Toward a More Resilient Financial System?

Joanna Gray[*]

I. Introduction

> The responsibility of the [Financial Policy] Committee in relation to the achievement of [the Bank of England's financial stability] objective relates primarily to the identification of, monitoring of, and taking of action to remove or reduce, systemic risks with a view to protecting and enhancing the *resilience* of the UK financial system.[1]

The concept of "resilience" in the context of financial systems calls for closer analysis, as most of the current efforts to reshape financial systems seek to render them more resilient. Resilience has become a necessary complement to the paradigm shift taking place in global financial regulation toward "macroprudential" regulation—a term used to describe a new viewing platform and decisionmaking plane for financial regulation. From this new perspective, regulators can address the state of the financial system as a whole, as well as its component parts. This, it is hoped, will better equip regulators to chart patterns of systemic risk and to counter such risk before it can materialize and imperil financial stability.[2] That is a big task. As such, it becomes all the more important to develop, alongside macroprudential regulation, complementary efforts to engineer legal, economic, and even psychological solutions that increase self-reliance and resilience of individuals and communities in the face of financial losses. This resilience-building agenda has received much less attention and comment to date than the agenda concerned with systemic risk, despite resilience building being arguably more important given the

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[*] Professor of Financial Regulation, Newcastle Law School.

1. Bank of England Act, 1998, c. 11, § 9C(2) (U.K.), *as amended by* Financial Services Act, 2012, c. 21 (U.K.) (overhauling the regulation of the banking and financial services in the United Kingdom).

2. Priya Nandita Pooran, *Macro-Prudential Supervision—A Panacea for the Global Financial Crisis?*, 3 LAW & FIN. MKTS. REV. 534 (2009); Gabriele Galati & Richhild Moessner, *Macroprudential Policy—A Literature Review* (Bank for Int'l Settlements, Working Paper No. 337, 2011), *available at* http://www.bis.org/publ/work337.htm.

inherent uncertainties of mapping and countering systemic risk in finance.

Against this backdrop, it is worthwhile to examine the developing body of thought surrounding resilience, although much more empirical research must be done before conclusions can be reached about its potential impact on the future course of the financial system. This Article seeks to illustrate how legal and regulatory measures that foster resilience have become the bedfellows and ultimate backstop to macroprudential regulation. It argues that, in the rush to build the institutional framework for a more resilient financial system, there has been precious little discussion of, firstly, what the term "resilience" might mean in the context of money and financial markets and, secondly, who and what exactly we wish to become more resilient. What are the subjects of resilience-building measures, and might there be conflicts of interest latent in this agenda? Will fostering greater resilience in *A* potentially harm the resilience of *B*? What are the characteristics of "the more resilient financial system" that is being repeatedly called for? This Article examines the literature emerging on adaptive and resilient responses to catastrophe and systemic shocks and asks what building a more resilient financial system might mean. It concludes by raising the possibility that some of the current forms of "collaborative consumption" that are emerging in the United States and United Kingdom, as well as the growth in nonbank sources of lending, might actually be building a more novel form of resilience into the financial system, should they result in a broader shift away from the near monopoly enjoyed by bank-created money as objectified social trust.

II. THE SIGNIFICANCE OF RESILIENCE TO FINANCIAL REGULATORY EFFORTS CONCERNING SYSTEMIC RISK

The development of macroprudential regulation as an extra plane of financial regulation is commonly justified in terms of its ability to concern itself, first and foremost, with financial stability and systemic risk.[3] However, in post-crisis discussions of global financial reforms, the term *resilience* is often coupled with *stability*, and regulatory reforms are targeted at developing a more stable *and* resilient financial system.[4] This coupling of the systemic-risk and resilience-building agendas is a wise,

3. BANK OF ENG., THE ROLE OF MACROPRUDENTIAL POLICY (2009), *available at* http://www.bankofengland.co.uk/publications/Documents/other/financialstability/roleofmacroprudentialpolicy091121.pdf.

4. FIN. STABILITY FORUM, REPORT OF THE FINANCIAL STABILITY FORUM ON ENHANCING MARKET AND INSTITUTIONAL RESILIENCE (2008), *available at* http://www.financialstabilityboard.org/publications/r_0804.pdf.

implicit recognition of the need for both the financial system as a whole and its individual components to be more able to withstand any future shock of the magnitude of the 2008 banking crisis.

Resilience is an expressed objective of many of the proposed tools of macroprudential regulation. But it can also be interpreted as a backstop mechanism of local social defense should systemic risk manifest itself again in global financial systems.[5] Examples of legal and regulatory measures motivated by this second meaning of resilience are provided by the U.K.'s introduction of a bespoke insolvency and resolution framework for the banking sector in the Banking Act of 2009, as well as the strengthening of deposit protection and investor compensation schemes across Europe in the wake of the financial crisis.[6] The proposed use of countercyclical capital-regulatory tools as a technique of macroprudential regulation is an example of the view of resilience as resistance to stresses and shocks. Resilience is now as central to the renewed effort to promote financial stability as is systemic risk. The exhortations of the G20 world leaders to the Financial Stability Board, the International Monetary Fund (IMF), and bodies such as the Basel Committee on Banking Supervision as to the need for more resilient financial systems and markets from the onset of the financial crisis have treated financial stability and resilience as inextricably linked.[7] Indeed, the international template for bank regulation, the package of measures known as "Basel III," is described in its title as "A Global Regulatory Framework for More Resilient Banks and Banking Systems."[8] In the United Kingdom, successive parliamentary select committee reports on the financial crisis and prelegislative consultations conducted by both current and previous governments have emphasized resilience building as key to achieving

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5. Resilience in this context suggests an ability to bounce back or recover faster from the effects of systemic shock so that the consequences of widespread failure and loss are felt less keenly by those affected, whether they are financial institutions that have become insolvent (a fast and efficient insolvency procedure may salvage viable parts of the businesses still), nonfinancial businesses that suffer a freeze in the supply of bank credit (resilience may be increased by the existence of alternative sources of funding or means to procure payment of essential bills for such businesses to keep trading), or households with stored value in failed financial institutions (faster, bigger payouts from stronger deposit insurance schemes will dispel the feeling of disaster and loss of general economic confidence on the part of those who lose savings through bank failure).

6. The steady strengthening of the cushioning effect of these deposit protection regimes that has taken place through legislative and regulatory reform since 2007, in both the U.K. and the European Economic Area (EEA), is outlined in FIN. SERVS. AUTH., DEPOSIT PROTECTION: RAISING CONSUMER AWARENESS, 2012, CP 11/29 (U.K.).

