that bankers, having been entrusted with money from public investors, too often abused that trust by wasting the money so conferred or by enriching themselves at the expense of others. Louis D. Brandeis (1856–1941) captured this sentiment in his tract ‘Other People’s Money and How the Bankers Use It’ (1914). Brandeis there set out a theme that has been frequently revived, most recently in critiques of the fecklessness and greed of bankers associated with the financial crisis of 2007–2009. The idea that banks are distinctive because they invest other people’s money can be criticized on the ground that all public firms – whether or not chartered as banks – invest other people’s money. This objection aside, the perception that banks are subject to unique obligations arising from their custodianship of funds contributed by others is deeply entrenched in popular culture.

Lawmakers have sought to define the nature of a banking firm. Doing so is essential because many laws, regulations, and authorizations apply to banks and not to other firms. These legal definitions, at least under U.S. law, focus on two activities: taking deposits and making loans. The verbs in this definition indicate the functions involved: the bank ‘takes’ deposits – it obtains liquidity from depositors – and ‘makes’ loans – it distributes liquidity to borrowers. The legal definition comes close to describing the economic function of a bank, but it has the shortcoming, from the standpoint of economic analysis, that it addresses the bank’s business lines without exploring what underlying function is being served by these activities. Central bankers have attempted to define what is distinctive about banks. E.
Gerald Corrigan, a former president of two Federal Reserve banks, proposed a definition in his essay, ‘Are Banks Special?’.

Corrigan suggested that banks perform three essential functions: they issue transaction accounts; offer backup liquidity to other institutions; and are transmission belts for monetary policy. Corrigan’s attempt at classification has been widely cited, in part because of the distinction of the author and in part because bankers were naturally intrigued by the idea that they might be special. An analysis of the essay reveals, however, that what Corrigan views as distinctive happens to coincide with the interests and regulatory portfolio of his former employer, the Federal Reserve. The central bank is charged with managing the money supply (transaction accounts), is the backup source of liquidity to banks (in its role as lender of last resort), and is responsible for formulating and implementing the nation’s monetary policy (it is the wheel that drives the bank ‘transmission belt’). The claim that banks are ‘special’, moreover, is in Corrigan’s account also a reason for more intensively regulating them – an honor some bankers might have preferred to avoid.

Notwithstanding that Corrigan’s essay can be seen as a thinly disguised brief for enhancing the Federal Reserve’s power and influence, the publication did focus attention on fundamental issues and sparked a debate that continues to the present day.

Academic economists have taken up the challenge of defining what is essential about banks. These efforts fall into two categories. Some economists consider the definition of a bank from the standpoint of a particular public policy issue. An example is George J. Benston’s paper, ‘What’s Special about Banks?’.

Responding in part to Corrigan’s essay, Benston identifies six aspects of how banks have been special (although not in his view unique): efficiently produced products, importance for the development and growth of
economies, international scope, role in economic instability and the conduct of monetary policy, early regulation by governments, and source of data for academic researchers and institutions. Although agreeing with Corrigan that banks are special (although disagreeing on the features that make them special), Benston sees decidedly less justification for regulating banks: in his view, protecting the deposit insurance fund is the only valid ‘public interest’ reason for bank regulation. Benston would repeal all laws specifically dealing with banks and bank companies except those dealing with chartering and deposit insurance.

The second approach to defining a banking firm seeks to ground analysis in fundamental principles. Here, economists focus on two functions. First, banks function as intermediaries. In that capacity, they transmit liquidity from economic agents who value it less to agents who value it more. Intermediated finance is distinguished from direct finance in that the intermediary breaks the connection between the supplier and the user of the liquidity: the supplier has a claim only on the intermediary and not on the ultimate user. Intermediated finance offers advantages over direct finance, including portfolio diversification, economies of scale and scope, bonded expertise, and on-going monitoring of the activities and financial position of borrowers. Martin Hellwig’s 1998 study, ‘Banks, Markets, and the Allocation of Risks in an Economy,’\textsuperscript{5} provides a deep level analysis of intermediation. In the absence of transaction costs, contracts would be written between economic agents that distributed each risk to the party most able to take it on. The allocation of resources through financial markets would be efficient and complete; financial intermediaries would not be needed. In the real world, such arrangements are not feasible due to high transaction costs. Hellwig’s paper insightfully demonstrates that financial

intermediaries provide efficient responses to this problem by centralizing risk distribution and thus avoiding a massive proliferation of individual contracts.

In addition to acting as intermediaries, banks serve as providers of payment services. The deposit account is a form of private money created by the bank and used by economic agents to transfer liquidity in exchange for goods or services. While banks dominate payments in developed economies, they are not the only providers of these services. Government-issued currency is also used, as are – although in much smaller amounts – esoteric instruments such as local currencies, LETS systems, private electronic payment instruments (merchant-issued or online game currencies), and crypto-currencies such as Bitcoin.

Why are these functions – acting as financial intermediaries and providing payments services – so closely linked in banking firms? Several economists have offered explanations. Fischer Black, in a paper not reproduced here, observed that bank loan customers often also keep a deposit account at the institution. Black explained the connection as benefitting both bank and borrower by providing the bank with an inexpensive means for monitoring the borrower’s financial condition during the life of the loan.6

Anil K. Kashyap, Raghuram Rajan and Jeremy C. Stein’s 2002 article, ‘Banks as Liquidity Providers: An Explanation for the Coexistence of Lending and Deposit-Taking,’7 observes that banks often lend via commitments – for example, they extend a line of credit that the borrower can elect to take down at any time at the borrower’s option. In this respect the lending and deposit functions are similar: both the borrower (in the line of credit) and the depositor (in the deposit account) have the right to withdraw funds from the bank on demand.


Accordingly, the bank must hold reserves against both contingencies. Because reserves are expensive, the bank can conserve on expenses if it combines the lending and loan commitment functions and if the risks of those two functions are not too highly correlated. Hence deposit taking and lending are often seen together.

