THE CUSTOM-TO-FAILURE CYCLE

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ABSTRACT

In areas of complexity, people often rely on heuristics—by which we broadly mean simplifications of reality that allow people to make decisions in spite of their limited ability to process information. When this reliance becomes routine and widespread within a community, it can develop into a custom. As long as such a heuristic-based custom reasonably approximates reality, society continues to benefit. In the financial sector, however, rapid changes in markets and products have disconnected some of these customs from reality, leading to massive failures, and increasing financial complexity is accelerating the rate of change, threatening future failures. We examine this "custom-to-failure cycle" and consider how law can help to manage the cycle and to mitigate its failures. In that context, we also analyze whether individuals and firms who follow heuristic-based customs should be subject to liability if the resulting failures harm society.

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INTRODUCTION

Human beings are "limited-capacity information processors."[1] In areas of complexity, we tend to compensate by relying heavily on heuristics—broadly defined as simplifications of reality that allow us to make decisions in spite of our limited ability to process information.[2] Sometimes these simplifications are based on models.[3] Other simplifications are more psychologically based.[4]

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1. Philip E. Tetlock, *The Impact of Accountability on Judgment and Choice: Towards a Social Contingency Model*, 25 ADVANCES EXPERIMENTAL SOC. PSYCHOL. 331, 335 (1992).

2. *See* MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 584 (11th ed. 2008) (defining a "heuristic" as a method or procedure that "serv[es] as an aid to . . . problem-solving by experimental and esp[ecially] trial-and-error methods"). An example of such a heuristic is the U.S. legal requirement that purchasers of alcohol must be at least twenty-one years of age, which reduces the complicated question of an individual's ability to responsibly consume alcohol to the simple metric of age. In this Essay, the term "heuristic" does not refer to cognitive biases, such as availability and optimism bias, that are sometimes referred to as heuristics. For further information on such biases, see generally, for example, NASSIM NICHOLAS TALEB, THE BLACK SWAN (2007); and Iman Anabtawi & Steven L. Schwarcz, *Regulating Systemic Risk: Towards an Analytical Framework*, 86 NOTRE DAME L. REV. 1349, 1367–70 (2011), which discuss the cognitive constraints associated with analyzing complex financial information. There is significant literature detailing these biases and offering suggestions to reduce the impact of such biases in consumer decisionmaking. *See generally, e.g.*, MARK KELMAN, THE HEURISTICS DEBATE (2011); RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE (2008).

3. In operations research, for example, the term "heuristics" refers to "computationally simple models that allow people to '. . . quickly [find] good feasible solutions.'" Konstantinos V.

Reliance on a heuristic can become so routine and widespread within a community that it develops into a custom, which we refer to in this Essay as a "heuristic-based custom."[5] This type of custom may not—and indeed, as this Essay assumes, does not[6]—become the basis for law per se. Rather, it is a custom in the sense of a "usual or habitual course of action, a long-established practice,"[7] which is merely "one element of the law-creating fact called custom."[8]

When a heuristic-based custom reasonably approximates reality, society should benefit. Modern finance, for example, has become so complex that the financial community routinely relies on heuristic-based customs, such as determining creditworthiness of securities by relying on formalistic credit ratings and assessing risk on financial products by relying on simplified mathematical models.[9] Without this reliance, financial markets could not operate.[10]

Katsikopoulos, *Psychological Heuristics for Making Inferences: Definition, Performance, and the Emerging Theory and Practice*, 8 DECISION ANALYSIS 10, 11 (2011) (alterations in original) (quoting FREDERICK S. HILLIER & GERALD J. LIEBERMAN, INTRODUCTION TO OPERATIONS RESEARCH 624 n.1 (7th ed. 2001)).

4. In psychology, the term "heuristic" refers to both informal and quantitative psychological processes that "in general . . . are quite useful, but sometimes . . . lead to severe and systematic errors." Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1124 (1974). For a discussion of many common psychologically based simplifications and errors, see generally DANIEL KAHNEMAN, THINKING, FAST AND SLOW (2011).

5. We use the term "custom" in its common meaning of "a usage or practice common to many or to a particular place or class." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 308.

6. *See infra* note 16 and accompanying text.

7. HANS KELSEN, PRINCIPLES OF INTERNATIONAL LAW 440 (Robert W. Tucker ed., 2d ed. 1967).

8. *See id.* (arguing that the second element needed for custom to become law-creating is that the individuals performing the custom "must be convinced that they fulfill, by their actions or abstentions, a duty, or that they exercise a right"); *cf.* Gerald J. Postema, *Custom, Normative Practice, and the Law*, 62 DUKE L.J. 701, 717 (2012) (discussing customary rules as "rules of a particular community that govern, but also emerge from, the interactions of its members").

9. Christopher L. Culp, Merton H. Miller & Andrea M.P. Neves, *Value at Risk: Uses and Abuses*, 10 J. APPLIED CORP. FIN., Winter 1998, at 26, 27 (1998); Steven L. Schwarcz, *Private Ordering of Public Markets: The Rating Agency Paradox*, 2002 U. ILL. L. REV. 1, 1–3.

10. *See* James P. Crutchfield, *The Hidden Fragility of Complex Systems—Consequences of Change, Changing Consequences*, *in* CULTURES OF CHANGE: SOCIAL ATOMS AND ELECTRONIC LIVES 98, 102–03 (Gennaro Ascione et al. eds., 2009) (noting the increasing structural complexity and fragility of modern markets, including financial markets, as part of "the world we built"); *see also* Manuel A. Utset, *Complex Financial Institutions and Systemic Risk*, 45 GA. L. REV. 779, 799–803 (2011) (discussing the complexity of financial markets and the bounded rationality of financial-community members, as well as the need for heuristics to process and analyze financial information); Markus K. Brunnermeier & Martin Oehmke, *Complexity in Financial Markets* 5–8 (Princeton Univ., Working Paper, 2009), *available at* http://scholar.princeton.edu/markus/files/complexity.pdf (noting that because financial-

When a heuristic-based custom no longer reflects reality, however, reliance on the custom can become harmful. In recent years, for example, financial markets and products have innovated so rapidly that heuristic-based customs—and thus behavior based on those customs—have lagged behind the changing reality. The resulting mismatch, in turn, has led to massive financial failures, such as investors relying on credit ratings that no longer are accurate[11] and members of the financial community assessing risk using simplified models that have become misleading.[12]

We call this cycle—(i) reliance on heuristics that reasonably approximate reality; (ii) the development of customs based on those heuristics; (iii) changes that disconnect those customs from reality; and (iv) failures resulting from continued reliance on those customs—the custom-to-failure cycle.

This Essay tests the hypothesis of the custom-to-failure cycle in the context of financial complexity. The focus on financial complexity is not intended to suggest that the custom-to-failure cycle arises only in that context; the cycle may well be part of the larger problem of human limitations in processing and acting on complex information.[13] We have not, however, systematically examined the custom-to-failure cycle in that larger context.

The analysis proceeds as follows. First, Part I shows that reliance on heuristics can develop into heuristic-based customs. It then explains why heuristic-based customs can discourage the reassessment of their underlying heuristics. Thereafter, Part II shows that failures can result when the customs no longer reflect reality.

Finally, Part III examines how law can help to manage the custom-to-failure cycle and to mitigate its failures. This examination

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community members have bounded rationality, they must simplify complex financial markets by using, for example, models and summaries); *cf.* TALEB, *supra* note 2, at 69 (observing that heuristics are necessary to enable action in the face of otherwise overwhelming complexity and randomness).

11. *See infra* Part II.B. Although different examples in this Essay refer to reliance on different heuristic-based customs, each particular example refers, for clarity, to only a single heuristic-based custom. This Essay's analysis should be valid, however, even if an example involved reliance on multiple heuristic-based customs.

12. *See infra* Parts II.A & II.B. Similar failures almost certainly will continue because increasing financial complexity is increasing the rate of change at which financial markets and products are innovating.

13. *Cf.* Steven L. Schwarcz, *Controlling Financial Chaos: The Power and Limits of Law*, 2012 WIS. L. REV. 815, 821–22 (discussing broader problems resulting from human irrationality and overreliance on heuristics).

confronts an important normative, yet real-world, dilemma. Heuristic-based customs, like any other customs, can become internalized as social norms of appropriate behavior, hereinafter, "custom-derived norms."[14] The creation of such norms in private groups, such as the financial community, is a "standard explanation" for successful self-regulation.[15] The dilemma is whether individuals and firms following heuristic-based customs that have become custom-derived norms—assuming the custom-derived norms have not themselves become law[16]—should be subject to criminal or civil liability when their behavior causes failures that harm society. This dilemma is at the root of the frustration as to why, after the worst financial crisis since the Great Depression, so few have been fined or gone to jail.

I. THE DEVELOPMENT OF AND FAILURE TO REASSESS HEURISTIC-BASED CUSTOMS

As reliance on a heuristic spreads throughout the financial community and becomes routine,[17] it can develop into a heuristic-based custom.[18] Two examples of such developments are the use of value-at-risk (VaR) models and credit ratings. The history of these financial tools also shows, however, that if members of the financial community expect that heuristic-based customs approximate reality, they may fail to question the continuing accuracy of the underlying heuristic.[19]

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14. A "norm" is "a principle of *right action* binding upon the members of a group and serving to guide, control, or regulate *proper and acceptable behavior*." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 846 (11th ed. 2008) (emphasis added).