7. *See generally* Douglas W. Arner, *Adaptation and Resilience in Global Financial Regulation*, 89 N.C. L. REV. 1579 (2011).

8. BASEL COMM. ON BANKING SUPERVISION, BANK FOR INT'L SETTLEMENTS, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS (2011), *available at* https://www.bis.org/publ/bcbs189.htm.

greater financial stability.[9] Still, the current efforts to rebuild and reshape the financial system fail to engage in depth the necessary preliminary questions about what resilience might mean and who should be the subjects of resilience-building measures.

Turning to the current U.K. draft legislation, there is little guidance to be found on the meanings or characteristics of resilience. Indeed, the concept is only mentioned twice at the legislative level and is defined nowhere. Included in the core legislative mandate of the new macroprudential regulatory committee, the Financial Policy Committee (FPC), is the enhancement and protection of resilience in the financial system, which is reflected in the expressed goal of the FPC's contribution to the Bank of England's financial-stability objective: "identification of, monitoring of, and taking of action to remove or reduce systemic risks."[10] Resilience is also an expressed component of the new Financial Conduct Authority's operational objective of protection and enhancement of the integrity of financial markets: "integrity" is defined partly in terms of "soundness, stability and resilience."[11]

The lack of an adequate definition of resilience can be contrasted with both "financial stability" and "systemic risk," which feature far more prominently in the draft legislation with characteristic indicators of systemic risk set out in the legislation. But nowhere is any guidance given as to the characteristics of a resilient financial system or any clarification of whose resilience we should be most concerned with to promote a more resilient financial system.

Basel III talks of the need for a more resilient banking *sector* and more resilient *individual* banks as intertwined with a more resilient banking *system*. Thus, resilience has both a macro angle and a micro angle, "as greater resilience at the individual bank level reduces the risk of system-wide shocks."[12] There is, of course, far more to the financial system than banks and the banking sector, and the U.K. legislation avoids the trap of an overly specific definition, despite the fact that the term "U.K. financial system" is used again and again in the defined objectives of the

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9. *See* HOUSE OF COMMONS TREASURY SELECT COMMITTEE, FINANCIAL REGULATION: A PRELIMINARY CONSIDERATION OF THE GOVERNMENT'S PROPOSALS, 2010-11, H.C. 430-I (U.K.); HOUSE OF COMMONS TREASURY SELECT COMMITTEE, BANKING REFORM: SEVENTEENTH REPORT, 2007-8, H.C. 1008 (U.K.). These official government reports from both the previous Labour and the current coalition governments include HM TREASURY, A NEW APPROACH TO FINANCIAL REGULATION: THE BLUEPRINT FOR REFORM, 2011, Cm. 8083 (U.K.); HM TREASURY, REFORMING FINANCIAL MARKETS, 2009, Cm. 7667 (U.K.).

10. Bank of England Act, 1998, c. 11, § 9C(2) (U.K.), *as amended by* Financial Services Act, 2012, c. 21 (U.K.).

11. Financial Services & Markets Act, 2000, c. 8, § 1D(2)(a) (U.K.), *as amended by* Financial Services Act, 2012, c. 21 (U.K.).

12. BASEL COMM. ON BANKING SUPERVISION, *supra* note 8, at 2.

new regulatory bodies. The U.K. financial system is defined loosely and nonexhaustively as (1) financial markets and exchanges, (2) regulated activities, and (3) other activities connected with financial markets and exchanges.[13]

So construed, the new regulatory bodies in fact have a wide mandate to take an expansive and imaginative view of what constitutes the U.K. financial system and, therefore, who or what might be the subjects of resilience-building measures in the future.[14] I return to this point later to make empirical arguments that resilience-building measures are needed far beyond the parameters of the official regulated financial sector, and that achieving a resilient financial system may in fact call for a fresh look at the concept of "individual financial citizenship."[15]

III. RESILIENCE IN OTHER CONTEXTS

It is important to now look to resilience in other contexts because, as established in the preceding Part, there is no definition of resilience in the U.K. financial context. Additionally, this Part identifies key aspects of resilience in other contexts that may be transferable to the financial sector or may at least inform our analysis of what it means to be resilient—and who or what should be resilient—in the financial context. These key aspects of resilience include (1) the relationship between resilience and vulnerability; (2) the power of resilience to enable recovery and its potential to release and employ imagination and creativity; (3) the potential for resilience-building efforts to create tension between government and individuals; and (4) perceived underlying motives or incentives for resilience efforts that must be acknowledged.

An examination of the meanings of resilience in other areas such as climate change, ecology, medicine, psychology, military efficacy, supply-chain management, and technological safety reveals that resilience

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13. *See* Financial Services & Markets Act, 2000, c. 8, § 1D(2)(a) (U.K.), *as amended by* Financial Services Act, 2012, c. 21 (U.K.).

14. *See* BANK OF ENG., INSTRUMENTS OF MACROPRUDENTIAL POLICY 8–9 (2011) (containing adequacy rules for systemically important U.K. financial institutions recommended by the Independent Commission on Banking).

15. Section 1C(2)(d)5(2)(d) of the Financial Services and Markets Act 2000, the U.K. legislation that currently tasks the Financial Services Authority (FSA) with its consumer-protection objective, requires the FSA to have regard for "the general principle that consumers should take responsibility for their decisions." For development and exploration of the related concept of financial citizenship, see JOANNA GRAY & JENNY HAMILTON, IMPLEMENTING FINANCIAL REGULATION: THEORY & PRACTICE ch. 6 (2006); GAIL PEARSON, FINANCIAL SERVICES LAW AND COMPLIANCE IN AUSTRALIA ch. 1 (2009); Joanna Gray, *Corporate Governance and Personal Finance: The Missing Link*, 4 J. CORP. L. STUD. 187 (2004); Toni Williams, *Empowerment of Whom and for What? Financial Literacy Education and the New Regulation of Consumer Financial Services*, 29 LAW & POL'Y 226 (2007).

can describe a system or an individual (human or material) subject. Yiheyis Maru, for instance, discusses the challenges of resilience measurement and distinguishes between these two levels, differentiating a system's ability to absorb disturbances and retain functionality from an individual's "ability or competence to function well, despite adverse life circumstances."[16]