Douglas W. Diamond and Raghuram G. Rajan’s 2001 paper, ‘Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking,’ offers a complementary but different explanation for the linkage between deposit-taking and lending. Banks implicitly promise funders that they will deploy resources and expertise to monitor loans they have extended. Once funds have been extended, however, banks may threaten to cease monitoring unless funders provide additional compensation. Bankers and funders would both be better off if banks could credibly commit ex ante not to engage in such opportunistic behavior. Diamond and Rajan suggest that the deposit contract provides such a credible commitment: if bankers threaten to reduce monitoring, depositors will fear that assets will be disposed of in a fire sale creating a threat to solvency. Rather than incur this risk, they will run the bank. The threat of a run lends credibility to the bank’s commitment to continue monitoring its loan portfolio, and thus reassures its funding sources ex ante.

The foregoing theories are plausible, but neither appears sufficiently robust to explain the strength of the linkage between the deposit-taking and lending functions. A simpler, complementary explanation might be that bank payment services are effectuated by customer accounts held at the bank. Given that the bank holds customer accounts to support the payment function, it has funds on hand that can be used to support loans to customers. In other words, the payment function is the truly distinctive feature of banks; intermediation is

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an important but collateral activity that arises due to the presences of balances in banks’
transaction accounts.

Shadow Banks

No analysis of the banking firm would be complete without a discussion of shadow
banks. Shadow banks can be defined in various ways, but are commonly understood to
consist of short-term or on-demand non-deposit liabilities together with financial institutions
that obtain funding from these sources. Because shadow banks do not offer demand deposits,
they are not regulated as banks (although they may be subject to some other regulatory
scheme, such as that pertaining to securities firms). Concern about shadow banks emerged on
the front-burner of regulatory policy as a result of the spectacular failures of Lehman
Brothers and Bear Stearns during the 2007–2009 financial crisis.

Gary Gorton and Andrew Metrick’s 2010 article, ‘Regulating the Shadow Banking
System,’ was an important contribution to crystalizing public policy concerns. These authors
identify money market funds, repurchase agreements, and asset-backed securities as principal
components of the shadow banking system. They call for reforms, including imposing bank-
like regulation on money market funds that offer traditional banking services and requiring
that asset-backed securities be purchased and held only by regulated bank-like institutions.

Morgan Ricks’ 2012 paper, ‘A Regulatory Design for Monetary Stability,’ focuses
on what the author terms ‘money claims’ – fixed-rate, short-term borrowings other than trade
credit. Ricks argues that short-term credit markets are subject to dangerous instability. Ricks
recommends comprehensive reforms, including a licensing requirement for issuers of money

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9 Gary Gorton and Andrew Metrick (2010), ‘Regulating the Shadow Banking System’ and Andrei Shleifer and
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1289–360.
claims; a requirement that money claims issuers abide by portfolio restrictions and capital requirements; a government guarantee of all money claims; and a requirement that licensed entities pay risk-based fees to the government in exchange for its guarantee. Effectively, Ricks would put the sovereign’s credit behind all money claims and would impose bank-like regulation on any institution that issues such claims.

American regulators have responded to concerns about shadow banking. They brought systematically important nonbank financial institutions within the ambit of bank supervision and imposed a floating net asset value requirement for institutional prime money market funds. Overall, however, the regulatory response might be seen as anemic in light of the severity of the problems identified by Gorton–Metrick, Ricks and others. The reason for the limited regulatory response may have to do with the nature of the changes that would be entailed: both the Gorton–Metrick and the Ricks proposals would fundamentally transform markets for short-term debt.

**Liquidity**

After considering the nature of the banking firm (and its cousin, the shadow bank), the readings turn to one of the most important features of banking firms, namely their role in supplying liquidity to the economy. The role of banks in liquidity provision has always been a central focus of bank economists, but it gained additional importance when the world’s financial markets suffered a terrifying loss of liquidity during the darkest days of the crisis of 2007–2009. Regulators responded vigorously, although too late to prevent the harm. The Basel III liquidity rules dramatically upgrade what had been a rather primitive regulation requiring banks to hold minimum reserves against deposits.
A key issue, pertinent to the role of banks in supplying liquidity, is the maturity mismatch between assets and liabilities. Banks supply liquidity to investors by making deposits payable on demand; but they invest deposited funds in long-term investments that cannot be sold without substantial costs. The durational mismatch creates fragility: banks face the potential for destabilizing runs and are exposed to interest rate risk. Why do banks take on this problematic structure? Several economists have offered explanations.

Charles W. Calomiris and Charles M. Kahn’s 1991 paper, ‘The Role of Demandable Debt in Structuring Optimal Banking Arrangements,’\textsuperscript{11} presents the deposit contract as providing an economically valuable mechanism for imposing market discipline on bankers who otherwise would take on too much risk. Depositors have an incentive to monitor the banker because, in the event of trouble, they can ‘vote with their feet’ by withdrawing their funds. Knowing of this risk, bankers are incentivized to avoid excessive risk. Depositors, in other words, impose a powerful form of market discipline through their implicit threat to run the bank.

Gary Gorton and George Pennacchi’s 1990 article, ‘Financial Intermediaries and Liquidity Creation,’\textsuperscript{12} explains the deposit contract as a response to the risk uninformed liquidity traders face when they buy or sell assets in a market that also contains informed traders. In Gorton and Pennacchi’s model, the bank solves this problem by offering liquidity traders deposit contracts backed by capital provided by informed traders. An interesting implication of this work is that the solution to the liquidity trading problem does not necessarily require a bank: similar benefits could be offered by a money market fund (or


even single firm) if the issuer of the demand instrument can offer sufficient assurances to
liquidity investors that they will not be exploited by informed traders.