15. ANNALISE RILES, COLLATERAL KNOWLEDGE: LEGAL REASONING IN THE GLOBAL FINANCIAL MARKETS 33 (2011).

16. This Essay assumes that the custom-derived norms in question have not themselves actually become law. This Essay's concept of custom lacks the second element needed for custom to become-law creating. *See supra* notes 6–8 and accompanying text.

17. For example, a heuristic may spread due to the desire of the financial-community members to reduce transaction costs.

18. We focus on this notion of a heuristic-based custom, as opposed to custom as unwritten law among participants. *See, e.g.*, RICHARD C. OSBORN, BUSINESS FINANCE: THE MANAGEMENT APPROACH 177–78 (1965) (discussing the use of trade credit as a common form of payment and noting that this "informal system is possible only because of its general acceptance as a customary business practice").

19. This failure to question the continuing accuracy of underlying heuristics can be viewed as a type of complacency. *Cf.* Anabtawi & Schwarcz, *supra* note 2, at 1366–68 (examining complacency as a cause of financial failure).

A. Reliance on Heuristics Can Develop into Heuristic-Based Customs

Since the 1990s, financial firms increasingly have relied on VaR models to evaluate and report market risk.[20] Although many variations of these models exist, all summarize risk evaluation as a simple quantitative statistic expressed in dollar terms.[21] Reliance on VaR has become so routine and widespread that it is now the financial industry's "standard risk measure"—effectively a heuristic-based custom based on "computationally simple models"[22]—for assessing market risk exposure.[23]

Credit ratings are simplifying metrics for addressing information asymmetry between borrowers and lenders.[24] Rating agencies formalistically assess borrower creditworthiness based on models,[25] expressing their ultimate conclusion through "an ordinal ranking of a borrower's, or a security's, credit quality" relative to other borrowers and securities.[26] Credit ratings also play a "certification" role that enables comparison of securities with different risk characteristics.[27] Due to the simplicity of credit ratings, investors routinely have relied

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20. *See* Culp et al., *supra* note 9, at 27 (stating that VaR started receiving industry support in 1993). For current examples of VaR reliance, see MORGAN STANLEY, MORGAN STANLEY REPORTS FIRST QUARTER 2012, at 3 (2012), *available at* http://www.morganstanley.com/about/ir/shareholder/1q2012.pdf?v=1; Goldman Sachs Group Inc., Quarterly Report (Form 10-Q), at 75, 135, 159, *available at* www.goldmansachs.com/investor-relations/financials/current/10q/10q-2012-1q.pdf.

21. *See* Giorgio Consigli, *Tail Estimation and Mean—VaR Portfolio Selection in Markets Subject to Financial Instability*, 26 J. BANKING & FIN. 1355, 1356 (2002) (noting that VaR is the standard risk-measurement tool but also that other model-based credit-risk measurements exist).

22. Heuristics are sometimes simplifications of reality based on computational models. *See supra* note 3.

23. Consigli, *supra* note 21; *see also* Joe Nocera, *Risk Mismanagement*, N.Y. TIMES MAG., Jan. 2, 2009, at B24 (discussing how the VaR metric came into prominence because of its ability to assess individual and firm-wide risk and because of the Securities and Exchange Commission's requirement that firms disclose a quantitative measure of their market risk).

24. PRAGYAN DEB, MARK MANNING, GARETH MURPHY, ADRIAN PENALVER & ARON TOTH, BANK OF ENG., WHITHER THE CREDIT RATINGS INDUSTRY? 4 (2011), *available at* http://www.bankofengland.co.uk/publications/fsr/fs_paper09.pdf; *see also* Donald MacKenzie, *The Credit Crisis as a Problem in the Sociology of Knowledge*, 116 AM. J. SOC. 1778, 1785 (2011) (noting that the use of credit ratings enables comparison across asset classes by reference to spreads over benchmark rates such as LIBOR, perhaps at the danger of "black box[ing]" the complexities of some assets).

25. *See supra* notes 3, 22 and accompanying text.

26. DEB ET AL., *supra* note 24, at 4.

27. *Id.* at 5–6.

on such ratings for decades to assess borrower creditworthiness.[28] This reliance has become widespread not only in the United States but also throughout the world,[29] effectively forming a heuristic-based custom for assessing creditworthiness.

B. Heuristic-Based Customs Can Discourage Reassessment of Their Underlying Heuristics

As previously observed,[30] routine and widespread reliance on VaR models has developed into a heuristic-based custom. Financial firms now rely on VaR models not only to evaluate market risk but also to generate bases for compensating their employees and managers, such as adopting compensation systems that reward profit generation with "low risks" as indicated by VaR statistics.[31] Until recently, however, neither firms using VaR models nor employees and managers being compensated based on such models have questioned the models' underlying heuristics.[32] Moreover, senior managers of financial firms, who often lack the technical expertise to themselves question the models, have not attempted to resolve the conflicts of interest that make reliance on the models even more questionable.[33]

Similarly, the heuristic-based custom of relying on credit ratings had become so entrenched that, at least until the global financial crisis, financial firms rarely questioned the accuracy of these ratings. Faith in the accuracy of credit ratings was reinforced by their long record of reliability for assessing the creditworthiness of borrowers under relatively simple debt instruments, such as corporate bonds[34] and basic securitization instruments.[35]

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28. *See* Schwarcz, *supra* note 9, at 3 ("Investors in domestic and cross-border financial transactions increasingly rely on rating agencies for substantial comfort regarding the risks associated with the full and timely payment of debt securities.").

29. *Id.*; *see also* PIERO CINQUEGRANA, THE REFORM OF THE CREDIT RATING AGENCIES: A COMPARATIVE PERSPECTIVE 1 (2009) (noting the widespread use of credit ratings).

30. *See supra* Part II.A.

31. Steven L. Schwarcz, *Conflicts and Financial Collapse: The Problem of Secondary-Management Agency Costs*, 26 YALE J. ON REG. 457, 460 (2009) (citing Nocera, *supra* note 23, at 24, 26, 46).

32. *See id.* at 463 ("[M]anagers will probably have little expertise to go beyond VaR or other mathematically modeled risk profiles.").

33. *Id.*; *see also infra* note 45 and accompanying text.

34. *See, e.g.*, *SEC Hearing on Credit Rating Agencies November 21, 2002* (2002) (prepared statement of the Bond Market Association), *available at* http://www.sec.gov/news/extra/credrate/bondmarket.htm ("Credit rating agencies play a critically important

Members of the financial community continued their unquestioning belief in the accuracy of credit ratings even when ratings were applied to new debt instruments, such as collateralized-debt obligations that were themselves backed by asset-backed securities (ABS CDO securities).[36] ABS CDO securities were much more complex and highly leveraged than corporate bonds and basic securitization instruments,[37] requiring the use of sophisticated Gaussian copula analysis to analyze complex default correlations.[38]

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role . . . by providing an independent source of information on the credit standing of corporate and other issuers of debt securities. . . . [T]he current system functions reasonably well . . . ."); MOODY'S INVESTORS SERV., CORPORATE DEFAULT AND RECOVERY RATES, 1920–2010, at 9 (2011), *available at* http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_131388 ("Moody's ratings have historically proven to be effective predictors of default."); STANDARD & POOR'S, GUIDE TO RATINGS PERFORMANCE 13 (2011), *available at* http://img.en25.com/Web/StandardandPoors/SP_GuideToRatingsPerformance.pdf ("Higher credit ratings have typically correlated with lower default rates . . . ."); *Rating the Ratings*, WORLD FIN. (Oct. 25, 2011), http://www.worldfinance.com/columnists/rating-the-ratings (noting the "strong historic track record" of "global corporate ratings").

35. *See* MacKenzie, *supra* note 24, at 1784 (discussing the rating agencies' decision to rely primarily on existing ratings approaches to evaluate new asset-backed securities (ABS)).

36. *Id.* at 1784–86.

37. Rating agencies acknowledged a few differences between the rating methodology for structured-finance securities compared to that of corporate securities but noted that the rating process was similar for both. STANDARD & POOR'S, PRINCIPLES-BASED RATING METHODOLOGY FOR GLOBAL STRUCTURED FINANCE SECURITIES 5 (2007), http://www.standardandpoors.com/prot/ratings/articles/en/us/?articleType=HTML&assetID=1245324618770 (explaining that Standard & Poor's (S&P) credit ratings are the same for corporate bonds and securitized-debt issues but noting differences in how the markets price the two instruments); Letter from Frédéric Drevon, Senior Managing Dir. & Head of Eur., Moody's Investors Serv. Ltd., to Fabrice Demarigny, Sec'y Gen., Comm. of Eur. Sec. Regulators 2 (July 31, 2007), *available at* http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_104185 ("The rating process in [Moody's Investors Service's] structured and corporate rating groups are similar.").

