

IT'S (NOT) ALL ABOUT THE MONEY: USING BEHAVIORAL ECONOMICS TO IMPROVE REGULATION OF RISK MANAGEMENT IN FINANCIAL INSTITUTIONS

Nizan Geslevich Packin *

Despite considerable recent legislative attention to risk management such as the passage of the Dodd-Frank Act, excessive risk-taking by financial institutions is still rampant. Decision-makers do not make risky decisions in a vacuum, but in an environment where multiple factors can influence their decisions. Such factors include cognitive-related biases and group-related biases. There are also tools, which have not yet been analyzed in the literature, that regulators can use to reduce undesirable or excessive risk-taking. Indeed, by shaping such environmental factors in which risk-related decisions in financial institutions are made, regulation can help actors make better, less risky choices. With the goal of helping reduce excessive risk-taking by financial institutions, this Article builds on an emerging focus in behavioral law and economics on prospects for “debiasing” actors through the structure of legal rules and policy. Accordingly, the Article suggests using behavioral economics-based legal guidelines to supplement the Dodd-Frank Act’s risk management provisions, specifically the requirement that financial institutions create separate risk committees. Behavioral economics-based legal guidelines would help reduce the degree of biased behavior that risk committees exhibit.

The legal guidelines proposed in this Article focus on the composition, obligations, and work procedures of the financial institutions’ newly mandated risk committees. These guidelines provide behavioral incentives that will not only help reduce excessive risk-taking, but may even raise

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social responsibility awareness, all while not compromising financial institutions' legal and financial responsibilities. The Article uses JPMorgan's 2012 multi-billion dollar trading loss and MF Global's 2011 collapse as case studies on certain behavioral effects and biases that are prevalent in the context of risk-taking. Within the context of these two events the Article analyzes the impact that diversity has on group dynamics, the influence that prior experiences and internal honesty standards can have on decision makers, the choice shift phenomenon, the illusion of control, the framing effect, the impact of accountability, the impact that the association of risk with potential disastrous outcomes has on decision makers, the familiarity bias, and the hindsight bias. The proposed guidelines, which address these biases, could have helped mitigate or possibly avoid the damages from the great JPMorgan trading losses and the MF Global collapse.

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“How risk is judged depends upon the context in which the judgments take place.”¹

INTRODUCTION

Since the 2008 financial crisis, regulators have focused on avoiding similar future crises by using tools such as enhanced macro-prudential regulation and stress testing. While these tools may help to reduce some of the most egregious conduct that led to the crisis, little has changed in financial institutions' business cultures as it relates to decisions on risk. Moreover, while there is no shortage of literature on the need to limit or better monitor risk-taking, there has been little discussion or agreement on what kind of risk-taking is actually excessive, or even how to define excessive risk.² Accordingly, attempts to directly mandate that risk-related decision-makers not take excessive risks have proven ineffective, as have attempts to set risk thresholds for financial institutions.³ In addition, several years after the onset of the financial crisis, many of the ill-designed incentives that initially fueled the financial crisis remain largely undisturbed today. This was demonstrated by JPMorgan's 2012 massive trading loss due to risky behavior,⁴ and the 2011 collapse of publicly traded

1. Berndt Brehmer, *The Psychology of Risk*, in RISK AND DECISION 25, 36 (W.T. Singleton & Jan Howden eds., 1987).

2. See Wulf A. Kaal & Richard W. Painter, *Initial Reflections on an Evolving Standard: Constraints on Risk Taking by Directors and Officers in Germany and the United States*, 40 SETON HALL L. REV. 1433, 1438, 1440, 1449-50 (2010) (“[T]he concept[] of . . . ‘excessive risk’ [is] controversial. Whether . . . there is any such thing as excessive risk, and if so, how excessive risk is to be defined, is another issue. . . . The credit crisis of 2008-2009 also convinced many observers that the level of risk in the financial sector was excessive. . . . The more hotly debated question, however, is . . . [w]hich particular decisions by bankers were excessively risky, which were not, and how can one distinguish between the two? . . . Discerning excessive risk from other risk is highly subjective and an analysis likely to be undertaken differently in different cultural contexts. . . . The predominant unit of analysis for defining excessive risk—the individual risk bearer or society as a whole—can be different in different cultural contexts.”) (citations omitted).

3. At least one court has held that:

[a]t one time . . . prudent investor rule[s] broadly prohibited expansive categories of investments and techniques classified as ‘speculative.’ . . . Since then, [k]nowledge, practices, and experience in the modern investment world have demonstrated that arbitrary restrictions on trust investments are unwarranted and often counterproductive.’ . . . Speculation is no longer imprudent per se.

Heidecker Farms, Inc. v. Heidecker, No. 09-1541, 10-0273, 2010 WL 3894199, at *6 (Iowa Ct.App. Oct.6, 2010) (third alteration in original) (citations omitted).

4. At the time this Article was written, the dimensions of the losses due to the risky

futures broker MF Global, which took excessive risks while maintaining an illusion of control.⁵

Despite regulators' efforts directed at reducing risk-related decision-makers' potential excessive risk-taking, and ample attention given to regulatory overhaul and corporate financial incentives—most notably through the Dodd-Frank Act⁶—not all measures were exhausted. Indeed, we still have not addressed the undesired effects of social influences and psychological biases on the behavior of, and choices made by, the risk-related decision-makers at financial institutions. This is unfortunate because, as I shall demonstrate in this Article, taking excessive risks can be traceable, at least to some extent, to such influences and biases,⁷ and behavioral economic tools can enhance the substantive economic and financial tools that are already being used.⁸ Behavioral economic tools can

behavior demonstrated by JPMorgan Chase & Co. (hereafter “JPMorgan”) were still not clear. As a result, the biggest bank in the United States faced investigations by the Justice Department, the Securities and Exchange Commission, and the Commodity Futures Trading Commission that subpoenaed internal documents related to the bank's loss. *See, e.g.*, Polya Lesova, *J.P. Morgan loss may reportedly hit \$9 billion*, MARKET WATCH, (June 28, 2012, 4:13 PM), available at <http://www.marketwatch.com/story/london-whale-loss-reportedly-may-hit-9-billion-2012-06-28> (discussing the potential losses from JPMorgan's risky investment in complex credit derivatives); Jia Lynn Yang, *Rough times for JPMorgan*, GARP (July 7, 2012), available at <http://www.garp.org/risk-news-and-resources/risk-headlines/story.aspx?newsid=49375> (noting that JPMorgan's stock price had gone down following regulatory inquiries).