**Lending**

In addition to providing liquidity to deposit customers, banks loan money to
borrowers. The lending function is often cited as a crown jewel of banking and a principal
justification for its existence: banks enhance social wealth by allocating liquidity to the
highest-valuing users. As Walter Bagehot put the idea in the late nineteenth century, the files
of English banks

are full of the bills drawn in the most profitable trades, and . . . empty of
those drawn in the less profitable. If the iron trade ceases to be as profitable
as usual, less iron is sold; the fewer the sales the fewer the bills; and in
consequences the number of iron bills in Lombard Street is diminished. On
the other hand, if in consequences of a bad harvest the corn trade becomes
on a sudden profitable, immediately ‘corn bills’ are created in great
numbers, and if good are discounted in Lombard Street. Thus English
capital runs as surely and instantly where it is most wanted, and where there
is most to be made of it, as water runs to find its level.\(^{13}\)

What is it about bank loans that make them a desirable mechanism for distributing
liquidity within an economy? The key here is that financial intermediaries, unlike investors in
public debt, are able to monitor their borrowers on an ongoing basis during the life of the
loan. The ability of an intermediary to engage in on-going monitoring of borrowers has
implications for the structure of loan agreements. Gary Gorton and James Kahn’s 2000
article, ‘The Design of Bank Loan Contracts,’\(^{14}\) models intermediated loans subject to
ongoing monitoring and renegotiation. The Gorton–Kahn model predicts that bank loans will
have seniority over other unsecured debt; that the bank will retain an option to liquidate the

April, 331–64.
borrower, and that the initial interest rate on the loan will be set to minimize costs of moral
hazard and renegotiation rather than to reflect the default risk on the loan.

What advantages flow from the fact that bank loans are subject to monitoring and
renegotiation? One benefit is that they function as a signal of borrower quality. In a paper not
reproduced here, Eugene Fama observes that loans to business customers typically have short
maturities and are rolled over when they mature.\(^\text{15}\) In consequence, banks frequently re-
evaluate the creditworthiness of borrowers. The decision by a bank to lend to a customer thus
acts as an ongoing quality signal to other creditors and to capital markets. In support of this
theory, Fama observes that firms often take out a line of credit with their bank even if they do
not actually intend to use it: the line is itself valuable as a signal to others that the firm is
likely to meet its obligations.

The monitoring capacities of intermediated finance also polices against opportunistic
risktaking by borrowers. One problem of lending – indeed, a problem of debt in general – is
that it creates a conflict between creditors and shareholders. The equity holder captures the
upside of risky projects and shares with creditors the downside of investments that go south
and result in the borrower’s insolvency. In the presence of debt, equity becomes more risk-
preferring than either debt-holders or society would prefer.\(^\text{16}\) Clifford W. Smith, Jr. and
Jerold B. Warner’s 1979 article, ‘On Financial Contracting: An Analysis of Bond
Covenants,’\(^\text{17}\) demonstrates that bondholders deal with this problem through covenants in the
governing legal documents. The approach to borrower opportunism found in bond covenants,

\(^{16}\) The conflict is essentially the same as the problem of moral hazard in insurance contracts. Conceive of debt as a
policy which creditors give to equity holders insuring them against the risk of insolvency. The deductible of this
policy is the value of the equity at any given time. If the firm becomes insolvent, the equity holders forfeit the value
of their interests – the deductible – but because of limited liability bear no further risk. All costs of insolvency
beyond the value of the equity are borne by the creditors as insurers.
\(^{17}\) Clifford W. Smith, Jr. and Jerold B. Warner (1979), ‘On Financial Contracting: An Analysis of Bond Covenants’,
however, is less flexible and less effective than the monitoring and renegotiations that are possible when credit is provided through an intermediary.

Douglas W. Diamond’s 1984 paper, ‘Financial Intermediation and Delegated Monitoring,’ also draws on the monitoring advantages of financial intermediaries. In Diamond’s model, investors delegate the task of monitoring loan contracts to outside parties. Delegated monitoring conserves on costs because the alternative is either duplication of effort if each lender monitors directly, or a free-rider problem in which lenders rely on others to perform the task. But, given the advantages of delegated monitoring, why should that task be given to a financial intermediary rather than some other firm? Diamond suggests that intermediaries are efficient providers of delegated monitoring due to diversification. Within the intermediary, a diversified asset portfolio reduces the cost to the intermediary of riskbearing and also reduces the risk that the intermediary will default on its own debt. ‘The Theory of Financial Intermediation,’ by Franklin Allen and Anthony M. Santomero, offers a related theory for why lending occurs through intermediaries rather than through direct investment. Unlike Diamond, who focuses on diversification as the key to understanding why intermediaries are efficient monitors, Allen and Santomero emphasize participation costs. Agents who invest directly in financial assets incur costs of research prior to purchase and monitoring and analysis thereafter. These participation costs limit investment in financial assets. Intermediaries respond to this problem by offering securities with stable cash flows achieved by hedging and other risk-management strategies. Investors can place their funds with the intermediary without incurring the research and monitoring expenses associated

with direct investment. Allen and Santomero argue that the role of intermediaries in reducing participation costs is important and different than other benefits of intermediation such as reducing asymmetric information or conserving on transaction costs.

A puzzle in this area is why financial intermediaries, who are experts at analyzing and monitoring investments, sometimes display spectacular errors of judgment. Bagehot was aware of this problem: even though he lauded the efficiency of bank lending in general, he also marveled about the occasional acts of ‘amazing indiscretion’ on the part of great firms. Bagehot’s characterization could just as well describe Bear Stearns, Lehman Brothers, AIG and many other firms in recent times. Part of the explanation for the frequency of huge lending miscalculations may have to do with the pressures placed on banks by public investors (consider Citigroup’s Charles Prince, who famously remarked in 2007 that ‘as long as the music is playing, you’ve got to get up and dance’). Compensation policies and intellectual shortcomings of bankers may also play a role. With limited time horizons and compensation for current performance, bankers may commit to investments that offer good returns in the short run but that also pose high levels of risk. These theories may be part of the explanation for bankers’ mistakes, but probably are not the full story. As yet, the problem of gross mistakes in judgment by large financial intermediaries is incompletely theorized.

**Capital**

The financial crisis of 2007–2009 led many to conclude that banks and shadow banks operated with inadequate capital in the years prior to the financial turmoil. Regulators responded by upgrading capital requirements; the Basel III capital rules imposes a ‘capital conservation buffer’ which is in effect a hike in required capital, and even more capital is required of systemically important institutions. Meanwhile regulators pressured banks to hold
capital above the regulatory minima. Even these measures were insufficient in the view of some observers who called for capital dramatically above the levels currently required.