38. In the decade preceding the global financial crisis, bond investors and banks adopted a specific statistical technique, the Gaussian copula, to evaluate the default correlation. Felix Salmon, *A Formula for Disaster*, WIRED, Mar. 2009, at 74, 76–77; *see also* Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk*, 64 STAN. L. REV. 657, 677–78 (2012) (discussing the origin of the Gaussian copula and its use in the market); MacKenzie, *supra* note 24, at 1804 ("All three main agencies largely switched to evaluating CDOs using Gaussian-copula software systems . . . ."). Although this technique had previously been used by actuaries to consider the impact of events on human lifespan with some success, it had not been applied to credit-risk analysis and evaluation of ABS prior to this period. *See* MacKenzie, *supra* note 24, at 1804 (noting that S&P began using Gaussian-copula software in November 2001 and was the first of the main agencies to employ the tool); Sam Jones, *Of Couples and Copulas*, FIN. TIMES, Apr. 25, 2009, at MAG1 (noting the use of actuarial sciences to determine the probability of a widower's death). Essentially, a Gaussian-copula approach enabled a single estimate of default correlation by combining probabilities of default of the underlying assets in a collateralized debt obligation (CDO) portfolio based on numerous assumptions—in other words, a heuristic. MacKenzie, *supra* note 24, at 1803 n.33. Even the

This risk-analysis methodology represented a marked change from the traditional ratings methodologies that had proven to be reliable over many decades.[39] Nonetheless, members of the financial community, including investors, simply assumed the continued reliability of the credit ratings on the new instruments.[40]

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three major rating agencies—Moody's Investors Service, S&P, and Fitch Ratings—adopted some form of Gaussian-copula default correlation assessment for CDO portfolios. *Id.* at 1804. The extent to which members of the financial community understood the underlying assumptions and limitations of the Gaussian-copula approach is unclear. *See* Judge, *supra* note 38, at 723 (noting that the Gaussian copula provided "market participants and regulators [with] a plausible basis for believing that the complexity arising from fragmentation nodes could be managed even without being understood directly"). This discussion is not to say that rating agencies solely relied on models in their creditworthiness evaluations of securities. *See, e.g.*, *Wall Street and the Financial Crisis: The Role of Credit Rating Agencies: Hearing Before the Permanent Subcomm. on Investigation of the S. Comm. on Homeland Sec. & Governmental Affairs*, 111th Cong. 48 (2010) (statement of Yuri Yoshizawa, Group Managing Director, Structured Finance, Moody's Investors Service) ("One common misperception is that [Moody's] credit ratings are derived solely from the application of a mathematical process or model. This is not the case."); STANDARD & POOR'S, GUIDE TO CREDIT RATING ESSENTIALS 7 (2011), *available at* http://img.en25.com/Web/StandardandPoors/SP_CreditRatingsGuide.pdf (describing ratings methodologies); STANDARD & POOR'S, *supra* note 37, at 4 ("[W]e use a general framework and established guidelines, as well as various quantitative techniques and models, to enhance the rating committee's qualitative opinions.").

39. *Cf.* MacKenzie, *supra* note 24, at 1784–85 (noting that the market for ABS CDO securities would have been limited if market participation required understanding the Gaussian-copula models). *Compare, e.g.*, MOODY'S INVESTORS SERV., RATING METHODOLOGY: GLOBAL PACKAGED GOODS INDUSTRY 2 (2009), *available at* http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_119226 (stating the five key factors used to determine risk: (1) "Scale and Diversification," (2) "Franchise Strength and Growth Potential," (3) "Distribution and Pricing Power," (4) "Cost Efficiency and Profitability," and (5) "Financial Strategy and Credit Metrics"), *with* MOODY'S INVESTORS SERV., THE BINOMIAL EXPANSION METHOD APPLIED TO CBO/CLO ANALYSIS 1–4 (1996), *available at* http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBS_SF5066 (describing the binomial expansion method and providing an example of the calculations), *and* MOODY'S INVESTORS SERV., RATING METHODOLOGY: MOODY'S APPROACH TO RATING SF CDOS 1–8 (2012), http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBS_SF157850 (using flow charts and several equations to describe how Moody's rates the credit risk of CDOs backed by structured-finance assets).

40. *See* MacKenzie, *supra* note 24, at 1785 ("Ratings 'black boxed' these complexities."). Rating agencies acknowledged that "[b]onds with the same credit rating, therefore, may be comparable with respect to overall credit quality," even if specific characteristics were not the same. MOODY'S INVESTORS SERV., RATING METHODOLOGY: THE EVOLVING MEANING OF MOODY'S BOND RATINGS 3 (1999), *available at* http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBM_PBM48185; *see also About Credit Ratings*, STANDARD & POOR'S, http://www.standardandpoors.com/aboutcreditratings (follow "Comparable Across Different Sectors and Regions" hyperlink) (last visited Nov. 2, 2012) ("Standard & Poor's uses the same rating scale across the structured finance, corporate, and government sectors. This rating scale is designed to provide a common language for comparing creditworthiness, regardless of the type of entity or assets underlying the debt instrument or the structure of the financial obligation.").

II. FAILURES CAN RESULT WHEN HEURISTIC-BASED CUSTOMS NO LONGER REFLECT REALITY

The usefulness of a heuristic depends, of course, on its approximation of reality. In relatively stable times, when there are considerable historical data or personal experiences upon which to draw, heuristics—and thus heuristic-based customs—can closely approximate reality. This Essay focuses, however, on the financial industry, which is marked by constant change. Under these circumstances, it is unlikely that a given heuristic will provide a close approximation of reality for long. Periodic reevaluation of heuristic-based customs is therefore critical.

Unfortunately, as discussed in Part II, the financial community does not always engage in that reevaluation. The result can be failure. This Part highlights the perils of failing to reevaluate heuristic-based customs through the examples discussed in Part II—reliance on VaR models, and reliance on credit ratings—as well as through the additional illustrations of reliance on collateral and incremental innovation.

A. Failure Resulting from Reliance on VaR Models

In the decade preceding the global financial crisis, financial-community members placed "'enormous faith in the market's ability to analyze and measure risk' through mathematical models," such as VaR.[41] When markets changed to embed credit-default swaps—a new form of derivatives product—in many financial transactions, financial-community members continued to use VaR models to assess the risk of those products.[42]

Unfortunately, VaR modeling of credit-default swaps was statistically distorted. Although these swaps "generate small gains but only rarely have losses,"[43] VaR models did not take into account that credit-default swaps are likely to generate outsized losses if and when such losses occur.[44] Although some midlevel managers of firms may have understood this distortion, conflicts of interest may have

41. Schwarcz, *supra* note 31, at 462 (quoting Karl S. Okamoto, *After the Bailout: Regulating Systemic Moral Hazard*, 57 UCLA L. REV. 183, 211 (2009)).

42. Nocera, *supra* note 23, at 43.

43. Schwarcz, *supra* note 31, at 460.

44. *See id*. ("[A]ny losses that might eventually occur would be huge.").

dissuaded them from informing senior management.[45] As a result, many firms that were counterparties on credit-default swaps, or that invested in transactions with embedded credit-default swaps, lost huge amounts of money.[46] For example, the government made available to the American International Group (AIG) up to $182.3 billion of assistance from taxpayer funds in order to avoid insolvency and potential systemic consequences as a result of AIG's losses on credit-default swaps.[47]

B. Failure Resulting from Reliance on Credit Ratings

The global financial crisis also highlighted the potential for failure resulting from reliance on credit ratings. As discussed in this Part, members of the financial community continued to believe in the accuracy of credit ratings even when ratings were applied to complex, new, highly leveraged ABS CDO securities.[48] Investor reliance on credit ratings was further reinforced by financial regulators, who sometimes incorporated credit ratings into their oversight frameworks[49] and set minimum-rating requirements on investments by financial institutions.[50]

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45. *See id*. (explaining that midlevel, or secondary, managers of firms are normally paid on a short-term basis, creating conflicts with the long-term interests of the firm).

46. *See, e.g.*, John Grgurich, *Credit Default Swaps: Still Here, Still Able To Wreak Havoc*, DAILYFINANCE (May 11, 2012, 3:00 PM), http://www.dailyfinance.com/2012/05/11/jpmorgan-credit-default-swaps-still-wreaking-havoc ("Credit default swaps were at the heart of the financial crisis.").

47. *See, e.g.*, U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-574, TROUBLED ASSET RELIEF PROGRAM: GOVERNMENT'S EXPOSURE TO AIG LESSENS AS EQUITY INVESTMENTS ARE SOLD 15 n.62 (2012), *available at* http://www.gao.gov/assets/600/590677.pdf; *see also id.* at 17–18 ("Based on the composition of the remaining federal assistance to AIG, the repayment and recovery progress thus far on all assistance as of March 22, 2012, and the March 30, 2012, value of the remaining shares of AIG stock held by Treasury, the government could receive total returns of approximately $15.1 billion in excess of the assistance provided . . . ."). For the purposes of our analysis, the report's suggestion that taxpayers may ultimately profit from the bailout is irrelevant. The government did not choose to invest in AIG as a sound investment, but rather was forced to do so to prevent the collapse of AIG. For a brief discussion of the motivations behind and effects of these collateral calls, see RILES, *supra* note 15, at 3–4.

48. *See supra* note 36 and accompanying text.

49. FIN. STABILITY BD., PRINCIPLES FOR REDUCING RELIANCE ON CRA RATINGS 1 (2010), *available at* http://www.financialstabilityboard.org/publications/r_101027.pdf.

50. MacKenzie, *supra* note 24, at 1784. Professor Donald MacKenzie notes that financial statutes and regulations may encode ratings preferences as well, *id.*, but this is not the focus of this Essay.