5. MF Global Holdings Ltd. (hereafter “MF Global”) handled trades that allowed hedging and speculation in commodities such as pork bellies, metals, and foreign currencies as its primary business through its operations in a dozen countries. It ended up collapsing in late 2011. *See generally* Peter Elkind & Doris Burke, *The Last Days of MF Global*, FORTUNE (June 4, 2012, 3:17 PM), available at <http://finance.fortune.cnn.com/2012/06/04/the-last-days-of-mf-global/> (noting that the company's collapse “shattered public trust in the belief that brokerage customers' money is always safe”).

6. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 922, § 21F(b)(1), 124 Stat. 1376, 1891-96 (2010) [“Dodd-Frank Act”] (to be codified at 15 U.S.C. § 78o-11).

7. In addition, despite the shortage of literature on this point, at least a few commentators paid some attention to social influences and psychological biases. *See* Mary Driscoll, *Pay People to Avoid Risky Behavior*, HARV. BUS. REV. BLOG NETWORK, (May 29, 2012, 9:40 AM) http://blogs.hbr.org/cs/2012/05/pay_people_to_avoid_risky_beha.html (questioning how CEOs can influence far-flung staff to do the right thing consistently, and how to influence behavior).

8. *See generally* Robert J. Shiller, *Behavioral Economics and Institutional Innovation*, 72 S. ECON. J. 2, 269 (2005) (arguing that behavioral economics brought economic ideas to successful results). The normative implications of behavioral decision research are considered to be in the realm of means, not ends. While this Article does not suggest differently, it is based on the concept that “behavioral economics should complement . . . more substantive economic interventions. If traditional economics suggests that we should have a larger price difference between sugar-free and sugared drinks, behavioral economics

help create better incentives, but also “debias” individuals through the structure of legal rules, and help change financial institutions’ risk management culture.⁹ Under this debiasing approach, carefully designed legal guidelines can operate directly on actors’ social and cognitive biases, as well as judgment errors, and attempt to help such actors either to reduce or to eliminate those biases and errors.¹⁰ Since risk-related decision makers make their choices in an environment where multiple noticed and unnoticed factors can affect their choices, legally shaping the environment in which those decisions are made can help decision makers make less biased choices.¹¹

This is not to say that the Dodd-Frank Act fails to regulate dangerous or excessive risk-taking. While the enactment of the Sarbanes-Oxley Act of 2002¹² compelled corporate boards to focus on compliance, the recent financial crisis shifted corporate focus to strategic risk-taking.¹³ As a result, the Dodd-Frank Act appropriately focuses on regulating risks. The Act created the Financial Stability Oversight Council,¹⁴ which is charged

could suggest whether consumers would respond better to a subsidy on unsweetened drinks or a tax on sugary drinks.” George Loewenstein & Peter Ubel, *Economics Behaving Badly*, N.Y. TIMES, July 14, 2010, at A31.

9. See generally Christine Jolls & Cass R. Sunstein, *Debiasing Through Law*, 35 J. LEGAL STUD., 199 (2006); see also Oren Bar-Gill & Chaim Fershtman, *Law and Preferences*, 20 J.L. ECON. & ORG., 331 (2004) (explaining that the legal system does more than provide incentives; it also affects the preference profile in the population and who individuals are). Similarly, it has been argued that: “The suggestion is often made that, if the law symbolically denounces some preferences or reinforces others by appearing to embody certain viewpoints, individuals will come to adopt different preferences and, in turn, to behave differently.” LOUIS KAPLOW & STEVEN SHAVELL, *FAIRNESS VERSUS WELFARE* (2002) (arguing that the influence of legal policy on norms and preferences is founded on the symbolic or expressive impact of law. If the law says that X is negative, then preferences will ultimately adjust to disvalue X; and conversely, if the law says that X is positive, then preferences will adjust to value X).

10. Jolls & Sunstein, *supra* note 9.

11. Richard H. Thaler, Cass R. Sunstein & John P. Balz, *Choice Architecture* (Apr. 2, 2010) (unpublished manuscript), available at <http://ssrn.com/abstract=1583509>.

12. See Sarbanes-Oxley Act of 2002, Pub. L. 107-204, 116 Stat. 745, enacted July 29, 2002 (enhancing financial reporting standards in reaction to several major corporate scandals, which cost investors billions of dollars when the share prices collapsed, including those relating to Enron, Tyco International, Adelphia, Peregrine Systems and WorldCom).

13. It has been argued that historically, American business regulation has been passed in response to major breakdowns in corporate America. See generally DAVID A. SKEEL JR., *ICARUS IN THE BOARDROOM: THE FUNDAMENTAL FLAWS IN CORPORATE AMERICA AND WHERE THEY CAME FROM* 8-14 (2005) (arguing that such major breakdowns are typically related to excessive risk-taking).