A. Resilience and Vulnerability

Discussions of resilience often go hand in hand with discussions of vulnerability,[17] and resilient systems and people are seen to be those that exhibit flexibility and adaptivity. In an interesting discussion of the qualities of a resilient social system sited in the context of the many failures in response to Hurricane Katrina, Benigno Aguirre challenges the view of resilience and vulnerability as binary opposites.[18] Instead, he argues that the two are inextricably linked. According to him, they are, in fact, both agents of change to the development of adaptive capacity in any open social system. Aguirre argues that it is wrong to assume that indicators of vulnerability such as poverty or infirmity are directly correlated to a lack of resilience in a community with those characteristics. He links vulnerability to knowability of risk, arguing that vulnerabilities can often be latent signals of unknown risk.[19]

B. Imagination and Creativity

A more subtle understanding of what makes for a resilient social system or community is needed than seeing resilience simply as collective preparedness—the ability to rebound, recover functionality, and carry on much as before. The capacity to adapt and change, along with the capacity to imagine wholly new combinations of scenarios or events, is a key feature of a resilient system. Thus, Maru describes resilience as

> partly a recursive function of conscious awareness, planning, and training that anticipates or responds to the presence of vulnerabilities and tries to mitigate and provide solutions to them. These are all dimensions of resilient systems. Resilient actions do not merely reflect the capacity of systems to reconstitute themselves as they existed prior to the crisis, but show a system's ability to absorb, respond, recover, and reorganize from an internally or externally in-

16. Yiheyis T. Maru, *Resilient Regions: Clarity of Concepts and Challenges to Systemic Measurement* 1 (Commonwealth Scientific & Indus. Research Org., Working Paper No. 4, 2010) (Austl.).

17. *See generally* B.E. Aguirre, *Dialectics of Vulnerability and Resilience*, 14 GEO. J. ON POVERTY L. & POL'Y 39 (2007).

18. *Id.* at 39.

19. *Id.* at 42.

> duced set of demands which reveal the presence of vulnerability and bring about mitigation efforts. . . . [I]t is a never-ending open process, for multiple sources of often unanticipated demands create changes in the known dynamics of the systems. Past experiences cannot be used as the only source of information to anticipate new risks. Imagination, creativity, and careful historical reconstructions of past disastrous events, including both cross national and international scientific assessments of major crises and disasters, are needed to attempt to anticipate and prevent new risks' effects.[20]

The development of resilience in communities and individuals has become a matter of practical policy concern and interest at the European Union and at a national level in the United Kingdom. Recent research funded by the E.U. Citizens and Resilience Project, using the very different examples of a community response to a terrorist attack and the impact of music education on children, traces the development of the concept of resilience from its original perception as a given individual personality trait to its more recent conception as the recovery process of an organization, community, or individual.[21] The unit of the U.K. government responsible for emergency preparedness and disaster management, for instance, seeks to coordinate local governments, emergency and medical services, private businesses, infrastructure providers, contractors, regulators, and ordinary individuals to harness its efforts on a continuing basis in resilience-building measures and awareness-raising initiatives.[22]

C. Government–Individual Tension

Much of the resilience literature raises profound questions about the relationship among the official government sector, individuals, and local communities and, therefore, about the responsibility to avoid and respond to crises. Many commentators emphasize that fostering resilience requires a reorientation of belief about responsibility. They have argued that resilient systems take a grassroots, bottom-up, adaptive approach, often using a variety of networks of private and civil-society actors that interact successfully.[23] Thus, in the context of the mitigation and adaptation debate over climate policy, Peter Hayes argues that resilience should be seen as adaptive, emergent behavior driven by cities and local com-

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20. *Id.* at 43.

21. Hans te Brake et al., *Resilience from Concept to Practice*, *in* TIJDSCHRIFT VOOR VEILIGHEID 2 (2008) (published as part of the E.U. Citizens & Resilience Project).

22. *UK Resilience*, CABINET OFFICE, http://www.cabinetoffice.gov.uk/ukresilience (last visited Sept. 21, 2012).

23. Aguirre, *supra* note 17, at 58.

munities rather than markets or nation-states.[24] On the other hand, by using the example of telecommunications network systems and regulators' attempts to respond to crises to preserve their functionality (with illustrations of her argument sited in the failures of electricity supply and the subprime mortgage crisis, too), Barbara Cherry has questioned whether regulatory resilience is consistent with the sustainability of the rule of law.[25] She argues that the nonlinearity and the urgent nature of responses to crises, framed in terms of resilience, are caused by a function of both deregulatory policy and rapid social and technological change.[26] And she concludes that this response is antithetical to traditional notions of the rule of law. So resilience building may challenge established norms of institutional governance. Despite its focus on the telecommunications sector, Cherry's critique of regulatory attempts to foster resilience demonstrates the considerable challenges that macroprudential regulation will present to lawyers. Globalized finance has accelerated over time and space to present hazards and risks of systemic failure that demand the same kind of nonlinearity and the same element of surprise in regulatory response that they themselves manifest.

D. Motivations

Apart from the implications for the rule of law and democratic governance raised by the rapid response techniques that a resilience-building agenda may call for, questions regarding the motives of those calling for greater resilience may still arise. Pat O'Malley has offered a powerful critique of these policy agendas. Specifically, O'Malley uses the examples of the U.S. response to 9/11 and the U.S. military-resiliency programs focusing on networked warfare to sound a note of caution about whose interests are being served by the proliferation of resilience-building measures as the latest and most voguish response to the perennial problem of uncertainty.[27] O'Malley argues that resilience follows from other responses to the problems of governing under conditions of risk and radical uncertainty—namely, precaution, speculative preemption, and the enactment and preparedness characteristic of a post-9/11

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24. *See generally* Peter Hayes, *Resilience as Emergent Behaviour*, 15 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 175 (2009).

25. *See generally* Barbara A. Cherry, *Institutional Governance for Essential Industries Under Complexity: Providing Resilience Within the Rule of Law*, 17 COMMLAW CONSPECTUS 1 (2008).

26. Cherry terms the process "social acceleration of time." *Id.* at 3–4 (citing WILLIAM E. SCHEUERMAN, LIBERAL DEMOCRACY AND THE SOCIAL ACCELERATION OF TIME, at xv (2004)).