Failure resulted when the rating methodologies utilized for ABS CDO and similar securities produced inaccurate ratings.[51] The resulting unexpected defaults on what were thought to be investment-grade securities triggered a loss of confidence in the accuracy of all credit ratings, which in turn contributed to the financial crisis.[52]

There are many other possible examples, two of which follow in Sections C and D, of failures resulting from reliance on heuristic-based customs that no longer reflect reality.[53]

C. Failure Resulting from Reliance on Collateral

Lenders' reliance on collateral is a rational response to the asymmetric information and uncertainty inherent in making a loan.[54] The asymmetry and uncertainty that occur are due in part to the fact that assessing a borrower's ability to repay debt can be complex and difficult because it depends not only on individual borrower characteristics but also on macroeconomic factors, such as the occurrence of a recession.[55] Banks and other lenders therefore often

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51. *See* Schwarcz, *supra* note 31, at 462 ("[M]any mortgage-backed securities turned out to be incorrectly rated.").

52. *See* Steven L. Schwarcz, *Regulating Complexity in Financial Markets*, 87 WASH. U. L. REV. 211, 225 (2009) (discussing financial markets' susceptibility to contagion and how losses in securities with "investment-grade" ratings caused investors to panic).

53. Social scientists have also observed these types of failures. Sociologist Patricia Thornton, for example, has observed such a failure in the higher-education publishing industry when that industry shifted from an emphasis on building author-editor relationships as a source of long-term organic growth to adoption of the consolidated conglomerate model's focus on acquisitions to drive profitability and growth. PATRICIA H. THORNTON, MARKETS FROM CULTURE: INSTITUTIONAL LOGICS AND ORGANIZATIONAL DECISIONS IN HIGHER EDUCATION PUBLISHING 26–36 (2004). In the 1970s, higher-education publishers faced increased resource competition and began to acquire firms and create conglomerates to achieve economies of scale and scope to improve yearly profitability and growth. *Id.* at 27–28. Eventually, reliance on making acquisitions to enhance profitability and growth became so routine and widespread that it effectively developed into what we characterize as a heuristic-based custom. Publishing managers, whose success was now measured by yearly growth figures, widely pursued acquisitions. *Id.* at 31, 34. But as the industry consolidated, the making of further acquisitions stopped being efficient. Firm managers nonetheless continued to pursue acquisitions, without independent cost-benefit evaluations, simply because others in the industry were doing so. *Id.* Acquisitions involving higher-education publishers occurred "in waves . . . that could not be explained by efficiency outcomes," and many publishing conglomerates failed. *Id.* at 6. We do not suggest that *all* of the failed acquisitions were caused by reliance on the heuristic-based custom of pursuing acquisitions; the failure to reevaluate the strategy of pursuing acquisitions as a simplified mode to greater profitability, however, at least contributed to these failures.

54. *See* Yaron Leitner, *Using Collateral To Secure Loans*, BUS. REV., Second Quarter 2006, at 9, 9 (discussing the common use of collateral to secure loans).

55. STANDARD & POOR'S, *supra* note 38, at 11–12.

rely on overcollateralization—requiring collateral with value that exceeds the amount of the loan—as a simplified means to assess the creditworthiness of their loans.[56] Because assessing collateral value is usually much easier than assessing a borrower's ability to repay, reliance on overcollateralization has become routine and widespread, effectively developing into a heuristic-derived custom.[57]

Overcollateralization can in fact provide sufficient protection against borrower default and thus can be a reasonable proxy for creditworthiness. Should the borrower default, the collateral can be sold to repay the debt.[58] In periods of rapid change, however, reliance on overcollateralization can sometimes fail.

For example, in the years preceding the Great Depression, banks lending "on margin"—a practice whereby borrowers use proceeds of a loan to purchase shares of stock and then pledge that stock as collateral to the banks—assumed they were adequately protected, even for margin loans made to risky borrowers.[59] Although these loans were not initially overcollateralized—because the value of the pledged stock initially equaled, but did not exceed, the amount of the loan—banks expected the stock market to continue rising, as it had for decades. An increase in stock prices, and thus a consequent increase in the value of the collateral, would then cause the loans to become overcollateralized.[60] In October 1929, however, the collapse in stock prices caused massive failure as many of those risky borrowers defaulted on the now-*under*collateralized margin loans.[61]

Similarly, prior to the global financial crisis, banks and private mortgage lenders made loans to risky, or "subprime," borrowers who used the loan proceeds to purchase homes and then mortgaged their homes as collateral to the lenders. The lenders assumed they were

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56. Heuristics include simplifications of reality based on models and psychological processes. *See supra* notes 3–4 and accompanying text. Reliance on overcollateralization is a heuristic that overlaps these categories.

57. *See generally Securities Lending: Managing Value Generation and Risk*, J.P. MORGAN, http://www.jpmorgan.com/tss/General/Securities_Lending_Managing_Value_Generation_and_Risk/1256338170739 (last visited Nov. 2, 2012) (discussing the use of collateral in securities lending). For a discussion of the role of collateral prior to the Great Depression and leading up to the "recent global financial crisis," see Anabtawi & Schwarcz, *supra* note 2, at 1356–57, 1359–60.

58. Financial-community members have similarly used collateral as a creditworthiness-assessment tool in derivatives trading. RILES, *supra* note 15, at 35–36.

59. Anabtawi & Schwarcz, *supra* note 2, at 1356.

60. *Id.*

61. *Id.* at 1357.

adequately protected.[62] Although these mortgage loans were not initially overcollateralized—because the value of a mortgaged home initially equaled, but did not exceed, the amount of the loan—the lenders expected housing prices to continue rising, as had been the case for decades.[63] An increase in housing prices, and thus a consequent increase in the value of the collateral, would then cause the loans to become overcollateralized.[64] In the fall of 2007, however, the collapse in housing prices caused massive failure as many subprime borrowers defaulted on the now-*under*collateralized mortgage loans.[65]

D. Failure Resulting from Incremental Innovation

Heuristic-based customs can build incrementally, with small financial innovations building on past heuristic-based customs with which financial-community members have become comfortable.[66]

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62. *Id.* at 1359–60.

63. *Id.*

64. Barry Ritholtz, *Case Shiller 100 Year Chart (2011 Update)*, BIG PICTURE (Apr. 13, 2011, 7:00 AM), http://www.ritholtz.com/blog/2011/04/case-shiller-100-year-chart-2011-update.

65. *See* Anabtawi & Schwarcz, *supra* note 2, at 1360 ("When home prices began falling, some of these asset-backed securities began defaulting, requiring financial institutions heavily invested in these securities to write down their value, causing these institutions to appear, if not be, financially risky." (citation omitted)).

66. A somewhat analogous example of this process is the judicial misapplication of substantive-consolidation law. Substantive consolidation is an equitable remedy in bankruptcy whereby a bankruptcy judge can decide, in certain circumstances, to order the consolidation of two, or more, otherwise legally separate companies. STEVEN L. SCHWARCZ, BRUCE A. MARKELL & LISSA L. BROOME, SECURITIZATION, STRUCTURED FINANCE AND CAPITAL MARKETS 85 (2004) All courts agree that substantive consolidation requires, as a minimum, significant breaches of corporate formalities between the companies being considered for consolidation. *See id.* When such breaches occur, however, courts frequently state that substantive consolidation should be permitted only if its benefits substantially outweigh any harm. *Id.* at 86. The substantially outweigh test serves as a simplifying analytical framework—a sort of judicial heuristic. In the trivial scenario wherein the failure to substantively consolidate companies would harm *all creditors*, including creditors otherwise opposing substantive consolidation, all courts will come to the same conclusion. For all other scenarios, however, courts purporting to apply this substantially outweigh test fail to do so in a systematic way. One of us has testified that the confusion stems from the fact that substantive consolidation is actually a zero-sum game: it simply rearranges how assets are distributed to creditors without increasing the aggregate distributions. Transcript of Proceedings at 13–29, *In re* Petters Co., 401 B.R. 391 (Bankr. D. Minn. 2009) (No. 08-45257). Accordingly, a substantially outweigh test is mathematically nonsensical in this context. We believe that courts have not recognized this problem for two reasons: (1) the application of substantive consolidation is inherently complex, especially for judges who—as is unfortunately true for lawyers generally—rarely have deep mathematical aptitude; and (2) frequent judicial repetition of the contours of the substantially outweigh test renders that a heuristic-based custom, which impairs critical inquiry into the test.

Professor Kathryn Judge notes just such an effect within the mortgage-securitization industry in the decades preceding the global financial crisis, by which incremental innovation resulted in incredibly complex and unwieldy fragmentation of cash flows.[67]

After banks and investors became comfortable with basic mortgage-backed securities, they gradually became comfortable with the addition of incremental structural innovations, riskier assets, or both—without reconsidering that these innovations and assets created new securities with new risks.[68] As a result, these financial institutions widely and routinely relied on assessment techniques (heuristics) previously applied to simpler securities without properly considering the possibility that each new innovation or asset could render the heuristic less accurate. In fact, certain innovations and assets reduced the heuristic's accuracy in novel ways. For example, although cash flows had been fragmented in the past, innovative new fragmentations of cash flows misaligned investor interests.[69] Investors, however, failed to recognize the misalignment.[70] Furthermore, increases in the number of intermediaries between the originators of mortgage loans and investors in the securities backed by those mortgage loans caused an unanticipated loss of important information about the loans.[71] In addition, although investors "accustomed to investing in private-label [mortgage-backed securities] . . . may have questioned the additional risks posed by the inclusion of risky mortgages in a subprime [mortgage-backed security]," those investors

67. Judge, *supra* note 38, at 670–77.

68. *See id.* at 687 ("The incremental nature of the processes through which financial innovations become highly complex is critical to understanding . . . why that complexity itself may not be subjected to close scrutiny by market participants or regulators."). This increasing comfort with incremental structural innovations is also consistent with Professor MacKenzie's hypothesis of path dependence, in which market participants respond to change through the modification of existing evaluation practices, rather than the creation of new evaluation practices. MacKenzie, *supra* note 24, at 1783.