14. The Financial Stability Oversight Council includes representatives from the Treasury, the Federal Reserve Board, the SEC, the CFTC and the federal banking regulators.

with identifying risks to global financial stability.¹⁵ The Dodd-Frank Act also includes a “living wills” requirement that attempts to prevent potential systemic risks caused by the collapse of a significant financial institution.¹⁶ This requirement mandates that systemically important financial institutions (SIFIs) develop strategic analyses of their businesses, and submit reorganization or resolution plans for their operations to regulators.¹⁷

While the last few years demonstrated the need for such stricter regulation, enhancing regulation concerning risk-taking can stifle progress and innovation along with the fraud and failure it is intended to reduce.¹⁸ Nevertheless, one of the lessons from the 2008 financial crisis is that risk-taking by large financial institutions imposes externalities on society.¹⁹ In light of those externalities, legal intervention to regulate the risk of such externalities is perfectly justified based on standard economic theory.²⁰ In

15. Dodd-Frank Act §§ 111-112, 12 U.S.C. §§ 5321-5322.

16. See generally Nizan Geslevich Packin, *The Case Against The Dodd-Frank Act's Living Wills: Contingency Planning Following the Financial Crisis*, 9 BERKELEY BUS. L. J. (forthcoming Spring 2012).

17. On September 13, 2011, the FDIC Board of Directors approved a final rule to be issued jointly by the FDIC and the Federal Reserve Board to implement section 165(d) of the Dodd-Frank Act, laying out what the largest and most complex financial firms must include in living wills. A draft of the FDIC's final rule is available online at <http://www.fdic.gov/news/board/Sept13no4.pdf>. On October 17, 2011 the Federal Reserve announced that it had approved the final rule, which became effective November 30, 2011. The Federal Reserve's approval is available online at http://www.federalreserve.gov/news_events/press/bcreg/20111017a.htm.

18. See SKEEL, *supra* note 13, at 196.

19. See e.g., Andrea M. Buffa, Strategic Risk Taking with Systemic Externalities (Aug. 30, 2012) (unpublished manuscript), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2022376; Jean-Pierre Danthine, Member of the Governing Board of the Swiss Nat'l Bank, Speech at the Founding Event of the School of Finance, University of St Gallen: After The Crisis - Improving Incentives In The Financial Sector (May 20, 2011); Viral V. Acharya et al., Market Failures And Regulatory Failures: Lessons From Past And Present Financial Crises (Dec. 5, 2009) (unpublished manuscript), available at http://pages.stern.nyu.edu/~sternfin/vacharya/public_html/market_failures.pdf (discussing how firms need to be forced to internalize the costs of the negative externalities their actions impose on the system as a whole).

20. See Marc Labonte, Cong. Reserch Serv., RL32162, *The Size and Role of Government: Economic Issues*, June 14, 2010, available at <http://www.fas.org/sgp/crs/misc/RL32162.pdf> (“Government intervention can increase economic efficiency when market failures or externalities exist.”); Tyler Cowen, *Public Goods and Externalities*, CONCISE ENCYCLOPEDIA OF ECONOMICS, available at <http://econlib.org/library/Enc1/PublicGoodsandExternalities.html> (“Most economic arguments for government intervention are based on the idea that the marketplace cannot handle externalities. . . . Externalities occur when one person's actions affect another person's well-being and the relevant costs and benefits are not reflected in market prices. . . . A negative externality arises when one person's actions harm another.”).

addition, enhancing the Dodd-Frank Act's regulation of risk management at financial institutions is also appropriate given the prevailing culture within banks to continue incentivizing excessive risk-taking.²¹ Accordingly, trying to further minimize the effects of the mentioned externalities and the culture at banks, the Dodd-Frank Act also requires that all major financial institutions that are supervised by the Federal Reserve and that have over ten billion dollars in assets establish separate board risk committees.²²

The Dodd-Frank Act mandates that each risk committee: (i) oversee its financial institution's risk management practices; (ii) include a number of independent directors determined by the Federal Reserve; and (iii) employ at least one risk management expert, who has experience in managing risk at large, complex financial institutions.²³ The Dodd-Frank Act also states that the Federal Reserve will adopt rules for those risk committees.²⁴

Regulators need to adopt special behavioral-economic based legal guidelines, as further described, that will counterbalance the negative biases of risk committee members. Traditional economic tools are not enough to fight the deeply rooted and undesirable cultural-institutional

21. See Hugo Duncan, *Toxic Culture Risks a New Crisis, Says Bank*, DAILY MAIL (last updated Mar. 26, 2012, 1:55 PM), available at <http://www.dailymail.co.uk/money/news/article-2120224/Toxic-culture-risks-new-financial-crisis-warns-Bank-England.html#axzz2JziHP6Ot> (noting the need for bank cultures to change to prevent another financial crisis). In addition, Professor Skeel has argued that the business culture in America is one that has always loved risk-takers, and that the fundamental flaw in corporate America is the encouragement and facilitation of excessive risk. Accordingly, Professor Skeel argued that having self-confidence as well as a visionary insight, and being extremely competitive—all desired business traits—can make executives and directors take misguided chances and excessive risks. SKEEL, *supra* note 13, at 5-7. In his book, Professor Skeel focuses mainly on several characters whose behavior resulted in major breakdowns. Professor Skeel warns about adopting a business culture where directors and executives overly resemble Icarus, who “thought less and less about risk, and more and more about the majesty of his powers.” SKEEL, *supra* note 13, at 4-5.

22. Pursuant to the Dodd-Frank Act, a board risk committee must be established that will be separate from existing committees, such as the audit committee. The rationale for this requirement is that, in addition to having a retrospective aspect, risk management also has a forthcoming aspect. See Michael E. Murphy, *Assuring Responsible Risk Management in Banking: The Corporate Governance Dimension*, 36 DEL. J. CORP. L. 121, 131 (2011) (noting that, while an audit committee plays an indispensable role in risk management, its main focal point is retrospective; but in determining business tactics, the board must also take under consideration risk issues with fundamental forthcoming aspects, such as risk tolerance and appetite, direction of risk exposure, methods of risk evaluation, emerging risks, and the risk exposure of unconventional planning scenarios).