27. Pat O'Malley, From Risks to Resilience: Technologies of the Self in the Age of Catastrophes (May 11, 2012) (unpublished conference paper for the University of Chicago seminar "The Future of Risk"), http://ccct.uchicago.edu/media/files/the-future-of-risk/O'Malley_Resilience.pdf.

world attempting to more acutely incorporate risk techniques.[28] According to O'Malley, developing resilient individuals and communities that can encounter, and thrive in the face of, chaos and socioeconomic insecurity is an extension in many ways of the neoliberal view of individuals as entrepreneurial nomads.[29] He acknowledges,

> [I]t could be argued instilling people with techniques for optimism, resourcefulness, enterprise and social networking is no [b]ad thing. Nor is it more objectionable than any of the other programs in the past that have tried to make better subjects of us. And at least this does not project a narrow band of repressive moral imperatives . . . .[30]

But he points to the fact that some have seen a dark side to resilience programs as being an attempt to harness cognitive and emotional capacities of peoples to defensive ends.[31] Given the reach of resilience building far beyond military contexts, O'Malley is content to conclude merely on a note of caution rather than an outright critique of resilience techniques—pointing out that there is still much unknown about their performance and effects.

Some might retort that O'Malley sees resilience through a narrow lens—as a program of action led from the top down by the public and state authorities when, in fact, it can also be seen as efforts initiated from the bottom up. Indeed, while some of the recent developments in financial intermediation, trading, and payment mechanisms may at first sight appear unconnected and dissimilar, these mechanisms may all serve as evidence of this alternative view of resilience suggested by O'Malley. Initiatives as different from each other as, for example, peer-to-peer lending of business finance and collaborative consumption of leisure goods both actually arise from a desire on the part of their various participants for a greater degree of trust and resilience that is led from outside of the bank-dominated and officially regulated financial system. These initiatives are considered further in the next Part of this Article.

IV. CAN THINKING ABOUT WHAT GIVES RISE TO RESILIENCE HELP US RETHINK FINANCIAL MARKETS?

U.K. financial regulators are now charged with securing a stable and resilient financial system that is less likely to encounter the breakdown of trust and functionality that has characterized the world's finan-

28. *Id.* at 4.
29. *Id.* at 21.
30. *Id.* at 22.
31. *Id.* (citing MICHAEL DILLON & JULIAN REID, THE LIBERAL WAY OF WAR: KILLING TO MAKE LIFE LIVE 138–40 (2009)).

cial markets and has spilled over into the economy at large, as trust and confidence in financial institutions, markets, financial assets, and currencies remain low. Any system has its component parts, and the financial system ultimately consists of individuals exercising those aspects of their citizenship that involve them at the various chains and channels of financial intermediation (be they of business or personal finance) constituting the financial system. The ambit of financial regulation has sought to protect and promote the exercise of this citizenship, as well as map it onto the domain in which it takes place—the financial system. But there are signs that the nature of this domain may be becoming more diverse and less familiar as the very individuals that regulation seeks to protect begin to experiment with modes of financial intermediation that lie outside of what we have recently come to imagine as the financial system. If the universe of the financial system is expanding and fragmenting, this has implications for the mission of regulators to embed stability and resilience. These are the issues to which this Article now turns.

Along with home ownership, the predominant way households in Anglo-Saxon economies have sought to store and exchange value is through money and financial assets that flow through the banking sector.[32] This has inevitably led to banks and the banking system becoming central to the lives of everyone in these economies, save the most marginal and excluded members of society. Since the retreat from collective provision via local mutualism or state-funded welfare, individuals in these economies have been exhorted to become responsible "financial citizens"[33] by building up a lifetime store of wealth, often through the medium of tax-privileged financial products developed by the regulated financial sector acting in tandem with government. Borrowing and debt have been depicted to both households and governments as techniques of financial management that can lead to a better and more fulfilled future.[34] Techniques of financial innovation such as securitization provided reassurance that the default risks were less rather than more of a problem.[35]

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32. ISABELLE YNESTA, ORG. FOR ECON. CO-OPERATION & DEV., HOUSEHOLDS' WEALTH COMPOSITION ACROSS OECD COUNTRIES AND FINANCIAL RISKS BORNE BY HOUSEHOLDS (2008), *available at* http://www.oecd.org/finance/financialmarkets/42143434.pdf.

33. CRAIG BERRY & VALENTINA SERRA, INT'L LONGEVITY CTR., FINANCIAL CITIZENSHIP: RETHINKING THE STATE'S ROLE IN ENABLING INDIVIDUALS TO SAVE 17–20 (2012), *available at* http://www.ilcuk.org.uk/index.php/ publications/publication_details/financial_citizenship.

34. Ross Levine, *Financial Development and Economic Growth: Views and Agenda*, 35 J. ECON. LIT. 688, 688–726 (1997).

35. For example, the International Monetary Fund published a report in 2006 on U.K. financial stability, noting approvingly the risk-reduction capacity of the market in collateralized derivative securities. INT'L MONETARY FUND, UNITED KINGDON: STAFF REPORT FOR THE 2005 ARTICLE IV CONSULTATION 21–22 (IMF County Report No. 06/87, Mar. 2006), *available at* http://www.imf.org/external/pubs/ft/scr/2006/cr0686.pdf.

Together, various financial-citizenship initiatives and the very existence of a protective layer of regulatory oversight encouraged households and individuals to engage the regulated financial sector on a widespread basis in order to meet financing and savings needs.[36]

Bank runs and bank failures also have implications beyond the resilience of the financial sector. The financial citizen, with her trust shaken by the latent fragility of the financial system, may seek to render herself and her community more resilient to these future shocks by decoupling from the financial system and searching for means of objectifying value in ways that appear, at least to her, more resilient and impervious to the uncertainties of the future. This has implications for both the financial sector and the government, as post-crisis public disaffection with a large swathe of the regulated financial sector may turn people away from the use of banks to fulfill savings, investments, and payment needs. Indeed, trends are emerging in the United Kingdom showing the paying down of household debt,[37] a drop in retail savings and investment through instruments linked to markets,[38] and a renewal of interest in and use of mutual financial institutions, especially building societies[39] and credit unions.[40] There is growing official realization that greater use of nonbank sources of financing, such as online receivables exchanges and peer-to-peer lending platforms, may help combat the shortfall in business

36. JAMES BANKS & SARAH TANNER, INST. FOR FISCAL STUDIES, HOUSEHOLD SAVING IN THE U.K. 104 (1999), *available at* http://www.ifs.org.uk/comms/hhs.pdf.