69. Judge, *supra* note 38, at 682–83. For instance, investors in the AAA-rated tranche of a CDO would prefer the highest-quality portfolio of assets possible, even at lower yield, whereas investors in the unrated equity tranche of a CDO would prefer a lower-quality but higher-yielding portfolio of assets to maximize their return. Note that investor interests may change over time according to asset performance.

70. *See id.* at 687 (observing that an investor accustomed to cash-flow fragmentations would not "be likely to scrutinize a gradual increase in the number or diversity of tranches issued in MBS transactions").

71. *See id.* at 686 (observing that an "investor accustomed to investing in pass-throughs . . . presented with a private-label MBS, for example, may not have questioned whether using a servicer could affect the cash flows coming from a mortgage, because the use of such agents was an innovation to which that investor had already become accustomed").

"might not revisit the question of whether purchase agreements could be relied upon to ensure mortgage originators had engaged in appropriate due diligence in determining whether to extend a loan packaged into an [mortgage-backed security]."[72] This growing complexity and fragmentation played a significant role in the global financial crisis.[73]

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The discussion thus far has shown that reliance on heuristics can develop into heuristic-based customs, that heuristic-based customs can discourage the reassessment of their underlying heuristics, and that failures can result when the customs no longer reflect reality. We next examine how law can help to manage the custom-to-failure cycle and mitigate those failures.

III. HOW LAW CAN HELP

To understand how law can help to manage the custom-to-failure cycle and mitigate its failures, consider how law could address each step in that cycle.[74] Law could be used to try (i) to prevent reliance on heuristics in the first place, (ii) to block the development of heuristic-based customs, (iii) to make it less likely that parties will follow heuristic-based customs that have become disconnected from reality, which we refer to as "outdated heuristic-based customs," or (iv) to address failures that result when parties follow heuristic-based customs that no longer reflect reality.

It is unlikely that law could effectively address the first two approaches. As to the first approach, even if law could prevent reliance on heuristics, it would generally be unwise to do so in the case of financial markets.[75] At least in complex matters, human beings lack the cognitive ability to make decisions without some reliance on heuristics.[76] As to the second approach, we do not see how law could

72. *Id.* at 686–87.

73. *Id.* at 687.

74. Recall that the custom-to-failure cycle is described as follows: (i) reliance on heuristics that reasonably approximate reality, (ii) development of customs based on those heuristics, (iii) changes that disconnect those customs from reality, and (iv) failures resulting from continued reliance on those customs. *See supra* notes 12–13 and accompanying text.

75. As a positive matter, law has accomplished this outdated heuristic prevention in certain narrow areas, such as employment discrimination. Employers may not refuse to hire or discriminate against an individual on the basis of "race, color, religion, sex, or national origin." 42 U.S.C. § 2000e-2(a)(1) (2006).

76. *See supra* Part I.

effectively block the development of heuristic-based customs, the development of customs being so integrally a part of human nature.

Our analysis therefore focuses on the latter two approaches. First, we examine how law could decrease the likelihood that parties would follow outdated heuristic-based customs. Thereafter we examine how law could address failures that result when parties follow outdated heuristic-based customs.

A. Making It Less Likely That Parties Will Follow Outdated Heuristic-Based Customs

We see at least four possible ways that law could be used, in the context of financial complexity, to make it less likely that parties will follow outdated heuristic-based customs: (1) require financial firms to engage in more self-aware operational risk management and reporting, (2) limit complex financial products, (3) criminalize the following of outdated heuristic-based customs, and (4) impose ex post liability in an effort to internalize harm. We discuss the first three approaches in this Part. Because the fourth approach also implicates the ex post addressing of failures, we discuss it as part of Section B.[77]

1. *Requiring More Self-Aware Operational Risk Management and Reporting.* The goal of requiring more self-aware operational risk management and reporting would be to motivate firms to reevaluate their heuristic-based customs periodically. By analogy, the Basel III capital-adequacy guidelines require banks to engage in periodic financial "stress" scenarios,[78] in order to motivate them to consider the possibility of, and to better prepare for, future periods when previously adequate liquidity and capital resources might prove inadequate.[79] Similarly, section 165(d) of the Dodd-Frank Wall Street

77. In this Essay, we focus on options that make parties less likely to follow outdated heuristic-based customs, rather than on possible solutions to the underlying problems of financial-community members. Our Essay does not, for example, address financial regulation that could resolve core market failures such as minimizing complexity in the financial system, mitigating intrafirm conflicts, or internalizing systemic risk consequences. For an example of such broader analysis, see Steven L. Schwarcz, Keynote Address at the European Central Bank Seminar: A Regulatory Framework for Managing Systemic Risk (Oct. 20, 2011) (transcript available at http://ssrn.com/abstract=1945742).

78. BANK FOR INT'L SETTLEMENTS, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS 8–9 (2011), *available at* http://www.bis.org/publ/bcbs189.pdf.

79. CHRIS BRUMMER, SOFT LAW AND THE GLOBAL FINANCIAL SYSTEM: RULE MAKING IN THE 21ST CENTURY 217 (2012); *cf.* Anabtawi & Schwarcz, *supra* note 2, at 1389 (arguing that

Reform and Consumer Protection Act (Dodd-Frank Act)[80] requires banks and other systemically important financial institutions to plan for the possibility of their liquidation.[81] A central goal of this "living will" requirement is self-awareness, to motivate those institutions to consider and better prepare for a time when changing circumstances might cause their demise—no matter how unlikely that demise may seem at the time the living will is being prepared.[82]

Applying this requirement to the earlier discussion of outdated heuristic-based customs, requiring periodic self-awareness and reporting could have made financial-community members more aware of the limitations of, and thus the potential for failure inherent in, VaR models, thereby avoiding their reliance on outdated VaR models.[83] It also could have made financial-community members more aware of the limitations of credit ratings and the potential for failure when old ratings methodologies are applied to complex new financial products.[84] Furthermore, such a requirement for self-awareness and reporting could have made financial-community members more aware that loans that are not initially overcollateralized are inherently risky, given that a decline (or even a plateau) in collateral prices can prevent those loans from ever becoming overcollateralized.[85] In each case, the requirement could have prevented reliance on those outdated heuristic-based customs, thereby preventing the failures caused by that reliance.[86]

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the simple reminder that negative economic shocks have occurred in the past will itself encourage more critical reflection and accurate risk assessments). Ironically, reliance on stress tests might itself create a heuristic-based custom in which the financial community fails to engage in ongoing reevaluation of the assumptions of the stress tests. Some of those assumptions, however, might change over time.

80. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified as amended in scattered sections of the U.S. Code).

81. *Id.* § 165(d), 124 Stat. at 1426–27 (codified at 12 U.S.C. § 5365 (Supp. IV 2011)).

82. *See, e.g.*, Martin J. Gruenberg, Acting Chairman, Fed. Deposit Ins. Corp., Speech at the Federal Reserve Bank of Chicago Bank Structure Conference (May 10, 2012) (transcript available at http://www.fdic.gov/news/news/speeches/chairman/spmay1012.html) (commenting that required resolution planning "will improve [financial firms'] efficiencies, risk management and contingency planning").

83. *See supra* Part II.A. A requirement of this sort could even be coupled with a safe harbor from liability for firms that perform frequent, ongoing operational risk assessments.

84. *See supra* Part II.B.

85. *See supra* Part II.C.

86. As a practical matter, financial-community members may choose to rely on in-house risk managers to conduct the required reevaluation of heuristic-based customs. *See, e.g.*, SENIOR SUPERVISORS GRP., FIN. STABILITY BD., RISK MANAGEMENT LESSONS FROM THE GLOBAL BANKING CRISIS OF 2008, at 4 (2009), *available at* http://www.financialstabilityboard.org/

2. *Limiting Complex Financial Products.* The second way that law could make parties less likely to follow outdated heuristic-based customs would be to limit complex financial products. As complexity increases, financial-community members need to rely more heavily on heuristic-based customs; yet the more complex something is, the less likely it is, other things being equal, that the heuristic will accurately reflect reality.[87] Limiting complex financial products would not only reduce the need to rely on heuristics but also would make it more likely that the relied-upon heuristics will more accurately reflect reality.

Absent agreement on what constitutes complexity, it would be difficult to limit complex financial products per se.[88] Complexity could

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publications/r_0910a.pdf ("A key weakness in governance stemmed from what several senior managers admitted was a disparity between the risks their firms took and those their boards of directors perceived the firms to be taking. . . . Within firms, the stature and influence of revenue producers clearly exceeded those of risk management and control functions."); Brian W. Nocco & René M. Stulz, *Enterprise Risk Management: Theory and Practice*, 18 J. APPLIED CORP. FIN. 8, 8 (2006) ("[A]t a large and growing number of companies, the risk management function is directed by a senior executive with the title of chief risk officer (CRO) and overseen by a board of directors charged with monitoring risk measurements and setting limits for these measures."); René M. Stulz, *6 Ways Companies Mismanage Risk*, 87 HARV. BUS. REV., Mar. 2009, at 86, 92–93 ("If a firm has state-of-the-art risk-management systems but the board and the CEO don't understand them because the (technically very savvy) risk manager cannot properly explain the complex reports to nonexperts, the systems may do more harm than good by inspiring unwarranted confidence in their capabilities. Even worse, information may reach top management too late or be distorted by intermediaries."). Effective risk managers function independently of profit centers and have the requisite knowledge and experience to question properly the underlying methodologies and heuristics of financial products. Therefore, these individuals may be ideally situated to reevaluate the continued accuracy of heuristic-based customs. For financial-community members to benefit from this required reevaluation, however, risk managers must have the ability to notify and request prompt action of top management with respect to outdated heuristic-based custom. Granting risk managers the authority to override the decisions of business managers upon a determination that the underlying heuristic is outdated would prevent timely continued reliance. Monitoring incentives may also encourage periodic reevaluation if structured to reward past superior risk practices with actual observed losses. Such an incentive would have likely increased attention to future long-term losses not properly captured in VaR models, the different credit-rating methodology (and increased unreliability) for structured financial products, and the risk inherent in relying on rising collateral prices to achieve overcollateralization.