23. Dodd-Frank Act § 165(h) (to be codified at 12 U.S.C. § 5364).

24. Rules on risk committees were to be adopted by July 21, 2012, but have not yet taken effect.

attitudes and behavioral effects toward excessive risk-taking. Indeed, while the Dodd-Frank Act's comprehensive financial regulatory reform, including its requirement to establish separate risk committees, is an important step in the right direction, it is not enough. For example, in 2012, JPMorgan lost billions of dollars as a result of excessive risk-taking,²⁵ even as regulators were debating how to best implement the Dodd-Frank Act's proposed Volcker rule that is aimed at preventing banks from speculating in financial derivatives. JPMorgan's traders circumvented the rule by labeling the risky bets as "hedges,"²⁶ and its loss took place despite the scrutiny of 110 regulators from several federal agencies domiciled inside JPMorgan.²⁷ Indeed, notwithstanding the attempts to closely monitor the bank, not a single regulator was inside the London Whale's ill-fated trading unit, which managed nearly \$400 billion dollars and was responsible for the loss.²⁸ Bank executives responsible for risk management proved to be ineffective at their jobs.

Incorporating behavioral economic-based guidelines into the regulatory framework of financial institutions' risk management addresses, at least, the following deficiencies in the Dodd-Frank Act: (i) the Act ignores social influences and psychological biases in risk-taking and risk management; (ii) the Act's solutions, for the most part, do not counterbalance the existence of undesired financial incentives; (iii) the Act fails to raise awareness of concerns related to "corporate social responsibility"; and (iv) the Act provides insufficient clarity regarding the

25. This big loss has renewed the push from Democrats for tough implementation of the Dodd-Frank Act. Accordingly, Chairman Tim Johnson said that if a bank with a "solid reputation" like JPMorgan could suffer such staggering losses, it proves that "no financial institution is immune from bad judgment." Peter Schroeder, *Regulators Take Heat for JPMorgan Loss*, THE HILL'S FIN. & ECON. BLOG (June 6, 2012, 11:33 AM), <http://thehill.com/blogs/on-the-money/banking-financial-institutions/231225-banking-regulators-face-fire-on-jpmorgan-losses>.

26. See David Cay Johnston, *JP Morgan's \$2 billion experiment with truthiness*, REUTERS BLOG, (June 11, 2012) ("JPMorgan is now defining as a hedge 'something that performs in exactly the opposite fashion of a hedge.' A hedge is supposed to reduce risk, but according to [a senior regulator at the Federal Savings and Loan Insurance Corporation], the losses came from deals that "dramatically increased risk by placing a second bet in the same direction, which compounded the risk.").

27. See Peter Morici, *JPMorgan Debacle Points to Regulatory Incompetence, Corruption*, CNBC GUEST BLOG (May 29, 2012, 9:59 AM), <http://www.cnbc.com/id/47598741> (noting that the Federal Reserve and the Treasury's Comptroller of the Currency were among agencies involved in the debacle).

28. Pursuant to reports, senior JPMorgan executives were able to convince federal officials that JPMorgan's Chief Investment Office (CIO), was merely hedging, managing cash and taking no significant risks. *Id.* As mentioned, the Dodd-Frank Act was supposed to fix the problem of excessive risk taking partly by hiring more regulators, but that clearly did not help in JPMorgan's case. *Id.*

duties and responsibilities of those responsible for risk management.

First, the Dodd-Frank Act's measures ignore behavioral effects on risk-taking and risk management. To fill that vacuum, there are various methods and tools that can be used to counterbalance behavioral effects including risk managers' cognitive-related biases and group-related biases that are difficult to externally regulate²⁹ and are often associated with agency problems or shareholder biases.³⁰

Second, many of the measures adopted by the Dodd-Frank Act, including the living will requirement, are not preventative solutions. They help deal with complex and problematic situations that SIFIs might be forced to deal with, but focus less on preventing such situations from forming.³¹ Indeed, most Dodd-Frank Act measures do not counterbalance the existence of undesirable financial incentive effects or behavioral effects, which include both cognitive-related biases and group-related biases. By the time the regulators learn about relevant existing risks, it might be too late to attend to those risks.³² Moreover, it can be argued that

29. See generally Lucian A. Bebchuk & Jesse M. Fried, *Paying for Long-Term Performance*, 158 U. PA. L. REV. 1915 (2010) (exploring ways to tie executive compensation to long-term performance as opposed to short-term gain). Similarly, Senator Bob Corker has stated that "[t]he notion of having a regulator besides every banker is . . . a fool's errand. . . . Dodd-Frank was a political response instead of real reform in so many ways." See Schroeder, *supra* note 25.

30. For example, as a corporate enterprise's financial situation deteriorates and insolvency nears, the corporation's shareholders will favor adopting riskier strategies because they bear minimum downside and unlimited upside potential. Pamela L.J. Huff & Russell C. Silberglied, *From Production Resources to Peoples Department Stores: A Similar Response by Delaware and Canadian Courts on the Fiduciary Duties of Directors to Creditors of Insolvent Companies*, 1 J. BUS. & TECH. L. 455, 465 (2007). This is referred to as the "at risk" doctrine, and as a result, the risk of shareholder opportunism falls on the creditors, who must rely on the remaining corporate assets to fulfill their contractual claims. But this shareholder tendency represents only the shareholders' interests and is not ideal for all of the relevant parties involved, nor does it represent all of the parties' interests.