What does economic research tell us about the proper level of bank capital? The Modigliani–Miller theorem implies that under idealized conditions the capital structure of a bank has no effect on its value. In the real world, a bank’s capital structure does matter. But how? And how can capital be efficiently managed so as to reduce the risk of bank failure without unduly impairing the profitability of banking firms? The readings in this section address those questions.

Douglas W. Diamond and Raghuram G. Rajan’s 2000 paper, ‘A Theory of Bank Capital,’\(^{20}\) explains capital as reflecting a tradeoff of benefits and costs. Unlike depositors, who can liquidate immediately, capital providers have no fast remedy if the banker mismanages the assets (although if sufficiently organized they can replace the bank’s management in the long run). Thus as capital increases, managers become better able to appropriate rents for themselves – thus increasing financing costs ex ante. This negative feature of capital is countered by positive aspects: capital provides a valuable cushion against shocks to asset values, and changes in capital can impact a bank’s ability to hold up liquidity constrained borrowers by credibly threatening to withdraw funding. In Diamond and Rajan’s view, the amount of capital in the bank is a function of all three effects. This paper provides insight into the dynamics underlying a bank’s capital structure in the absence of regulatory requirements.

Other accounts consider the incentive effects of capital on a banker’s propensity to take risks. Other things equal, a banker who responds to the interests of shareholders will

seek to minimize capital, for several reasons: capital is seen as an expensive form of financing; increases in capital reduce the bank’s ability to offer deposit accounts, which are not only a source of financing but also a business line and source of customer relationships; and as capital decreases, shareholders capture more of the profits from risky investments and experience less of the losses.

This last effect – the increasing risk-preference of equity as leverage increases – is problematic from a social policy point of view because it reduces investments in banks and also incentivizes banks to take on excessive risks. The problem can be addressed, although not eliminated, through modifications to a bank’s financing instruments. One strategy, employed by many banks in the Anglophone world prior to the 1930s, was the use of assessable stock. Assessable stock functioned like ordinary stock with one exception: if the bank failed and depositors incurred losses, the holder of the stock would be required to recapitalize the bank ex post. Assessable stock was not an unlimited liability instrument because the amount of allowed payments was capped, typically at some multiple of par value (a common pattern was twice par).

Assessable stock had desirable features as compared with conventional equity. It provided a built-in mechanism for recapitalizing the bank in the event of shocks to asset values, and the holders arguably became risk-averse when the bank was in financial distress – the point where common shareholders became highly risk-preferring. On the downside, assessable stock increased transaction costs because of the need to identify the holders and collect the assessment; and the prospects for collection was reduced given that the failure of the bank adversely affected the personal financial positions of many shareholders.
Two readings in this collection examine the role of assessable stock. Berry K. Wilson and Edward J. Kane’s 1997 paper, ‘The Demise of Double Liability as an Optimal Contract for Large-Bank Stockholders’,\(^{21}\) examines the performance of assessable stock before and after the onset of the Great Depression. They find that assessable stock benefited shareholders of large national and state chartered banks during the 1920s, but that this benefit disappeared in the early 1930s – a result that could help explain the political decision, made in 1933, to abandon assessable stock for national banks and replace it with a program of federal deposit insurance. The authors also find that the collection rate on assessments for national bank shareholders did not decline during the turbulent years 1930–1934.

Benjamin C. Esty’s 1998 article, ‘The Impact of Contingent Liability on Commercial Bank Risk Taking’,\(^{22}\) examines the performance of assessable stock from 1900 to 1915. Esty found that banks with assessable stock held a lower proportion of risky assets and more capital. Moreover, as net worth declined, these banks were less likely to increase their investment in risky assets. Overall, Esty’s research supports the proposition that assessable stock provided a desirable cushion against insolvency and discouraged bankers from taking on undesirably high levels of risk when capital became thin.

Assessable stock is no longer used, but a variant on the idea, contingent convertible bonds (‘cocos’) came to the front burner of policy in the aftermath of the financial crisis of 2007–2009. These securities convert from debt to equity upon the occurrence of some event or condition defined in the contract. Because these securities recapitalize banks without requiring bail-outs, they are often referred to colloquially as ‘bail-in’ instruments. Cocos

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have much to recommend them: they recapitalize banks automatically without the need for litigation, government intervention, or taxpayer funds. On the other hand, these securities are subject to potential shortcomings and uncertainties. In particular, they have been critiqued on the ground that automatic conversion triggers can be manipulated and may result in multiple conversion equilibria which increase volatility and reduce the certainty of valuations.

This collection includes several papers on contingent convertible debt. John C. Coffee, Jr.’s 2011 paper, ‘Systemic Risk after Dodd-Frank: Contingent Capital and the Need for Regulatory Strategies beyond Oversight,’23 proposes a bail-in security with the following features. The conversion would occur on a gradual basis, and the debt would convert to senior nonconvertible preferred stock with cumulative dividends and voting rights. The intent is to dilute the equity in a manner that deters excessive risk taking, to create a class of voting preferred shareholders who would be rationally risk averse, and to effect changes incrementally in order to counteract obstacles of political resistance and bureaucratic indecision.

Patrick Bolton and Frédéric Samama’s 2012 article, ‘Capital Access Bonds: Contingent Capital with an Option to Convert,’24 offers a different version of contingent capital. Instead of automatic conversion upon a predefined external event, their proposal contemplates that banks would purchase an option to issue new equity at a predetermined strike price. Effectively, they propose a form of insurance for banks who expect to need to raise equity capital in a crisis. They argue that the option approach would benefit banks, which would purchase costly new capital only when they need it; and also benefit investors

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who could implement counter-cyclical equity investment strategies. A challenge for their thesis is to identify private parties who might credibly sell this sort of protection, given that financial markets are likely to be in crisis when a call for a capital injection is made; they suggest that sovereign wealth funds would be appropriate candidates.