87. Anabtawi & Schwarcz, *supra* note 2, at 1370.

88. A possible approach to limiting new complex financial products might be to require an approval process for such products, similar to that used by the Food and Drug Administration for approving new medications. *Compare* Eric A. Posner & E. Glen Weyl, *An FDA for Financial Innovation: Applying the Insurable Interest Doctrine to 21st-Century Financial Markets*, 107 NW. U. L. REV. (forthcoming 2013) (manuscript at 1), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2010606 ("We propose that when firms invent new financial products, they be forbidden to sell them until they receive approval from a government agency designed along the lines of the FDA, which screens pharmaceutical

be limited, however, by requiring that financial products become more standardized, thereby making such products more understandable.[89] It is unclear, though, whether the net effect of requiring standardization would be socially beneficial. Although standardization would certainly reduce the need to rely on heuristics, it would limit the ability of the market to achieve efficiencies by issuing securities tailored to the particular needs of investors, and it could also make financial markets less competitive than unstandardized markets.[90] Also, perversely, standardization could reinforce complacency with heuristic-derived customs, creating a greater risk of failure if changing circumstances cause those customs to become outdated. Standardization would moreover be likely to face opposition by financial-community members because commoditizing financial products would reduce profitability.[91] It therefore is unclear whether, on a cost-benefit basis, trying to limit complex financial products makes sense.

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innovations. The agency would approve financial products if they satisfy a test for social utility that focuses on whether the product will likely be used more often for insurance than for gambling."), *with* Saule T. Omarova, *License To Deal: Mandatory Approval of New Complex Financial Products*, 90 WASH. U. L. REV. (forthcoming 2012) (manuscript at 52), *available at* http://ssrn.com/abstract=1996755 (proposing a similar regulatory scheme for complex financial products, but one that uses an "economic purpose" test requiring the financial institution "to make an affirmative showing that the proposed complex financial instrument has a *bona fide* economic purpose that promotes productive enterprise and does not merely provide another means of financial speculation or regulatory arbitrage"). Even if this approach otherwise reduces the introduction of dangerous new financial products, however, it would not directly address our Essay's problem: reliance on outdated heuristic-based customs even for financial products that are not inherently dangerous.

89. *See* Anabtawi & Schwarcz, *supra* note 2, at 1390 (discussing, among other things, the Dodd-Frank Act's requirement that certain derivatives products be effectively standardized).

90. *Compare* Schwarcz, *supra* note 52, at 241 (arguing that regulatory attempts to limit uncertainty by standardizing transactions and financial products would likely have unintended negative consequences), *with* Judge, *supra* note 38, at 715 n.184 (arguing that standardization could reduce the informational burden on investors, facilitate coordination in the face of changed circumstances, and make comparing securities issued in different transactions easier for investors), *and* NOURIEL ROUBINI & STEPHEN MIHM, CRISIS ECONOMICS: A CRASH COURSE IN THE FUTURE OF FINANCE 193–94 (2010) (listing potential benefits of increased standardization of ABS, including facilitating comparison and accurate pricing of these securities and "creat[ing] more liquid and transparent markets for [them]," but noting that "a few caveats also come to mind").

91. *See, e.g.*, Joseph R. Mason, *Regulating for Financial System Development, Financial Institutions Stability, and Financial Innovation*, *in* FINANCIAL MARKET REGULATION IN THE WAKE OF FINANCIAL CRISES: THE HISTORICAL EXPERIENCE 225 (Alfredo Gigliobianco & Gianni Toniolo eds., 2009) (arguing that banks may oppose greater standardization because standardization tends to reduce profit margins).

3. *Criminalizing the Following of Outdated Heuristic-Based Customs.* The third way that law could make it less likely that parties will follow outdated heuristic-based customs would be to criminalize the practice. We believe, however, that criminalization would be inappropriate. Criminal liability, which in the United States is largely imposed by state and federal statutes,[92] generally requires mens rea, or a "general notion of moral blameworthiness," on the part of the actor.[93] Many states have adopted a more specific, elemental mens rea component whereby criminal liability attaches only if an actor has a specific state of mind for the crime.[94] Because one who follows a heuristic-based custom may not know, or have any way of knowing, that a particular custom is outdated, it may be difficult to show, much less prove, mens rea.

Moreover, criminalizing the following of outdated heuristic-based customs would not appear to be justified by any of the traditional reasons for imposing criminal liability, of which the most relevant would be deterrence and retribution.[95] The deterrent value is likely to be minimal because, as indicated, it is difficult for one following a heuristic-based custom to know if that custom is outdated.[96] On the other hand, criminalization might have a chilling effect on the use of appropriate heuristics.[97] In other contexts, it has been shown that criminal liability can sometimes "over-deter[]

92. JOSHUA DRESSLER, UNDERSTANDING CRIMINAL LAW 28 (5th ed. 2009).

93. *Id.* at 118; *see also* Morissette v. United States, 342 U.S. 246, 251 (1952) (stating that criminal liability requires "concurrence of an evil-meaning mind with an evil-doing hand").

94. Guyora Binder, *Felony Murder and Mens Rea Default Rules: A Study in Statutory Interpretation*, 4 BUFF. CRIM. L. REV. 399, 411–12 (2000); *see also, e.g.*, CAL. PENAL CODE § 242 (West 2008) (defining "battery" as "any willful and unlawful use of force or violence upon the person of another"); 720 ILL. COMP. STAT. ANN. 5/12-4 (West 2002 & Supp. 2012) (defining "aggravated battery" as "intentionally or knowingly caus[ing] great bodily harm, or permanent disability or disfigurement"). *But see* Gary Fields & John R. Emshwiller, *Federal Offenses: As Federal Crime List Grows, Threshold of Guilt Declines*, WALL. ST. J., Sept. 27, 2011, at A1 ("In recent decades, Congress has repeatedly crafted laws that weaken or disregard the notion of criminal intent."). Elemental states of mind can be used not only to impose liability, but also to impose varying degrees of liability. *Compare, e.g.*, N.Y. PENAL LAW § 125.25 (McKinney 2009) (requiring "intent to cause the death of another person" for one to be guilty of murder in the second degree), *with id.* § 125.15 (requiring the "reckless[] caus[ation of] the death of another person" for one to be guilty of manslaughter in the second degree).

95. *See* DRESSLER, *supra* note 92, at 15–18 (identifying these justifications as deterrence, retribution, denunciation, and rehabilitation).

96. Indeed, people might not always realize that they are relying on a heuristic-based custom in the first place.

97. Financial markets could not operate without reliance on heuristics. *See supra* note 10 and accompanying text.

otherwise desirable business activities" because parties may avoid beneficial but "marginally lawful" acts due to the uncertainty of criminal conviction, thereby increasing social costs and generating inefficiency.[98]

Retribution, or revenge, does not appear to justify imposing criminal liability on parties following outdated heuristic-based customs if the parties did not know the customs were outdated and that following them would cause harm.[99] Nonetheless, when significant harm results, the media often reacts by trying to identify wrongdoers who should be sent to jail. Retribution has been posited, for example, as one reason for Enron executives Kenneth Lay and Jeffrey Skilling's criminal prosecutions.[100] Recent frustration with the Obama administration for not seeking indictments in the wake of the global financial crisis and subsequent banking failures suggests continued strong impulses for retribution.[101] Conceptually, though, significant harm in and of itself should not justify criminalizing actions that lack mens rea.[102]

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98. Sandeep Gopalan, *Skilling's Martyrdom: The Case for Criminalization Without Incarceration*, 44 U.S.F. L. REV. 459, 461 & n.10 (2010) (quoting Kenneth G. Dau-Schmidt, *An Economic Analysis of the Criminal Law as a Preference-Shaping Policy*, 1990 DUKE L.J. 1, 14). We later examine whether civil liability could provide appropriate deterrence. *See infra* Part III.B.

99. *See* DRESSLER, *supra* note 92, at 16 (observing that retributivism justifies punishment only when a wrongdoer violates a societal custom). Another version of retribution seeks to signal to the victim that society values his rights more than those of the wrongdoer. *Id.* at 18. The fairness of punishment under this theory is that, by choosing to commit the act in question, the wrongdoer "elevate[d] himself with respect to others." *Id.* This justification does not apply to failures resulting from the custom-to-failure cycle, however, because the actor did not choose to do wrong and, in fact, he was even unaware that his actions were wrong. To the extent that advocates of criminal liability seek restitution for victims through the imposition of criminal fines, this objective can be just as easily accomplished through civil liability, without the social harms associated with excessive criminalization discussed in this Section.