31. See Packin, *supra* note 16, at 150 ("A living wills requirement cannot solve this too-big-to-fail problem, because it is essentially a disclosure requirement and not a substantial regulation that alters negative market incentives or undesired economic incentives."); see also Ron J. Feldman, *Forcing Financial Institution Change Through Credible Recovery/Resolution Plans: An Alternative to Plan-Now/Implement-Later Living Wills*, FED. RESERVE BANK OF MINNEAPOLIS (May 6, 2010), available at http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=4434 ("[L]iving wills are not credible and will not prevent spillovers. First, absent countervailing forces, SIFIs have organized themselves and operate in ways that produce spillovers and bailouts. Neither firm nor government can fix those problems at the last minute. Second, under the living will analogy, the firm draws up the living will. SIFIs have no incentive to draw up credible plans. Finally, creditors will not view living wills drawn up in private as real threats to future bailouts. Thus, creditor discipline will remain too weak.") (citation omitted).

32. Packin, *supra* note 16.

even with the Dodd-Frank Act in place, regulators are still unable to assess activities that seem overly risky. For example, living wills might not disclose to regulators all the relevant information about excessive risks that financial institutions are taking because of corporate governance failures, such as compensation schemes that encourage risk-taking. Despite the Dodd-Frank Act's efforts to prevent future bail-outs, many still believe that SIFIs are too big to fail and will not be left to collapse.³³ This gives even more incentive for decision makers at SIFIs to take on great risks³⁴: If the risks pay off, they reap the rewards; if they do not, then they will be bailed out.³⁵ In the meantime, SIFIs face lower costs of raising capital as they rely on bailouts as a worst-case scenario.³⁶ Different from the majority of rules in the Dodd-Frank Act that, while focusing on avoiding failures, are after-the-fact in nature, the approach presented in this Article assists in tackling some of the negative biases that encourage undesired or excessive risk-taking before such acts occur.

Third, while the Dodd-Frank Act's legitimacy mainly derives from the externalities that large financial institutions impose on society, it fails to address some of the concerns that the corporate social responsibility³⁷ movement it is focused on. Following the 2008 financial crisis, a call for integrating social facets into mainstream economic models has gained unprecedented momentum.³⁸ This is not surprising. Debates over whether corporate social responsibility norms should be adopted stretch from the

33. See STANDARD & POOR'S, BANKS: CREDIT METHODOLOGY 16 (2011), available at <http://img.en25.com/Web/StandardandPoors/CriteriaFinancialInstitutionsRequestforCommentBanksRatingMethodology.pdf> (describing the United States government's likelihood of support for a SIFI as "moderately high").

34. See generally GARY H. STERN & RON J. FELDMAN, TOO BIG TO FAIL: THE HAZARDS OF BANK BAILOUTS (2004) (analyzing the policy issues surrounding the classification of banks as "too big to fail").

35. See generally JOSEPH E. STIGLITZ, FREEFALL: AMERICA, FREE MARKETS, AND THE SINKING OF THE WORLD ECONOMY (2010) (chronicling the forces behind the Great Recession).

36. See Brett McDonnell, *Don't Panic! Defending Cowardly Interventions During and After a Financial Crisis*, 116 PENN. ST. L. REV. 1, 12 (2011) (stating that bailout moral hazard explains lower capital costs).

37. The corporate social responsibility movement started around 1970. The movement's thesis was that in order to solve the ills of society, which were believed to be at least partially the result of corporate behavior, some type of government intervention was required in order to make big corporate enterprises and their executives again accountable, if not to those owning these enterprises, then to the society as a whole. See Douglas M. Branson, *Corporate Governance "Reform" and the New Corporate Social Responsibility*, 62 U. PITT. L. REV. 605, 611 (2001).

38. See Julia M. Puaschunder, *Socio-Psychological Motives of Socially Responsible Investors* (Dec. 30, 2011) (unpublished manuscript), available at <http://ssrn.com/abstract=1977714>.

1930s to the 2010s.³⁹ Many of those advocating for the adoption of such norms argue that large corporations have become so big, and their behavior so impactful, that such corporations should be regarded by the law as public or quasi-public institutions, or at least be regulated as such.⁴⁰ These advocates also argue that large corporations often receive special benefits from state and governmental actors and thus owe an increased responsibility to society.⁴¹ Some commentators even argue that corporate philanthropy can also serve the goal of profit maximization.⁴² In the last few years, this trend has become even more popular, with the debate mainly focusing on whether managers of large corporations should sacrifice profits to advance social goals.⁴³ Some have argued that the legitimate concerns of a corporation should include such broader objectives as sustainable growth, equitable employment practices, and long-term

39. See JOHN R. DANLEY, *THE ROLE OF THE CORPORATION IN A FREE SOCIETY* 3 (1994) (identifying “classical” and “progressive/managerial” arguments concerning corporate responsibility); A.A. Berle, Jr., *Corporate Powers as Powers in Trust*, 44 HARV. L. REV. 1049 (1931) (arguing that the powers granted to corporate management are exercisable only to the benefit of all shareholders); A.A. Berle, Jr., *For Whom Corporate Managers Are Trustees: A Note*, 45 HARV. L. REV. 1365 (1932) (Berle’s response to E. Merrick Dodd, Jr., maintaining that we must maintain emphasis on that fact that corporations exist for the sole purpose of making profits for shareholders); E. Merrick Dodd, Jr., *For Whom Are Corporate Managers Trustees?*, 45 HARV. L. REV. 1145 (1932) (stating that the sole function of the corporation is for making profit for its stockholders combined with the fact that the corporation has a social service as well); C.A. Harwell Wells, *The Cycles of Corporate Social Responsibility: An Historical Retrospective for the Twenty-First Century*, 51 U. KAN. L. REV. 77 (2002) (outlining the history of corporate social responsibility).