37. Statistics from the British Bankers Association (BBA) on high-street banking in the United Kingdom showed that in May 2012 net repayment of mortgage debt exceeded net new lending, continuing an eight-month trend of increasing levels of debt repayment. British Banker's Ass'n, *May 2012 Figures for the Main High Street Banks* (June 27, 2012), *available at* http://www.bba.org.uk/media/article/may-2012-figures-for-the-main-high-street-banks.

38. A July 27, 2012, press release from the U.K. Investment Management Association shows a marked year-on-year drop in funds under management, net retail sales, and net individual savings account (ISA) sales in the United Kingdom. An ISA is a form of tax-privileged wrapper for securities-markets investments available to every individual in the UK. Press Release, Inv. Mgmt. Ass'n, First Half of 2012 Sees Strong Investment Fund Sales - IMA Statistics Reveal (July 27, 2012), *available at* http://centrallobby.politicshome.com/members/member-press/member-press-details/newsarticle/first-half-of-2012-sees-strong-investment-fund-sales-ima-statistics-reveal///sites/investment-management-association/.

39. Press Release, Bldg. Soc'ys Ass'n, Lending by Mutuals Grows Strongly in the First Half of 2012 (June 30, 2012), *available at* http://www.bsa.org.uk/mediacentre/press/monthlystats_june12.pdf.

40. ASS'N OF BRITISH CREDIT UNIONS LTD., "TO CUT A LONG STORY SHORT…": ABCUL ANNUAL REPORT 14 (2011), *available at* http://www.abcul.org/filegrab/documents/807c187bdd39bfb4f280ecbcb8a9c35a/6405-abcul-annual-report-final.pdf (extracting FSA data showing marked growth in assets, membership, and lending by U.K. credit unions).

financing currently affecting the small- and medium-sized business sector in particular.[41]

Recent growth in peer-to-peer lending schemes, such as ZOPA in the United Kingdom[42] and Prosper.com in the United States, appears to signal that the landscape of financial intermediation is indeed being reshaped quite radically.[43] Experimental research into U.S. peer-to-peer lending reveals that the perceived trustworthiness of listed borrowers increased the likelihood of obtaining a loan above all other factors—an interesting finding, given the assumption that a legal system with well-developed contract-enforcement mechanisms would function as an institutionalized substitute for trust.[44] Roman Tomasic and Folarin Akinbami have used well-publicized breakdowns in trust in the wholesale financial markets to argue that trust is as key to the resilience of these markets as it is to retail finance.[45] Their argument that there is more to resilience than efficient enforcement of contracts echoes the growing clamor in economics literature for a deeper understanding of the driving forces of financial systems than those offered by classical economics.[46]

Peer-to-peer lending and payment systems not based on banks have been used to call for the early adoption of common data standards within finance in order to foster the development of these types of new entrants to the financial system. For example, Robleh Ali and colleagues have argued that "[w]ith open access to borrower information, held centrally and virtually, there is no reason why end-savers and end-investors cannot connect directly. The banking middle men may in time become the surplus links in the chain."[47]

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41. DEP'T FOR BUS. INNOVATION & SKILLS, BOOSTING FINANCE OPTIONS FOR BUSINESS 31 (2012), *available at* http://www.bis.gov.uk/assets/biscore/enterprise/docs/b/12-668-boosting-finance-options-for-business.pdf.

42. Peer-to-peer lending sites currently operating in the United Kingdom—ZOPA, Ratesetter, Crowdcube, and Funding Circle—have now lent over £250 million since they began operating in 2005. Simon Gompertz, *Peer-to-Peer Lending via the Internet Hits £250m*, BBC NEWS (June 8, 2012), http://www.bbc.co.uk/news/business-18370777; *see also* ANDY DAVIS, CTR. FOR STUDY OF FIN. INNOVATION, SEEDS OF CHANGE: EMERGING SOURCES OF NON-BANK FUNDING FOR BRITAIN'S SMES (2012).

43. *See* DAVIS, *supra* note 42, at 3–4.

44. Jefferson Duarte et al., Trust and Credit 30–32 (June 2, 2010) (Am. Fin. Ass'n 2010 Atlanta Meetings Paper), *available at* http://ssrn.com/abstract=1343275.

45. Roman Tomasic & Folarin Akinbami, *The Role of Trust in Maintaining the Resilience of Financial Markets*, 11 J. CORP. L. STUD. 369 (2011).

46. Helge Peukert, *Dysfunctional Aspects of Contemporary Financial Markets: Diagnosis and Prescription* 33 EUR. J. L. & ECON. 321 (2012).

47. Robleh D. Ali et al., Towards a Common Financial Language, Presentation at Securities Industry & Financial Markets Association Symposium: Building a Global Legal Entity Identifier Framework 18 (Mar. 14 , 2012).

Although some see newer sources of financing that sideline banks as a welcome trend toward a more democratic form of finance,[48] there is still little empirical evidence relating users' motives, perceptions, and understanding of these nonbank sources of funding to the extent and enforceability of their substantive legal and regulatory rights. Regulators have identified the potential risks of some of these new lending platforms and have called for regulatory uncertainty surrounding peer-to-peer lending to be addressed, along with greater consumer information and the use of risk warnings by crowd-funding platforms.[49]

V. RESILIENCE, BANKS, AND MONEY

This Article now shifts from exploring the meanings of resilience that ought to underlie building a more resilient financial system, to identifying who and what should be wrought more resilient and how this might be best achieved. Because we have hitherto considered the resilience of the financial system as inextricably bound to the fate of banks and "sound and safe" money, this Part briefly analyses the vast and too-often-neglected topic of the nature of money, including the key constitutive role of private bank debt. It concludes by asking whether a plural vision of money would enable increased resilience. The decline of trust in and between banks that has characterized the financial crisis calls for closer engagement with the nature of money itself and, in particular, the relationship between banks and money that has developed over time. The essence of a bank run is, after all, loss of trust in the whole idea of money being safe and secure in the bank—an idea that, in an age of fractional reserve banking, was always somewhat of a fiction, however powerful.[50] From the standpoint of a resilience-building agenda, it is significant if individuals begin to seek alternatives to banks as stores of value and fiat monies as means of payment without recourse to bank debt (specifically, deposits as a means of fulfilling these functions). Bypassing banks as conduits of money could avoid the negative externalities of future banking crises because our store of objectified social trust would no longer repose within the banking sector as it does today. But the relationship between banks and money requires closer analysis before speculating on whether a more pluralistic landscape of objectified value is a realistic

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48. Merryn Somerset Webb, *How People Power Is Changing Banks*, FIN. TIMES (June 22, 2012), http://www.ft.com/cms/s/0/da198458-bbcc-11e1-9436-00144feabdc0.html#axzz27AQ0DyTz.