100. Gopalan, *supra* note 98, at 459–60.

101. *See, e.g.*, *The Diane Rehm Show*: *Risky Bank Investments and the U.S. Economy* (WAMU 88.5 radio broadcast May 14, 2012), *available at* http://thedianerehmshow.org/shows/2012-05-14/risky-bank-investments-and-us-economy ("There is a fundamental problem here in that nobody has prosecuted anybody from the subprime meltdown, anybody from the MF Global situation. . . . My view is there should've been a ton of indictments brought." (quoting Michael Greenberger, a former senior regulator at the Commodity Futures Trading Commission)).

102. Consider, for example, if one person was unwittingly a carrier—but not himself infected due to a natural immunity—of a terminal, contagious disease and spread it to several others. Significant harm results, yet it would be unreasonable to seek revenge on that person for something of which he was unaware.

B. *Addressing Failures That Result When Parties Follow Outdated Heuristic-Based Customs*

To address failures that result when parties follow outdated heuristic-based customs, we focus primarily on internalizing externalities.[103] This focus implicates the theory of civil damages, the goal of which is to "put the plaintiff in the same position . . . as he would have been had there been no injury or breach"—namely, to compensate the plaintiff for actual injuries.[104] In so doing, civil damages (1) "restore a sense of fairness" and (2) incentivize actors to internalize externalities.[105]

Externalities could be internalized by imposing civil damages for costs "closely associated with" the act that causes the externalities.[106] If such damages were imposed for foreseeable harms, the externalities would be at least partly internalized. If such damages were imposed for all harms, regardless of foreseeability, most if not all externalities would be internalized.

Civil damages are normally imposed only for foreseeable harms.[107] However, civil damages can be imposed for all harms, regardless of foreseeability, under the allocation-of-resources justification of enterprise liability.[108] The rationale for enterprise liability is that prices should reflect the "actual costs" of goods so as to allow purchasers to make informed decisions.[109] Therefore, "the cost of injuries should be borne by the activities which caused them," regardless of fault, because injuries represent a "real cost" of those activities.[110] Foreseeability is irrelevant under enterprise liability

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103. Criminal liability also could be used to address those failures, but we have shown in Part III.A, *supra*, why imposing criminal liability would be inappropriate.

104. Steven L. Schwarcz, *Compensating Market Value Losses: Rethinking the Theory of Damages in a Market Economy*, 63 FLA. L. REV. 1053, 1060 (2011) (quoting WALLACE H. WHIGAM, THE ESSENTIALS OF COMMERCIAL LAW 82 (1913)).

105. *Id. See generally* Guido Calabresi, *Some Thoughts on Risk Distribution and the Law of Torts*, 70 YALE L.J. 499 (1961) (discussing two justifications for civil liability on the basis of internalizing externalities—loss spreading and allocation of resources—in the law-and-economics literature).

106. Calabresi, *supra* note 105, at 514.

107. *Id.* at 529.

108. *See id.* (explaining by example that the allocation-of-resources justification would impose costs regardless of foreseeability). Another justification for enterprise liability is loss spreading, such as when the defendant can insure against the damages or pass them on to buyers of products or services. *Id.*

109. *Id.* at 502.

110. *Id.* at 505.

because unforeseeable harms are "just as truly costs" of doing business as foreseeable harms.[111]

1. *Applying the Theory of Civil Damages to Natural Persons and Firms.* Which justification for liability should apply in the case of damages caused by reliance on outdated heuristic-based customs? In a financial context, we believe the answer should depend on whether the defendant is a natural person or a firm. A natural person, unlike an enterprise (such as a firm), usually cannot effectively reallocate resources to prevent harm. A natural person can also be expected to follow—and, as an individual, likely cannot change—social norms, including custom-derived norms. Following these norms should be encouraged because it usually reinforces successful self-regulation of the financial community of which the individual is a member.[112] Therefore, a natural person who follows custom-derived norms based on outdated heuristic-based customs should only be liable for foreseeable damages.

In contrast, financial firms can more effectively reallocate their resources to prevent harm. For example, we already have discussed how firms could engage in more self-aware operational risk management and reporting.[113] Imposing liability for following outdated custom-derived norms, regardless of foreseeability of harm, could be a critical motivator for firms to engage in that risk-management and reporting effort—effectively pushing firms to try to recognize when they are following an outdated norm.[114] That effort is needed because following outdated custom-derived norms no longer would result in "successful" self-regulation.[115] Moreover, under the allocation-of-resources justification of enterprise-liability theory, even unforeseeable harms are a cost of doing business.[116] Therefore, we believe that a financial firm that follows custom-derived norms based

111. *Id.* at 529.

112. *See supra* note 15 and accompanying text.

113. *See supra* Part II.A.

114. This Essay does not examine whether there should be a safe harbor from liability for firms that take appropriate due-diligence steps in that risk-management and reporting effort. Any such safe harbor would have to take into account, for example, how those steps could be defined and whether they would be likely to lead to an acceptable cost-benefit balance.

115. For a discussion of successful self-regulation that results from following custom-derived norms, see *supra* notes 15, 112 and accompanying text.

116. *See supra* notes 108–111 and accompanying text.

on outdated heuristic-based customs should be liable for all damages, whether or not foreseeable.

For example, a financial firm that uses VaR models to assess risk, even after markets have changed to embed credit-default swaps that distort the risk assessments,[117] should be liable for damages to the extent those models underpredict risk and third parties are injured because of that under prediction. An underwriter that sells ABS CDO securities to investors and discloses the risk on the securities based on those VaR models should thus be liable to the investors for any losses resulting from the under prediction.[118]

We recognize possible counterarguments to such expanded civil liability. Expanded liability may seem unfair, for example, because at least some firms may be unable to purchase insurance or charge higher prices to spread unforeseeable losses.[119] Moreover, expanded liability would penalize conduct that conformed to prevailing societal norms—in our case, a custom-derived norm—at the time it was performed.[120] Nonetheless, we support expanded civil liability because not compensating third parties for arguably preventable losses caused by a financial firm's profit-making activities would be equally if not more unfair.[121]

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117. *See supra* notes 41–44 and accompanying text.

118. The discussion in these paragraphs is a normative analysis and does not take into account how positive law, such as whether the underwriter might have a due-diligence duty or defense under applicable securities laws, might impact tort liability. *Cf.* MARC I. STEINBERG, UNDERSTANDING SECURITIES LAW 217–18 (5th ed. 2009) (discussing such a duty and possible defense under the federal securities laws in the United States). Also, we contemplate that if positive law were to be changed to follow our normative analysis, that change would occur legislatively. Because of moral conceptions that tend to influence common-law judges, *see, e.g.*, Jeremy Waldron, *Do Judges Reason Morally?*, *in* EXPOUNDING THE CONSTITUTION 38–39 (Grant Huscroft ed., 2008) (finding that "judges seem to take moral issues seriously"), judges might be reluctant to extend tort-law liability to internalize externalities of actions not deemed to be morally wrongful, *cf.* MICHAEL J. TREBILCOCK, THE LIMITS OF FREEDOM OF CONTRACT 20 (1993) (observing that the law does not require all externalities to be internalized).

119. Calabresi, *supra* note 105, at 529.

120. We assume that the conduct was neither in bad faith nor, at the time performed, in violation of a then-existing law. Also, we are not concerned with the easier case of when law need only address parties who all operate within the given custom. For instance, contracts between merchants to which the Uniform Commercial Code applies are interpreted to implicitly adopt a "usage of trade"—a type of custom-derived norm. U.C.C. § 1-303(c) (2012); Elizabeth Warren, *Trade Usage and Parties in the Trade: An Economic Rationale for an Inflexible Rule*, 42 U. PITT. L. REV. 515, 515 n.3 (1981). In that case, however, only the parties to the contract are affected by the custom-derived norm, while the custom-to-failure cycle addressed in our Essay may result in harm to third parties.

121. *But cf.* TREBILCOCK, *supra* note 118, at 20 (asking what types of externalities should be internalized). Imposing liability on banks, which are members of the financial community, for

2. *Ex Post Facto Considerations.* The foregoing analysis has not necessarily taken into account when the law creating the civil liability arises. That uncertainty calls into question whether civil liability, especially for unforeseeable harm, should be able to be imposed ex post facto—that is, by law that arises, whether by statute or common law, after a party follows an outdated heuristic-based custom.

Imposing ex post facto civil liability on firms that follow outdated heuristic-derived customs should not, on balance, be unfair because, under the allocation-of-resources theory of enterprise liability,[122] harms caused by reliance on outdated heuristic-based customs are as much costs of doing business as more foreseeable injuries. Imposing ex post facto civil liability on natural persons who follow outdated heuristic-derived customs likewise should not be unfair. If, as this Essay argues, natural persons would only be liable for foreseeable harm, they should have been aware of the consequences of following those customs. That point assumes, of course, that foreseeability is not—as it should not be—assessed using hindsight bias.