40. Cf. Kent Greenfield, *There’s a Forest in Those Trees: Teaching About the Role of Corporations in Society*, 34 GA. L. REV. 1011, 1011 (2000) (“Corporate law is primarily about the relationships among shareholders, boards of directors, managers, and, occasionally, bondholders and other creditors; questions surrounding the role of corporations in society arise only at the periphery of the dominant narratives of corporate law, if at all.”).

41. See, e.g., Kent Greenfield, *Proposition: Saving the World With Corporate Law*, 57 EMORY L.J. 948, 962–63 (2008) (arguing that corporations “are state creations, and no state in its right mind would willfully allow for the creation of institutions as powerful as corporations unless there was a belief that, on balance, society would be better off because of their existence”).

42. See, e.g., Michael E. Porter & Mark R. Kramer, *The Competitive Advantage of Corporate Philanthropy*, HARV. BUS. REV., Dec. 2002, at 59 (“[T]he more closely a company’s philanthropy is linked to its competitive context, the greater the company’s contribution to society will be.”), available at <http://www.expert2business.com/itson/Porter%20HBR%20Corporate%20philanthropy.pdf>.

43. See generally Susan S. Kuo & Benjamin Means, *Corporate Social Responsibility After Disaster*, 89 WASH. U. L. REV. 973 (2012) (exploring corporate social responsibility of locally-owned businesses); see also Einer Elhauge, *Sacrificing Corporate Profits in the Public Interest*, 80 N.Y.U. L. REV. 733, 745 (2005) (positing about social inefficiencies if shareholder welfare was merely based on pure profit-maximization).

social and environmental well-being.⁴⁴ Despite the existence of this debate, the Dodd-Frank Act includes no guidelines as to what social facets, if any at all, should be integrated into mainstream economic models, or how financial institutions can help raise awareness of such issues.

Fourth, the Dodd-Frank Act provides insufficient clarity regarding the duties and responsibilities of those responsible for risk management. Thus far, efforts to improve risk management have focused on emphasizing the duties and responsibilities of those in charge of risk management based on: (i) legal doctrines of fiduciary duties, which attempt to enhance risk oversight and reduce excessive risk-taking;⁴⁵ (ii) stock exchange listing requirements; and (iii) federal regulation, such as the Sarbanes-Oxley Act. Dodd-Frank fails to offer alternative means to mitigate potential problems in risk management or to provide methods to tackle decision makers' biases in favor of excessive risk-taking.

Thus, additional legal guidelines that will focus on risk-taking decision-making processes should be adopted. Such guidelines will help fight negative behavioral effects and deeply-rooted undesired cultural-institutional attitudes toward excessive risk-taking, and it will make risk committees take account of the kinds of concerns that the corporate social responsibility movement is concerned with.

Moreover, regulators not only can, but should guide financial institutions in the right direction and alter their risk-taking and business decision-making procedures by adding behavioral-related legal guidelines.⁴⁶ Indeed, evidence shows that risk management practices are typically driven by regulation and legislation.⁴⁷ This means that any regulation created must be carefully drafted and tailored to counterbalance excessive risk-taking. To create a risk mitigation strategy, regulators must

44. See John M. Conley & Cynthia A. Williams, *Engage, Embed, and Embellish: Theory Versus Practice in the Corporate Social Responsibility Movement*, 31 J. CORP. L. 1, 1-2 (2005) (summarizing the basic claims of corporate social responsibility).

45. See Kristin N. Johnson, *Addressing Gaps in the Dodd-Frank Act: Directors' Risk Management Oversight Obligations*, 45 U. MICH. J.L. REFORM 55, 78 (2011) (discussing the deficiencies in state law regarding accountability for corporate management risk taking).

46. At the 2012 GARP Convention in New York, senior deputy of the Office of the Comptroller of the Currency, Michael Brosnan, "assigned the lion's share of blame for the financial crisis to corporate governance and poor decision-making, rather than derivatives or models - the more commonly named culprits." Michael Eggebrecht, *Financial System Is Stronger but Risk Management Challenges Abound, Say Regulators*, GARP, Feb. 29, 2012, available at <http://www.garp.org/risk-news-and-resources/2012/march/financial-system-is-stronger-say-regulators.aspx>.

47. See Christoph Van der Elst, *The Risks of Corporate Legal Principles of Risk Management* (June 10, 2010) (unpublished manuscript), available at <http://ssrn.com/abstract=1623526> (arguing that provisions of internal control and risk management are driven by regulation and legislation).

prioritize the types of risk on which they wish to focus, study those risks, and predict reactions to any proposed regulation. While risks take many forms, all risks have one defining feature: It is extremely difficult to predict whether any specific risk will materialize and what the ramifications of that risk will be.⁴⁸ Although risks can be both external and internal,⁴⁹ this Article focuses on internal risks, with events ranging from consequences of human errors⁵⁰ to excessive risk-taking and even fraud.⁵¹ Focusing on excessive risk-taking, most legal literature thus far has promoted the notion that it is primarily the result of incentive effects, and more specifically, of compensation schemes that reward short-term gains even when such gains are subsequently reversed.⁵² Indeed, it has been argued that prior to the financial crisis of 2008, executives' payoffs were tied to highly leveraged bets on the value of financial firms' capital.⁵³ Trying to find a solution to this problem, regulators questioned what role, if any, the government should play in reforming executive pay, and how to fix pay structures to reduce excessive risk-taking.⁵⁴

As explained above, this Article offers a different focus—not on compensation schemes, but on behavioral economics⁵⁵ and related aspects

48. See generally RICHARD APOSTOLIK ET AL., FOUNDATIONS OF BANKING RISKS: AN OVERVIEW OF BANKING RISKS & RISK-BASED BANKING REGULATION, § 7.2.4 External Risk (2009) (providing an overview of “the risk associated with events occurring beyond the direct control of the bank”).