Charles W. Calomiris and Richard J. Herring’s 2013 paper, ‘How to Design a Contingent Convertible Debt Requirement that Helps Solve Our Too-Big-to-Fail Problem,’ offers a sophisticated version of a contingent convertible bond designed to provide a contingent cushion of common equity, create a credible signal of default risk, and establish incentives for the voluntary issuance of equity as a means of avoiding a dilutive conversion. The authors argue that their proposed design would incentivize systemically important financial institutions to implement sound and effective systems of risk governance.

Bank Runs and Systemic Risk

As illustrated during the financial crisis of 2008–2009, liquidity problems are not fossils. Far from: the world’s financial markets came perilously close to catastrophe when credit markets froze in September 2008. The turbulence of those years focused attention of scholars and policymakers as never before on the topic of bank runs and panics.

A leading model of bank runs is Douglas W. Diamond and Philip H. Dybvig’s 1983 paper, ‘Bank Runs, Deposit Insurance, and Liquidity.’ Banks insure depositors against unforeseen liquidity demands because the bank can diversify against random consumption needs. One of the equilibria of the Diamond–Dybvig model is the bank run in which many depositors draw down their investments at the same time. Bank runs impose significant costs

for because banks will be forced to liquidate assets at fire-sale prices and may withdraw from positive present value projects. Meanwhile, if runs spread, even previously healthy banks may be forced to suspend payments or close. Diamond and Dybvig offer interesting comments about devices for combating runs including suspension of convertibility and government-sponsored deposit insurance.

Charles W. Calomiris’ 1990 paper, ‘Is Deposit Insurance Necessary? A Historical Perspective,’\textsuperscript{27} picks up on the Diamond–Dybvig observations about the utility of deposit insurance, but offers a decidedly more skeptical account. Calomiris starts with the observation that deposit insurance, although designed to mitigate instability in banks, can perversely exacerbate problems: in the present of deposit insurance, bankers are no longer subject to the market discipline of runs and therefore face fewer penalties for engaging in unsafe lending. These observations lead to an informative account of the history of deposit insurance in the United States. Calomiris finds that before the establishment of a federal deposit insurance system in the 1930s, insurance systems that relied on self-regulation by banks themselves, made credible by mutual liability, were successful, while compulsory statesponsored systems were not. Branch banking increased stability and resiliency to shocks as compared with unit banking systems. Calomiris’ study suggests that small banks were beneficiaries of state-sponsored deposit insurance systems and that alternatives to such systems existed in the form of self-insured clearing houses or large banks which could internalize portfolio diversification through branching.

\textbf{Financial Crises}

Bagehot, perspicacious on this issue as on so many others, recognized that with increased lending comes increased risk:

in exact proportion to the power of this system is its delicacy – I should hardly say too much if I said its danger. . . . Of the many millions in Lombard Street, infinitely the greater proportion is held by bankers or others on short notice or on demand; that is to say, the owners could ask for it all any day they please: in a panic some of them do ask for some of it. If any large fraction really was demanded, our banking system and our industrial system too would be in great danger.28

The readings in this section expand on Bagehot’s observation. It is not common to include speeches by politicians in compendia of papers on an academic topic. I have made an exception for Franklin Roosevelt’s First Fireside Chat,29 delivered on March 12, 1933 at a time when the entire American banking system had collapsed and the president, newly arrived in office, had ordered a nationwide banking holiday in the face of overwhelming panic. This text is both an important historical document and also a remarkable analysis, framed in simple but accurate terms, of the circumstances that led up to the holiday and the measures that the government had undertaken in response. It is perhaps regrettable that neither of the presidents who were in office during the 2007–2009 crisis were able to offer a comparable explanation of the financial turmoil of those years or of the efforts designed to rectify the situation.

The phenomenon of bank panics is generalized in the notion of systemic risk – the risk of events that, if they occur, can destabilize the financial market. Viral V. Acharya’s 2009 paper, ‘A Theory of Systemic Risk and Design of Prudential Bank Regulation,’30 models systemic risk as the joint failure risk arising from the correlation of returns on asset

28 Walter Bagehot, *Lombard Street*, p. 19 n.*.
side of bank balance sheets. This risk is significant, in this model, because bank asset portfolios are inefficiently correlated due to rational herding behaviour. Prudential regulation should therefore focus on joint failure risk as well as on the risk of failure of a single institution. In particular, Acharya recommends that bank closure policy should exhibit little forbearance upon joint bank failures, and that capital adequacy requirements should be increasing in the correlation of risks across banks. Acharya’s paper provides important lessons for bank regulators charged with designing systemic risk mitigation strategies.

Steven L. Schwarcz’s 2008 paper, ‘Systemic Risk,’\textsuperscript{31} observes that in contemporary financial markets, nonbank institutions and markets pose a significant threat to financial stability. Schwarcz argues that systemic risk arises because market participants lack sufficient incentives to limit risky behaviors. In the author’s view, this market failure can and should be addressed by legal reforms imposing controls on risky behavior by private market actors, including both banks and nonbank financial institutions.

Ben S. Bernanke’s 1983 study, ‘Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression,’\textsuperscript{32} reflects the thinking of the future Federal Reserve chairman on the nature and dynamic forces underlying the 1930s crisis. Milton Friedman and Anna Schwartz had argued that troubles in the financial system transmitted to the broader economy through two mechanisms: bank failures reduced the wealth of shareholders, and (more importantly) reduced banking activities limited the money supply and suppressed economic activity. Bernanke offers a third mechanism, supplemental to the Friedman–Schwartz theory. In his view, distress in the banking sector reduced the supply of intermediation services which in turn led to a credit crunch affecting business borrowers. The

result was to convert a severe recession into a protracted depression. A policy implication of Bernanke’s theory – similar to one drawn from the Friedman–Schwartz account – is that the central bank, when confronted by distress in the financial sector, should greatly increase the supply of credit in the economy. When Bernanke became Chairman of the Federal Reserve, this is precisely the strategy the central bank undertook in response to the turmoil of 2007–2009.