49. FIN. SERVS. AUTH., COORDINATION COMMITTEE ANNUAL REPORT 2011/2012 (2012), *available at* http://www.fsa.gov.uk/static/pubs/other/cc-annual-report-2012.pdf.

50. JOSH RYAN-COLLINS ET AL., WHERE DOES MONEY COME FROM?: A GUIDE TO THE UK MONETARY AND BANKING SYSTEM 11 (2011).

possibility. This, in turn, calls for a brief consideration of the nature of money itself from the viewpoint of a number of disciplines.

Despite mainstream economists' obvious continuing concern with measures and effects of the money supply on the economy, they have paid scant attention to the characteristics of money itself. As Josh Ryan-Collins and colleagues have pointed out, "[m]any people would be surprised to learn that even among bankers, economists, and policymakers, there is no common understanding of how new money is created."[51] Through the lens of a commercial transactional lawyer, Roy Goode evaluated the question, What is money? Goode concluded that the question only assumes practical significance because of the need within commerce and trade for a universal system of payment.[52] David Bholat arrived at a similar conclusion after sketching out the changing view of money in the history of economic thought.[53]

In their neglect of the dominant role that private bank debt plays in money in the United Kingdom, many economists have ignored its potential to expose the real economy to the fragility and shock similar to that which results from the maturity mismatch inherent in a banking model based on sight deposits.[54] For this reason, it is possible to take issue with the current orthodoxy that increasing levels of bank credit and lending by the financial sector are necessarily the best ways to foster recovery and economic development. So long as our notions of recovery, economic development, and national well-being are measured in terms of money, without sufficient analysis of what money itself is and why and how certain types of debt assumed such a near monopoly as shorthand for objectifying value, the way forward to a more resilient financial and economic system will remain blocked.

For if we are asking what money is, it is helpful to turn to its historical roots. Christine Desan has traced the history of modern money to the formation of the Bank of England in 1694, and she highlighted how money was very much a creature of the state, which was faced with limitations on its ability to borrow against future revenues in the system of coinage then in widespread use.[55] The solution came in the form of as-

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51. *Id.* at 3.

52. ROY GOODE, COMMERCIAL LAW (1995) (cited in agreement by CHARLES PROCTOR, *The Concept of Money*, *in* MANN ON THE LEGAL ASPECT OF MONEY (6th ed. 2005)).

53. "Money may be defined as a special form of credit which conventionally acts as a means of final payment." David Bholat, *Money, Bank Debt, and Business Cycles: Between Economic Development and Financial Crises*, *in* SECURED TRANSACTIONS AND THE FINANCIAL CRISIS (Orkun Akseli ed., forthcoming 2013).

54. *See id*.

55. CHRISTINE DESAN, MAKING MONEY: COIN, CREDIT AND THE COMING OF CAPITALISM IN THE ANGLO-AMERICAN WORLD 9–10 (forthcoming).

signable interest-bearing bills and, subsequently, bank notes from the Bank of England, itself a consortium of private investors.[56] The Bank's promises to pay the government were used to pay its own obligations and, crucially for their public legitimacy, were accepted as payment of tax debts at the face value of the notes:

> By the end of the seventeenth century, the government and the Bank, in concert with individuals, had groped their way to a remarkable arrangement. They had inaugurated a paper currency that was tied to specie as the unit of account. . . . It passed hand to hand and held purchasing power. Each side of the triangle benefited from the arrangement. The remaining question is—how much?[57]

Desan takes issue with many conventional accounts of the spontaneous development of money in response to the market's invisible hand:

> [T]he fingerprints of public authority, along with those of its private allies and the larger community, were all over the new medium. It had its impetus in an effort by the government to borrow in a form that multiplied liquidity, creating monetarized promises to pay and enmeshing public officials and private lenders in a web of reciprocal relationships.[58]

This perspective on how state and private banking interests originally constituted money resonates today, as we see these two sets of actors still locked together to kick-start the supply of money through an increase in bank credit and lending once more.[59]

Whatever its origins, a shortage of money as we now know it and constitute it in law and practice in the economy has clearly led to a lowering of economic activity, confidence, and living standards. If the goal is to foster greater resilience in the face of such a decline in the banking system, perhaps we should shift focus away from restoring bank lending and toward rethinking the role of money in society.

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56. *Id.* at 18–19. The bank's capital was not fully called up. In effect, the government was using private promises to pay off the wealthy as collateral to secure the acceptability of the notes it used to pay other members of society.

57. *Id.* at 40–41.

58. *Id.* at 51.

59. An agreement between the U.K. government and major U.K. banks known as "Project Merlin" involves regular dialogue between banks and the government with a view to boosting bank lending to small- and medium-sized enterprises especially. For an overview of this agreement, see Press Release, HM Treasury, Government Welcomes Banks' Statements on Lending 15% More to SMEs, and on Pay and Support for Regional Growth (Feb. 9, 2011), *available at* http://www.hm-treasury.gov.uk/press_17_11.htm. The Bank of England tracks the progress of banks' implementation of this agreement through its data on trends in lending. *Additional Data for Lending to UK Businesses, Including "Project Merlin" Data*, BANK OF ENG., http://www.bankofengland.co.uk/publications/Pages/other/monetary/additionaldata.aspx (last visited Sept. 21, 2012).

Here we can learn much from the vast anthropological literature on barter and the emergence of money, credit, and debt in different societies. For instance, David Graeber's recent work has emphasized that money and debt did not develop from barter, as is often supposed, but instead had a very different role in early English society of building relationships within communities, with barter being a one-off and instantaneous exchange generally used for dealing with strangers.[60] Caroline Humphrey has argued that barter's lack of a temporal dimension demonstrates that it can be seen as a means of exchange but not a means of payment. Thus, she concluded that the use of barter in post-monetary economies tends to coincide with money ceasing to function as a standard of value and that barter economies become less integrated and more atomized.[61] Reports from Greece of increasing use of barter to obtain goods and services bear testament to her thesis.[62]

Keith Hart, one of the foremost theorists of money, reviewed its origins in an essay and asked whether the current crisis of money is signaling the demise of national capitalism. He highlighted Polanyi's insight in *The Great Transformation*:

> [O]nly modern money combines the four functions (payment, standard, store and exchange) in a few "all-purpose" symbols, national currency. . . . Polanyi argued against the primacy of money as a medium of exchange and for a multi-stranded model of its evolution. For him and for Keynes, it was above all *a means of payment* or the "purchasing power" of citizens which drives modern economies, not so much a *medium of exchange* for buying or selling as such.[63]

A more plural vision of money than we currently have might serve to increase resilience to future banking shocks and crises insofar as it has the potential to liberate citizens and hence the economy from the effects of the contraction of bank credit.