49. The risk management of external events concentrates on mitigating the effect of potential events, which can be related to data breaches, cyber security, environmental emergencies and even terrorism. *Id.* at 183 (providing an overview of the types of risks that the Basel II Accord considered as operational risk events).

50. According to Jamie Dimon, the chief executive of JPMorgan, “errors, sloppiness and bad judgment” were responsible for JPMorgan’s several billion dollar loss, which became public in May 2012 and stemmed from a hedging strategy that backfired. See Jessica Silver-Greenberg & Peter Eavis, *JPMorgan Discloses \$2 Billion in Trading Losses*, DEALB%K, (May 10, 2012, 10:11 PM), <http://dealbook.nytimes.com/2012/05/10/jpmorgan-discloses-significant-losses-in-trading-group/>.

51. *Id.*

52. Bebchuk & Fried, *supra* note 29.

53. See generally Lucian A. Bebchuk & Holger Spamann, *Regulating Bankers’ Pay*, 98 GEO. L.J. 247 (2010) (identifying key factors that provided bank executives with excessive incentives to take risks, including compensation structures).

54. See generally Bebchuk & Fried, *supra* note 29, at 1960; Lucian A. Bebchuk et al., *The Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000-2008*, 27 YALE J. ON REG. 257, 257–59 (2010) (analyzing the performance-based compensation of Bear Stearns and Lehman executives that caused increased risk-taking and the eventual collapse of both companies, while allowing those executives to maintain their wealth); Bebchuk & Spamann, *supra* note 53; LUCIAN A. BEBCHUK & JESSE FRIED, *PAY WITHOUT PERFORMANCE: THE UNFULFILLED PROMISE OF EXECUTIVE COMPENSATION* (2004).

55. “Behavioral economists want to understand human frailty and to find more compassionate, realistic and effective ways for people to avoid temptation, exert more self-

of decision-making processes⁵⁶ connected to excessive risk-taking. Although they are also applicable to the board of directors at most financial institutions, the guidelines described in this Article build on the Dodd-Frank Act's requirement to establish separate risk committees and focus on the obligations, composition, and working procedures of financial institutions' risk committees. These guidelines are anchored in behavioral economic research, which shows that individuals fail to process risk in the way economics supposes the traditional rational actor does.⁵⁷

This analysis is novel in several ways. While many books and articles have been published regarding behavioral economics,⁵⁸ none have attempted to suggest behavioral economic-based regulatory guidelines to improve financial institutions' risk-related decision-making procedures. This Article speaks to this lacuna by offering guidelines to help improve risk evaluation and discourage excessive risk-taking for the financial institutions and society. These concepts are now more relevant than ever in light of the Dodd-Frank Act's risk management committee requirements.⁵⁹

control and . . . reach their long-term goals." DAN ARIELY, *THE UPSIDE OF IRRATIONALITY: THE UNEXPECTED BENEFITS OF DEFYING LOGIC AT WORK AND AT HOME* 9 (2010).

56. Related fields include neuroeconomics, which is referenced in a very limited capacity in this Article. Neuroeconomics is a new interdisciplinary field that seeks to explain human decision-making—the ability to process multiple alternatives and choose an optimal course of action. Studies in neuroeconomics show how economic behavior can shape our understanding of the brain and how neuroscientific discoveries can constrain and guide models of economics. See Mark Dean, *What Can Neuroeconomics Tell Us About Economic Decision Making?* (May 11, 2012) (unpublished manuscript), available at http://www.econ.brown.edu/fac/Mark_Dean/Working_Paper_5.pdf.

57. See generally Geoffrey Christopher Rapp, *The Wreckage of Recklessness*, 86 WASH. U. L. REV. 111, 111 (2008) (observing that “individuals fail to process risk in the way the black-letter-law definition of recklessness presumes”).

58. As a general matter, policymakers must cautiously use experimental evidence to draw normative policy conclusions because experimental results may not be robust across contexts. See generally EXPERIMENTAL LAW AND ECONOMICS (Jennifer Arlen & Eric Talley, eds. 2008). However, in the Dodd-Frank Act risk management requirement context, many studies provide the basis for prospective legal reforms and the creation of guidelines. On boards of directors generally, see Lynne L. Dallas, *The Multiple Roles of Corporate Boards of Directors*, 40 SAN DIEGO L. REV. 781, 801–09 (2003); Stephen M. Bainbridge, *Why a Board? Group Decisionmaking in Corporate Governance*, 55 VAND. L. REV. 1, 8 (2002); Donald J. Langevoort, *The Human Nature of Corporate Boards: Law, Norms, and the Unintended Consequence of Independence and Accountability*, 89 GEO. L.J. 797, 801–05 (2001); Jonathan L. Johnson et al., *Boards of Directors: A Review and Research Agenda*, 22 J. MGMT. 409, 411 (1996).

59. Dodd-Frank Act § 165(h) (to be codified at 12 U.S.C. § 5364); see also Matteo Tonello, *Should Your Board Have a Separate Risk Committee?*, HARVARD LAW SCH. FORUM ON CORPORATE GOVERNANCE & FIN. REGULATION, <http://blogs.law.harvard.edu/corpgov/2012/02/12/should-your-board-have-a-separate-risk-committee/> (Feb. 12, 2012, 10:07 AM); Carol Beaumier & Jim DeLoach, *Risk Oversight: Should Your Board Have a Separate Risk Committee?*, THE CONFERENCE BD. (2012), available at

Part I commences by presenting risk management theories, in particular the way risk is managed in financial institutions. Part II describes attempts to regulate the duties and responsibilities of those responsible for risk management and continues with an analysis of the existing relevant legal authorities on risk management and monitoring. Part II also explains why additional regulation or supplementary guidelines are needed. Part III introduces the field of behavioral economics and suggests regulations on the composition, obligations and working procedures of risk committees based on behavioral economics studies. The proposed regulations will be aimed at counterbalancing negative biases, which can impact risk-taking in financial institutions, and “debiasing” the relevant actors through the structure of legal rules.