A number of post-crisis studies have sought to identify intellectual risks as causal factors in the market disruption. Erik F. Gerding’s 2009 paper, ‘Code, Crash, and Open Source: The Outsourcing of Financial Regulation to Risk Models and the Global Financial Crisis’, points to model risk as a factor. Gerding describes how financial institutions employed what he calls the ‘new financial code’ to shift, spread, and price financial risk. Despite the promise of this approach, the models failed in 2007–2009. Gerding draws several lessons from this history. He argues that regulators should abandon provisions of the Basel II guidelines that allow big banks to set capital requirements according to internal risk models; suggests that regulators should promote ‘open source’ models, and claims that the failure of risk models reveals advantages of equity securities in spreading risk. Gerding’s article is of interest, not only for its specific observations and proposals, but also as an illustration of concerns about the use of economic models and the outsourcing of management tasks in the financial services sector.

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Geoffrey P. Miller and Gerald Rosenfeld’s 2010 paper, ‘Intellectual Hazard: How Conceptual Biases in Complex Organizations Contributed to the Crisis of 2008,’ identifies behavioral factors which the authors believe contributed to the turmoil of the late 2000s. Intellectual hazard, in their terminology, is the tendency of behavioral biases to interfere with accurate thought and analysis within complex organization. Intellectual hazard impairs the acquisition, analysis, communication and implementation of information within an organization and the communication of such information between an organization and external parties. Miller and Rosenfeld argue that intellectual hazard was a cause of the financial crisis of 2007–2009 and suggest that this risk may be an important factor in many financial crises.

Martin F. Hellwig’s 2009 paper, ‘Systemic Risk in the Financial Sector: An Analysis of the Subprime-Mortgage Financial Crisis,’ analyses the causes and propagation of the 2007–2009 financial crisis from an abstract perspective. In Hellwig’s view, the root cause was excessive maturity transformation through structured finance arrangements which resulted in downward pressure on price. The financial system failed to adjust in an orderly fashion to the re-pricing of these assets due to the interplay of a number of factors: market malfunctioning, fair value accounting, an insufficiency of equity capital, and poorly structured prudential regulation. The paper argues that reform efforts must go beyond individual incentives and supervision and pay attention to issues of systemic interdependence and transparency.

**Issues in Bank Regulation**

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Throughout most of their history, banks have been more intensively regulated than other firms. Although scholars debate the pros and cons of government control (see the article by George Benston discussed above), the fact is that banks seem to be ever more heavily regulated. But what form should regulation take? What powers should regulators exercise, and how should responsibilities be allocated within the government?

Although now substantially outdated, Kenneth Scott’s 1977 article ‘The Dual Banking System: A Model of Competition in Regulation’[^36] is the foundational work in this area. Scott’s analysis presented the strange system of American banking regulation, in which banks are allowed to select between state and federal regulators, as serving a valuable public policy rather than as an embarrassing residue of history. He argues that the power of banks to select their regulator promotes public welfare because banks will select whichever regulatory system allows them to operate with the greatest efficiency.

Scott’s thesis did not go unchallenged. Some commentators found his analysis to be overly optimistic, in that competition among regulators was just as likely to generate a competition in laxity as to increase efficiency. Others challenged the premise that there is much difference in regulatory options. The leading article taking this position is Henry N. Butler and Jonathan R. Macey’s ‘The Myth of Competition in the Dual Banking System.’[^37] Butler and Macey argue that the appearance of competition in bank regulation is often belied by the reality that federal regulators have the upper hand: they can and do pre-empt conflicting state regulation, thus reducing the potential value of charter choice. In the years since the Butler–Macey article, the balance has shifted even more towards regulatory control.

For example, the statute creating the federal Consumer Financial Protection Bureau allows that agency to impose binding regulations but also protects state laws against preemption if they are more restrictive than their federal counterparts.

Issues of bank regulation are not limited to the United States. Banks around the world present similar problems and invite similar regulatory responses. The international arena thus presents the same general regulatory issues as are treated in the Scott and Butler–Macey articles: should regulation be harmonized under an international standard, or should nations adopt country-specific rules? The tenor of most recent proposals has been to harmonize regulation across national boundaries. Roberta Romano’s 2014 paper, ‘For Diversity in the International Regulation of Financial Institutions: Critiquing and Recalibrating the Basel Architecture,’ offers a dissenting view. Romano argues that harmonization may increase rather than decrease systemic risk. Nor is it clear, in her view, that regulators can confidently determine capital requirements or other regulatory policies. Global harmonization, accordingly, may perpetuate and amplify error. Romano proposes, instead, that regulators should foster diversity and experimentation. Specifically, she proposes a mechanism to allow for departures from the Basel guidelines while providing safeguards against ratcheting up systemic risk.

Concern about regulatory groupthink is not limited to the international arena. Even within a country the lack of independent voices can stifle innovation and exacerbate risk. Brett McDonnell and Daniel Schwarcz’s 2011 paper, ‘Regulatory Contrarians,’ addresses this issue. They define a regulatory contrarian as a person who possesses persuasive

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authority, is affiliated with or enjoys privileged access to a regulatory entity but remains independent of that body, and is tasked with studying and reporting on regulatory issues. McDonnell and Schwarcz argue that contrarians can encourage regulators to identify and respond to emerging risks. Perhaps unfortunately, post-crisis reforms have failed to implement the McDonnell–Schwarcz suggestion. Far from it: the bodies charged with identifying threats to financial stability – the Systemic Risk Board in Basel and the Financial Stability Oversight Council in the United States (among others) – are little more than recycled regulators whose perspectives and imagination will inevitably be limited by the agenda and attitudes of the agencies with which they are affiliated.