Outside of the regulated banking and financial sector, too, emerges a sign that individuals, communities, and local economies are beginning to bypass traditional bank credit as a means of payment. Interest in alter-

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60. *See generally* DAVID GRAEBER, DEBT: THE FIRST 5,000 YEARS (2011).

61. Caroline Humphrey, *Barter and Economic Disintegration*, 20 MAN 49, 64 (1985). For an extensive review of the anthropological work on money and debt, see Gustav Peebles, *The Anthropology of Credit and Debt*, 39 ANN. REV. ANTHROPOLOGY 225, 225–40 (2010).

62. Rachel Donadio, *Battered by Economic Crisis, Greeks Turn to Barter Networks*, N.Y. TIMES (Oct. 1, 2011), http://www.nytimes.com/2011/10/02/world/europe/in-greece-barter-networks-surge.html?pagewanted=all.

63. Keith Hart, *A Crisis of Money: The Demise of National Capitalism*, OPENDEMOCRACY (Mar. 14, 2012), *available at* http://www.opendemocracy.net/ourkingdom/keith-hart/crisis-of-money-demise-of-national-capitalism.

native nonmonetary payment and exchange systems has increased since the financial crisis. For example, the networks fostered by LETSLink UK (UK Local Exchange Trading and Complementary Currencies Development Agency) aim to promote "local community-based mutual aid networks in which people exchange all kinds of goods and services with one another, without the need for money."[64] Similarly, the Transition Town network fosters various forms of bartering and nonmonetary and monetary exchange[65] at a local level and claims to be a network of "community-led responses to climate change and shrinking supplies of cheap energy, building resilience and happiness."[66]

Humphrey's analysis of nonmoney payment systems suggests that their use is associated with localization of economies.[67] While many of the developments described above do have roots in local geographic places, as Hart has pointed out, modern technology enables virtual and borderless exchanges to take place in a way that may contain profound challenges for accepted forms of political association and that increase the potential for what he terms "economic democracy":

> [W]e should look for the meaning of money in the myriad acts of remembering which link individuals to their communities. In this interpretation, the need to keep track of proliferating connections with others is mediated by money in its many forms as the principal instrument of collective memory.[68]
>
> To an increasing extent, it will be possible for people to enter circuits of exchange based on voluntary association and defined by special currencies of the sort pioneered in LETS systems. At the other extreme, we will be able to participate as individuals in global markets of infinite scope, using international moneys-of-account, such as the dollar, electronic payment systems of various sorts or even direct barter via the internet.[69]

The growth in use of sites such as Swap.com and Landshare, memorably termed "collaborative consumption,"[70] is made possible in part

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64. LETSLINK UK, www.letslinkuk.net/ (last visited Sept. 21, 2012). For a case study of one scheme, see generally Ethel Crowley, *Local Exchange Trading Systems: Globalising Rural Communities* (Inst. for Int'l Integration Studies, Trinity Coll. Dublin, Discussion Paper No. 37, 2004).

65. A local currency scheme operates in one Devon town in southwest rural England.

66. TRANSITION NETWORK, http://www.transitionnetwork.org (last visited Sept. 21. 2012).

67. Humphrey, *supra* note 61, at 64.

68. *See* KEITH HART, THE MEMORY BANK (2000).

69. Keith Hart, *Money in an Unequal World*, MEMORY BANK, http://thememorybank.co.uk/papers/money-in-an-unequal-world/ (last visited Sept. 21, 2012).

70. *See generally* RACHEL BOTSMAN & ROO ROGERS, WHAT'S MINE IS YOURS: THE RISE OF COLLABORATIVE CONSUMPTION (2010); *see also The Movement*, COLLABORATIVE CONSUMPTION HUB, http://www.collaborativeconsumption.com/the-movement (last visited Sept. 21, 2012) (describing the range and diversity of schemes of collaborative consumption).

due to the use of digital technology to shorten the chain of intermediation involved in consumption and exchange. This trend seems to support Hart's prediction that barter need not be determined by geography and seems to offer the types of special-purpose currencies as an alternative to general-purpose money. This trend also has the potential to threaten the centrality of money in peoples' lives as a means of constituting identity and connection.

The bottom-up message of proactive civic preparedness underlying these initiatives would seem to support the analyses of resilient systems from writers such as Aguirre and Hayes discussed above. But there is a need to better understand the performance of these systems under conditions of stress, including how they interact within established legal frameworks of enforcement and whether they are in fact developing enforcement infrastructure and institutions of their own. Even Hart, in his enthusiasm for these new modes of exchange, acknowledges that the problems of "timing, trust and delivery will not disappear overnight,"[71] and as ever, it will fall to the official legal system to resolve these problems when they occur. The questions of what payment obligations the law will recognize, and whether and how courts will deploy traditional contractual remedies in support of these alternative value systems, is also of concern.[72] New ways of expressing and exchanging value may challenge private lawyers as well as regulators, although the English common law doctrine of consideration would itself seem to be resilient enough to be equal to the task.[73] Indeed, the reference text for the U.K. courts on points concerning F. A. Mann's classic work, *The Legal Aspect of Money*, acknowledges this as it contrasts state theory of money, underlying monetary sovereignty, with what it terms "societary" theory and concludes that

> [w]hether a particular asset or instrument constitutes "money" in the sense that it can be used as *a means of payment* must be determined on a case-by-case basis and may in part depend upon changes in banking practice and technological developments; the nature of the instruments which fall within this definition may thus change from time to time.[74]

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71. Hart, *supra* note 69.

72. For example, in the event of default, no remedy of specific performance of a contract will be available through the courts if services or labor are the subject of a transaction where payment is expressed to be in such a form.

73. Robert A. Hillman & Maureen A. O'Rourke, *Rethinking Consideration in the Electronic Age* (Cornell Legal Studies, Research Paper No. 09-004, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1352427.