From a constitutional standpoint, imposing ex post facto civil liability should also be acceptable. Unlike criminal liability, ex post facto civil liability is not unconstitutional.[123] Furthermore, courts routinely impose ex post facto civil liability. For example, in applying tort law's "reasonably prudent person" standard of care in negligence actions,[124] a jury "determines what the expected level of conduct in

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following outdated custom-derived norms also might be inconsistent, to some extent, with cases holding that banks owe no duty to third parties with whom they are not in privity. *See, e.g.*, City Check Cashing, Inc. v. Mfrs. Hanover Trust Co., 764 A.2d 411, 417 (N.J. 2001) ("Absent a special relationship, courts will typically bar claims of non-customers against banks."). *But cf.* Patrick v. Union State Bank, 681 So. 2d 1364, 1369–71 (Ala. 1996) (holding that banks have a duty for foreseeable harms to third parties and stating, in dicta, that "the nature of the activity of a bank . . . is such that some duty to the public in the exercise of the bank's business may be justifiably imposed"). However, any such inconsistency could easily be resolved by imposing a statutory duty.

122. For the observation that not compensating third parties for arguably preventable losses caused by a financial firm's profit-making activities would be equally if not more unfair, see *supra* notes 120–121 and accompanying text.

123. Although the Ex Post Facto Clause of the U.S. Constitution is not expressly limited to laws imposing criminal liability, *see* U.S. CONST. art. I, § 9, cl. 3, the Supreme Court has held that it applies only to criminal laws, Johannessen v. United States, 225 U.S. 227, 242 (1912); *see also* ERWIN CHEMERINSKY, CONSTITUTIONAL LAW: PRINCIPLES AND POLICIES 497 (4th ed. 2011) (citing cases in which the Ex Post Facto Clause did not invalidate civil legislation).

124. JOHN L. DIAMOND, LAWRENCE C. LEVINE & ANITA BERNSTEIN, UNDERSTANDING TORTS 47 (4th ed. 2010). As a positive matter, the reasonably prudent person standard would presumably be applied to members of the financial community in cases of negligence with respect to third parties. The professional standard of care applies in cases involving contracts for

the community should be."[125] Because jury instructions provide little guidance on the proper determination of this standard of care, jurors "must draw on their own understanding of reasonable behavior, based on their experience of the world."[126] In that endeavor, they may call upon their "personal knowledge" of and "community acceptance" of any existing practice and need not confine themselves to the actual actions of community members.[127] Because the jury is effectively defining the community norm at the trial stage and not necessarily at the time of the alleged tort,[128] civil liability is sometimes

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services with a client (that is, in cases of privity). *See, e.g.*, Stephens Indus. v. Haskins & Sells, 438 F.2d 357, 359 (10th Cir. 1971) ("In the practice of his profession, a public accountant may be held liable for damages to his client resulting from either fraud or negligence."). Note, however, that at least one court has held that liability may extend in professional malpractice cases to third-party victims for reasonably foreseeable intentional misrepresentation. Rusch Factors, Inc. v. Levin, 284 F. Supp. 85, 90 (D.R.I. 1968).

125. DIAMOND ET AL., *supra* note 124, at 49; VICTOR E. SCHWARTZ, KATHRYN KELLY & DAVID F. PARTLETT, PROSSER, WADE AND SCHWARTZ'S TORTS 170 (11th ed. 2005). In professional tort-negligence cases—those involving "specialized skill and training"—the standard of care is that of the ordinary, competent member of that profession under similar circumstances. DIAMOND ET AL., *supra* note 124, at 93. Note that the standard is "ordinary," rather than "average," since "average" would, by definition, mean that half the professionals could not meet the standard. SCHWARTZ ET AL., *supra*, at 170. Because this standard of care expressly references the practices of the community, then-existing community custom is clearly implicated: "The defendant's deviation from custom establishes breach of duty, while the defendant's compliance with the custom of the profession insulates the defendant from negligence liability." DIAMOND ET AL., *supra* note 124, at 94. For example, the standard of care for accountants and auditors is "to exercise that degree of care, skill, and competence exercised by reasonably competent members of the profession," considering "generally accepted accounting principles" and "generally accepted auditing standards." WARREN FREEDMAN, MALPRACTICE LIABILITY IN THE BUSINESS PROFESSIONS: A SURVEY GUIDE FOR ATTORNEYS AND CLIENTS 19 (1995) (internal quotation marks omitted).

126. Steven Hetcher, *The Jury's Out: Social Norms' Misunderstood Role in Negligence Law*, 91 GEO. L.J. 633, 654 (2003). For pattern jury instructions, see, for example, JUDICIAL COUNCIL OF CAL. CIVIL JURY INSTRUCTIONS § 401 (2012); NEW YORK PATTERN JURY INSTRUCTIONS—CIVIL 2:16 (3d ed. 2011); and 2 PENNSYLVANIA SUGGESTED STANDARD CIVIL JURY INSTRUCTIONS § 13.20 (4th ed. 2010).

127. Hetcher, *supra* note 126, at 654. Jurors may consider existing customs of the community, but such customs are "not conclusive" and therefore not binding upon the jury. 3 FOWLER V. HARPER, FLEMING JAMES, JR. & OSCAR S. GRAY, HARPER, JAMES AND GRAY ON TORTS § 17.3, at 653–54 (3d ed. 2007). For communities dealing in complex products requiring specialized knowledge—such as the financial community—jurors may also lack the requisite knowledge to consider and assess the customs of those communities. Application of a professional standard of care in which reasonableness is judged according to the actions of an ordinary community member would avoid such difficulties. John E. Montgomery, *Cognitive Biases and Heuristics in Tort Litigation: A Proposal To Limit Their Effects Without Changing the World*, 85 NEB. L. REV. 15, 41 (2006).

128. *See* Hetcher, *supra* note 126, at 634 ("The jury has a great deal of normative discretion in deciding what is reasonably prudent conduct." (quoting Mark P. Gergen, *The Jury's Role in*

imposed based on ex post norms.[129] Indeed, courts and commentators have explicitly acknowledged that evidence of compliance with norms in existence at the time of the alleged tort does not "conclusively establish" lack of breach of duty.[130]

CONCLUSION

In areas of complexity, our limited ability to process information often requires us to simplify reality in order to make decisions. Modern finance, for example, has become so complex that the financial community routinely relies on these types of simplifications, or heuristics. Thus, the financial community routinely determines the creditworthiness of securities by relying on formalistic credit ratings and assesses the risk associated with financial products by relying on simplified mathematical models. Without this reliance, financial markets could not operate.

Deciding Normative Issues in the American Common Law, 68 FORDHAM L. REV. 407, 424–25 (1999)) (internal quotation marks omitted)).

129. Judge Learned Hand noted just this possibility, writing: "It is true that we think of [the duty to act as a reasonably prudent person] as though it were imposed before the event, because it demands only 'reasonable' care; but that does not specify the conduct required and creates a duty incapable of being known in advance, and it is ascertained and imposed only retroactively." Stornelli v. U.S. Gypsum Co., 134 F.2d 461, 462–63 (1943) (dicta). Judge Hand, therefore, subscribed to a formulaic consideration of costs and benefits. United States v. Carroll Towing Co., 159 F.2d 169, 173 (1947) (describing his B < PL analysis). The Restatement (Third) of Torts (2010) endorses adoption of a balancing of factors akin to a "risk-benefit test" similar to Judge Hand's approach. *See* RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL & EMOTIONAL HARM § 3 cmt. e (2010). However, despite the Restatement's position, many jury instructions do not currently instruct the jury to engage in this balancing to determine whether there was a breach. *See, e.g.*, *supra* note 127 and sources cited therein.

130. DIAMOND ET AL., *supra* note 124, at 69. It seems incongruous, however, that deviation from an industry standard sufficiently establishes a breach of duty, while conformity with a standard cannot sufficiently establish a lack of such breach of duty; the industry standard either reflects best practices of the industry or it does not. *See* RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL & EMOTIONAL HARM § 13; DIAMOND ET AL., *supra* note 124, at 68.

Product-liability law adopts a similar position with respect to industry standards. David G. Owen, *Proving Negligence in Modern Products Liability Litigation*, 36 ARIZ. ST. L.J. 1003, 1019–20 (2004); Dominick Vetri, *Order Out of Chaos: Products Liability Design-Defect Law*, 43 U. RICH. L. REV. 1373, 1455 (2009). *But see* Vetri, *supra*, at 1454 (noting that some cases suggest that deviation from industry standards is "persuasive proof of design defect" because such standards "carry[] the approval of a significant segment of an industry" (citation omitted) (quoting Frazier v. Cont'l Oil Co., 568 F.2d 378, 382 (5th Cir. 1978)) (internal quotation marks omitted)). The disproportionate impact afforded deviation from an industry standard relative to conformity with an industry standard seems incongruous: the industry standard either reflects best practices of the industry or it does not.

When reliance on heuristics becomes routine and widespread within a community, it can develop into a custom. Society benefits as long as such a "heuristic-based custom" reasonably approximates reality. In the financial sector, however, rapid changes in markets and products have disconnected some of these customs from reality, leading to massive failures. Increasing financial complexity is also accelerating the rate of change, threatening future failures. This Essay examines this "custom-to-failure cycle," analyzing how law can help to manage the cycle and mitigate its failures. The Essay argues that law should require financial firms to engage in more self-aware risk management and reporting in order to reevaluate their heuristic-based customs periodically. The Essay also engages the fundamental but more difficult question of whether law should impose liability for unforeseeable harm caused by conduct that conformed to prevailing societal norms—in our case, a custom-derived norm for which the underlying heuristic has become outdated—at the time performed. It explains why civil liability should be appropriate to help deter reliance on outdated heuristic-based customs and to internalize the harm that can occur when parties follow those outdated customs. It also shows why financial firms should be liable for all associated harm, whereas natural persons should be liable only for foreseeable harm.