A global perspective on bank regulation is provided in James R. Barth, Gerard Caprio Jr. and Ross Levine’s 2004 paper, ‘Bank Supervision and Regulation: What Works Best?’ These authors make a heroic effort to compare bank regulations and supervisory practices in 107 countries and to evaluate these practices in terms of their practical efficacy. The paper examines regulatory restrictions on bank activities and the mixing of banking and commerce; regulations on domestic and foreign bank entry; regulations on capital adequacy; deposit insurance system design; supervisory power, independence, and resources; regulation of lending; regulations fostering information disclosure and private-sector monitoring of banks; and government ownership. Preliminary findings suggest that the best performing strategies include guidelines that force information disclosure, empower private sector corporate control, and foster incentives for private agents. The authors caution against excessive use of government supervision and regulation. While this study is subject to methodological objections pertaining to cross-country studies of complex institutions and

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practices, it is a useful corrective to the over-enthusiastic use of command-and-control style regulations.

Eric Posner and E. Glen Weyl’s 2013 paper, ‘Benefit–Cost Analysis for Financial Regulation,’\(^{41}\) calls for rationalization of bank regulation through the systemic application of benefit–cost analysis. The authors note that such analysis is already required for other industries but is not mandatory – and not performed – for banking regulations. Their proposed analysis would compare compliance costs with the benefits of a proposed regulation. The authors’ call for systemic consideration of the costs of financial regulation is likely to receive a favorable response from banks who felt besieged by the regulators in the wake of the financial crisis of 2007–2009. On the other hand, it will probably be stoutly resisted by regulators who do not want to cost-justify their proposals (or their existence). An issue here is whether the costs and benefits of bank regulation can be quantified with sufficient precision to make the proposed analysis a useful tool. Although the authors believe that compliance costs can be quantified in a straightforward fashion, bankers might testify that regulatory pressures pervade their organizations in ways that is difficult to calculate. Benefits may be even more difficult to estimate, especially given that banking involves systemic risks and costs. Nevertheless, the proposal for benefit–cost analysis of banking regulation advances the debate, and may contribute, as a collateral bonus, to stimulating economic analyses of bank regulatory issues.

**Governance**

We now shift to the governance of banking firms, a matter of significant public concern in the wake of the financial crisis of 2007–2009. The topic, involving complex legal

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and institutional rules and practices, is one to which legal scholars can usefully contribute. Both of the articles in this section are by law professors – one from Germany and one from the United States. Klaus J. Hopt’s 2013 article, ‘Corporate Governance of Banks and Other Financial Institutions after the Financial Crisis’, sharply distinguishes between banks and industrial firms. For industrial enterprises, optimal governance mechanisms serve the interests of the equity holders. For financial institutions, in contrast, stakeholders include depositors, policyholders, and other creditors – a phenomenon Hopt terms ‘debt governance’. The author argues that regulation of bank governance must be ‘demanding and even severe’. Among other measures, he considers proposals for separating the management and control functions; establishing risk committees or independent chief risk officers; dealing with the problem of complex organizations; and implementing group-wide corporate governance. Hopt advises, however, that corporate governance measures appropriate for banks should not spill indiscriminately into the general corporate sector.

Lucian A. Bebchuk’s 2010 paper, ‘How to Fix Bankers’ Pay’, focuses on one of the most important, and most controversial, issues in the contemporary corporate governance of banks: executive compensation. Bebchuk argues that pay practices for bank managers incentivize risk-taking by rewarding short-term financial results and stock price performance. Bebchuk would reform compensation practices to ensure tighter alignment between pay and long-term performance. Senior executives, in his view, should not collect and retain bonuses when long-term results prove negative. Equity compensation, in his view, should be structured to prevent executives from over-weighting short term stock price performance. To prevent circumvention, Bebchuk would restrict hedging and derivative transactions. Calls for

reforms to bankers’ pay have not gone unheeded: regulators in the aftermath of the financial
crisis of 2007-2009 greatly upgraded their surveillance of pay arrangements and insisted that
compensation packages be structured to discourage excessive risk-taking and short-term
thinking.

Central Banks

I have included several articles drawn from the vast and sophisticated literature on
central banks. Unlike the papers discussed above, the central bank literature tends to be
produced by macro-economists and reflects the characteristic concerns of that discipline.
Leading issues in this literature concern the role of central banks, their history and future
prospects, and optimal strategies for monetary policy.

Charles Goodhart’s 2010 paper, ‘The Changing Role of Central Banks,’^44 provides a
historical overview authored by a leading scholar who has also played important roles at two
central banks (the Hong Kong Exchange Fund and the Bank of England’s Monetary Policy
Committee). Goodhart argues that central banking experienced three stable epochs (with
intervening periods of instability): the Victorian era (1840s until 1914); the decades of
government control (1930s until the end of the 1960s); and the ‘triumph of the markets’
(1980s to 2007). Each epoch was characterized by different balances between central bank
independence and government control and between a focus on price stability and concern for
the stability of the financial system. In Goodhart’s view, the financial crisis of 2007–2009
triggered another interregnum of uncertainty pending establishment of a new consensus. He
predicts that the next dispensation will involve more intrusive regulation and less reliance on
market mechanisms. Goodhart predicts that central bank independence will be more limited

Papers No. 326, vii, ix, 1–23.
than in the recent past, although he hopes that these institutions will not return to subservience to political actors.

Ben S. Bernanke and Mark Gertler’s 2001 paper, ‘Should Central Banks Respond to Movements in Asset Prices?’, provides a somewhat eerie preview of the actual situation that later confronted one of the authors (Bernanke) during the credit and housing bubble of the 2000s. The issue is one of central importance: how should the central bank respond when an asset bubble takes hold in an economy? Should the bank tighten credit or take other measures to ‘pop’ the bubble, or should it allow the bubble to expire on its own and provide liquidity in order to ensure a soft landing for the macro economy? Bernanke and Gertler’s answer is clear: they find few benefits from popping asset bubbles. Beyond this, they warn that central bank intervention in asset prices carries risks given unpredictable effects on market psychology. This article, written in 2001, was consistent with the approach recently taken in response to the tech bubble of 1999–2000: the Fed made no attempt to pop the bubble but rather injected liquidity once the price spiral had broken. The results appeared to be positive: the American economy experienced a mild recession in 2001 and thereafter roared back to health. From a perspective informed by the financial crisis of 2007–2009, however, Bernanke and Gertler’s conclusions might be re-examined. Following the playbook set forth in the article, the Federal Reserve did not attempt to pop the credit bubble of the 2000s but rather sought to achieve a soft landing by making credit readily available on the downside. This time the strategy did not work out so well: the spontaneous popping of the bubble proved to be disastrous and the Fed’s loose-money policy response, while it may have staved off a worse disaster, did little to prevent a painful and costly period of market turmoil.