74. PROCTOR, *supra* note 52, at 36.

Although this definition appears to still site money within banks and their practices, it is used to support the now-universal view that bank deposits are money despite being obligations owed by private institutions. Mann goes on to admit the possibility that "[n]ew forms of money may emerge as a means of payment as they gain a sufficient level of acceptance within the business world or the community generally."[75] So courts may, and do, recognize and enforce obligations assumed and transactions entered into with consideration even though the consideration makes no reference to money as understood by the state and banks but instead reflects individuals' own ways of conceiving and quantifying value without recourse to those two agencies. When the early common law courts articulated the doctrine of permissible contractual consideration, they took the view that "[m]oney's [w]orth" could be expressed in whatever had value in the eyes of the parties concerned, and they did not inquire closely into the adequacy of consideration or its equivalent worth in money.[76] Indeed, they are the taxing authorities that have most often litigated the question of the legal nature of barter[77] and the availability of various tax reliefs.[78] For barter transactions taking place in the United Kingdom, the determination of the amount of "taxable supply," the tax lawyer's term for price in this context, for the purposes of levying indirect taxation—known as VAT in the United Kingdom—is expressed as follows:

> [T]he open market value of a supply of goods or services shall be taken to be the amount that would fall to be taken as its value . . . if the supply were for such consideration in money as would be payable by a person standing in no such relationship with any person as would affect that consideration.[79]

The ability of tax law to impede the development of new forms of payment and exchange systems operating without money has led some to propose an exemption from all tax laws for community-based schemes on the grounds that the revenue loss would be minimal and far outweighed by the encouragement of community-building and noneconomic goals.[80] But the U.K. tax authorities have shown persistent vigor in protecting the tax base through their pursuit via courts of a huge range of

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75. *Id.*

76. Thomas v. Thomas, [1842] 2 Q.B. 851 (Eng.).

77. For a review of the extensive case law in which principles for tax treatment of barter transactions have been developed, see Lex Servs. plc v. Customs & Excise Comm'rs, [2003] UKHL 67.

78. Goldsmiths (Jewellers) Ltd. v. Customs & Excise Comm'rs, [1997] STC 1073.

79. Value Added Tax, 1994, c. 23, § 19(5) (U.K.).

80. Sergio Pareja, *It Takes a Village: The Problem with Routinely Taxing Barter Transactions*, 50 CATH. U. L. REV. 785 (2010).

trading arrangements that make use of nonmoney consideration in arrangements for the supply of goods or services.[81] The continuing refinement of tax legislation shows the relevance of Desan's question when she links the development of money to the coalescence of the interests of late seventeenth-century government and the Bank of England acting in concert with individuals: "Each side of the triangle benefited from the arrangement. The remaining question is-how much?"[82] It is interesting that Desan also links the emergence of money to "the development of a politics that was fought over appropriations and levies." She explains that "the Government assumed the status of an individual, a party that consistently borrowed at interest to finance its expenses rather than using its distinctive capacity as a collective to anticipate taxes and dispense transferability in return."[83]

The government has an interest in ensuring a continuing role for money in nonmonetary systems because money confers on these systems the language and tools necessary to extract the government's share of any alternative forms of objectified social trust that peoples and communities may develop. Thus, O'Malley's suspicion that resilience building is a façade may contain a kernel of truth. And yet, one way to increase resilience from future banking and financial crises may be for local communities to seek more plural and manageable means of expressing and building trust and identity. Indeed, as Hart has argued, these efforts might herald new forms of democratic association even though such forms may not necessarily serve the interests of the nation-state.

VI. CONCLUSION

Although the developments considered in this Article are different from each other and have been used by different sets of actors at differ-

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81. *E.g.*, *Gold Coast Selection Trust Ltd. v. Humphrey* [1946] 2 All E.R. 742, 747. In *Gold Coast Selection Trust*, the Court showed its determination to attach a monetary value for the purposes of tax assessment of nonmonetary consideration received despite arguments to the contrary from the tax payer about the personal and subjective nature of the value. The Court explained:

> We have come to the conclusion that, when there has been, as is now admitted here, a realisation of a trading asset and the receipt of another asset, and when that latter asset is marketable in its nature and not some merely personal advantage which by its nature cannot be turned into money, the profits and gains must be arrived at for the year in which the transaction took place by putting a fair value on the asset received. The fact that it could not, as we will assume here, owing to its size, be disposed of in the market in that year does not mean that no profit or gain for income tax purposes has been made out of the transaction. It might be wrong to say it is the value to the individual trader which is to be taken, because that might bring in irrelevant matters. We think it would be right to say that it is the value to him or to any similar trader who would have been in a position to carry out the deal-in other words, a fair intrinsic value.

82. DESAN, *supra* note 55, at 41.

83. *Id.* at 51–52.

ent times to fulfill different needs, they may offer genuine alternatives to the modes of intermediation that have dominated financial markets. These bottom-up developments have clear implications for the questions of resilience, systemic risk, and vulnerability of individuals and households to future shocks and crises. An interesting future research agenda would seek to explore peoples' motives for using these forms of value creation and exchange, asking to what extent their use was a result of their desire to decouple from the established regulated financial sector or simply a quest for a better return on money than can currently be earned on bank deposits and government bonds. This question must be answered before an assessment can be made of the likelihood that resilience will increase as a result of these new exchange and payment systems.

Much more empirical research, therefore, is needed on these potentially rehumanizing, alternative financial systems. On the one hand, if they do reduce the degree of interconnectedness and risk of contagion throughout the financial system, they may have the potential to help create the systemic-risk-reducing "diversity" in the financial system that Andrew Haldane and Robert May have argued for.[84] One way to achieve this diversity is to open up a more plural value system of money so that problems in the banking sector are not so destructive of collective value and trust in the future. On the other hand, the schemes that appear to offer this potential may come with their own sets of risks and uncertainties that cause future hardship and loss similar to that of the banking crisis. In seeking to foster stability and resilience within the financial system, regulators must interpret their mandate as broadly as possible and examine these new forms of value creation and means of exchange, alongside the part of the financial system that traditionally falls within the regulatory perimeter.

84. Andrew Haldane & Robert May, *Systemic Risk in Banking Ecosystems*, 469 NATURE 351 (2011); Nicholas Beale et al., *Individual Versus Systemic Risk and the Regulator's Dilemma*, PROCEEDINGS NAT'L ACAD. SCI., July 18, 2011, *available at* http://www.pnas.org/content/early/2011/07/13/1105882108.full.pdf+html.