Future work will need to take account of more recent events when assessing the proper role of a central bank in a bubble economy.

Alberto Alesina and Lawrence H. Summers’ 1993 article, ‘Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence,’ is an example of the literature on the relationship between central bank independence and macro variables (other contributors include but are not limited to Alex Cukierman, Sylvester Eijffinger, Stanley Fischer, Charles Goodhart, Vittorio Grilli, Donato Masciandaro, Adam Posen, Kenneth Rogoff, and Guido Tabellini). Alesina and Summers find that while central bank independence promotes price stability, it has no measurable impact on real economic performance.

Consumer Banking

The financial crisis of 2007–2009 emerged from problems in securities backed by U.S. subprime mortgages. It turned out that during the 2000s banks and other originators had sold mortgages to borrowers who did not understand their terms or could not afford to repay. Too often, also, originators submitted applications containing incomplete or falsified information. These practices were unfortunate for borrowers, and also harmful for the national and world economies once the weaknesses in mortgage-backed securities triggered a global crisis. In the aftermath, scholars, policymakers and politicians intensified their scrutiny of consumer issues in financial markets.

Oren Bar-Gill’s 2009 paper, ‘The Law, Economics and Psychology of Subprime Mortgage Contracts,’ employs a behavioral-economic framework to analyze problems in

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the subprime market. Bar-Gill argues that design features of subprime mortgages can be explained as a rational response to the imperfect rationality of borrowers. Accordingly, in his view, many such contracts were not welfare maximizing. Bar-Gill insightfully demonstrates that if consumers display limited rationality, rational behavior by credit providers will not generate economically efficient outcomes. A logical conclusion is that law should intervene to correct this market failure.

Bar-Gill and Elizabeth Warren’s 2008 publication, ‘Making Credit Safer,’48 one of the most influential papers ever written on consumer issues in banking, draws on an analogy between financial and tangible products. If the law provides protections against dangerous consumer products, why should it not do the same for perilous financial products? The authors proposed a new federal regulator that would have both the authority and the incentive to regulate the safety of consumer credit products. That agency quickly came into being: the Consumer Financial Protection Bureau, established by the Dodd-Frank Act of 2010, is one of the most powerful federal regulators established by Congress over the past fifty years. Warren herself was elected to the United States Senate in 2012, in part on the strength of that achievement.

Concerns about consumer interests in banking are not limited to worries about exploitation, danger or abuse. A related strand of research explores mechanisms by which the financial system can be enlisted to provide meaningful assistance to those most in need. Organizations such as community development banks and laws such as the Community Reinvestment Act are designed to serve that purpose, as are a host of entrepreneurial microfinance ventures. Michael S. Barr’s 2004 paper, ‘Microfinance and Financial

Development,\textsuperscript{49} argues that microfinance is inappropriately marginalized in the policy debate if conceived of as an anti-poverty strategy. Rather, in Barr’s view, it should be seen as an integral component of a developing country’s broader financial development strategy. Implicitly, Barr calls on finance economists to include microfinance as a constituent in their models of financial markets.

The Future

Any compendium of research would be incomplete without some evaluation of what remains be accomplished. Much has been written about the economics of financial law, but large gaps remain – gaps that become all the more salient as familiar areas become densely populated. The following areas (among other) call out for additional work.

Despite the attention given to capital in recent years, we know little about it. Researchers have never fully understood how to ascertain its cost. We do not understand why capital in banks dropped over much of the twentieth century. Above all, we lack a clear understanding of how much capital a bank should hold. The magic number of 8 percent total capital to risk adjusted assets, enshrined in three Basel accords, has no science behind it; the figure was adopted as a compromise and retained as a symbol. Economists could improve banking regulation if they were able to provide information on what level of bank capital maximizes social welfare.

Economic research in banking has the virtue, but also the limitation, that most of the seminal work has been conducted by researchers working within the framework of neoclassical finance theory. This approach has fostered an impressive penetration into fundamental questions, but also has limited the scope of research. For example, the standard

analysis of banks focuses on ‘liquidity’ but fails to pay much attention to the fact that liquidity is needed for payments and that bank deposit accounts are both payment mechanisms and business lines. More generally, the insights of other disciplines – most importantly behavioral finance – can enhance our understanding of banking firm. Behavioral economists have already contributed to the literature on banking issues; more work using this approach could be enlightening. Joint work by lawyers and economists also holds promise given the institutional knowledge that attorneys can contribute.

We lack information about the effects of bank regulation. Even longstanding issues, such as the efficacy of on-site bank examinations, are shrouded in uncertainty. Here the research gap is partly due to the refusal of bank regulators to provide information about bank examinations, even ones that have occurred so far in the past as to pose no threat. One cannot but wonder whether this intransigence might be due to a fear of what research might uncover. The plethora of post-crisis regulatory initiatives has created even more research opportunities. To what extent is proprietary trading by banking firms – now banned in the United States under the Volcker Rule – a threat to safety and soundness? How much liquidity should banks hold against their liabilities? What is the effect of enhanced risk management operations? How did the enormous fines levied against financial firms affect how they are operated or managed? How can bank portfolios be modeled to take account of the risk of panics?

Intellectual disciplines are like coral reefs. The work of researchers at any given time is the living tissue that grows on a supporting base of past research. The articles reproduced in this compendium are parts of that base – contributions that are likely to have lasting influence because they crystallize a new perspective on old problems, or papers that identify
a problem previously unknown to theoretical inquiry. I hope that grouping these works in a single source will serve the convenience of researchers and offer an overview of a topic that is at once fascinating, frustrating, and fundamental.