First, focusing on the *composition* of risk committees, this Article suggests guidelines to counterbalance negative biases. In doing so, it examines: (a) the power of diversity, including diversity in gender, minority representation and various professional backgrounds, and its effect on group dynamics and performance; (b) the experience factor—the difference in attitudes towards making riskier choices between risk managers with or without prior relevant experience; and (c) the choice shift phenomenon, pursuant to which groups make riskier decisions than individuals on finance-related issues, emphasizing the effect of independent directors on group dynamics and decision making.

Second, focusing on the *obligations* of risk committees, this Article examines: (a) the impact of causing individuals to become more aware of their honesty standards, and the value of disclosure; and (b) the illusion of control and dealing with uncontrollable situations.

Third, focusing on the *working procedures* of risk managers and committees, this Article examines: (a) the framing effect, which deals with the impact of presenting formulas or graphs versus verbal explanations on those making decisions; (b) the psychological impact that accountability has on performance; (c) the impact that the association of risk with potential disastrous outcomes has on decision makers and risk-taking; (d) the theme of familiarity bias and its significance in the context of risk perception; and (e) the hindsight bias.

This Article concludes that the Federal Reserve should adopt rules that include behavioral economics-based guidelines regarding risk committees' composition, obligation requirements, and working procedures. Alternatively, the Dodd-Frank Act should be amended to state that failure to comply with the recommended guidelines should be viewed as a

violation under securities laws.

I. MANAGING RISKS IN FINANCIAL INSTITUTIONS

Risk management at financial institutions is the practice of reviewing, assessing, and categorizing the various types of risks to which an institution is exposed.⁶⁰ Risk managers examine the risks relevant to the functioning and operations of their institution, conclude what the probable levels of losses are, monitor any other effects resulting from the examined risks, determine what actions will be taken to handle such risks, and attempt to reduce the likelihood of negative outcomes.⁶¹ Risk managers do all of this in compliance with the business environment in which they operate.⁶²

Risk management is important because it can give financial institutions an advantage over competitors and can even become a profit source.⁶³ Risk management enables financial institutions to track and analyze risks affiliated with any change.⁶⁴ It also helps financial

60. See generally R.S. Raghavan, *Risk Management in Banks*, CHARTERED ACCOUNTANT, Feb. 2003, at 841, available at http://www.icaai.org/resource_file/11490p841-851.pdf (providing an overview of the categories and features of risk management in banks).

61. See DOMINICK SALVATORE, MICROECONOMICS: THEORY AND APPLICATIONS 391 (5th ed. 2009) (“[D]ecision making in business has much in common with military strategy and can thus be profitably analyzed using game theory. False Peacock points out that throughout history, military conflicts have produced a set of basic Darwinian principles that can serve as an excellent guideline to business managers about how to compete in the marketplace. Neglecting these principles can make the difference between business success and failure More than ever before, today’s business leaders must learn how to . . . muster the courage to steer the firm in radical new directions when necessary. Above all, firms must think and act strategically in a world of increasing global competition. Game theory can be particularly useful and can offer important insights in the analysis of oligopolistic interdependence. Indeed, more and more firms are making use of war-games simulations in their decision making.”); James Fanto, *Anticipating the Unthinkable: The Adequacy of Risk Management in Finance and Environmental Studies*, 44 WAKE FOREST L. REV. 731, 735–36 (2009) (analyzing the failures of risk management in financial institutions).

62. See Fanto, *supra* note 61, at 739 (outlining the decision-making strategy of risk managers).

63. Some commentators argue that companies’ misguided efforts to examine and better manage risks actually poses a new kind of risk, and results in losses of profit, because too much focus is given to issues such as insurance coverage, fraud detection, and regulatory compliance, instead of other significant risks. Indeed, pursuant to a study of 1,200 large corporations, “more than 60% of [shareholder] value lost over the last decade has been attributable to strategic risks, like being in the wrong market with the wrong product.” Alix Stuart, *How to Direct a Risk Team*, CFO MAGAZINE, (Apr. 15, 2012), <http://www.cfo.com/article.cfm/14633229>. Christopher Dann, a vice president at consulting firm Booz & Co., argued that “[e]ven financial risks like bad debt or fraud, ‘in terms of shareholder-value loss, are very, very minor.’” *Id.*

64. See generally Johnson, *supra* note 45 (analyzing management tactics related to the

institutions determine if they have infrastructure capable of dealing with various types of risks.⁶⁵ Moreover, risk management keeps senior directors and executives alert and forces them to monitor potential risks.⁶⁶ Finally, creative risk management can help identify alternative courses of action to adopt when handling risks.⁶⁷

Risk managers customarily focus on identifying possible threats before they materialize. Next, they evaluate the likelihood that such threats will impact the financial institution's operations, analyze the potential impact of such risks and prepare suitable responses to the threats.⁶⁸ Most importantly, risk managers organize the identified threats based on the likelihood that each threat will materialize and the potential impact on the financial institution's business.⁶⁹

A great deal of literature has been published on evaluation of the possible effect of threats in risk assessment.⁷⁰ Risk evaluation takes place in many different industries ranging from assessment of national security risks⁷¹ to pricing natural disaster insurance.⁷² Risk management includes using quantitative models to analyze the probability of losing based on different financial decisions. It attempts to quantify potential losses based on past performance of similar investments and exposures.⁷³ Value at risk (VAR), a common financial tool and statistical measure of the possible downsides of assets, is often used in this risk management context.⁷⁴ Risk

Dodd Frank Act).

65. Johnson, *supra* note 45.

66. Johnson, *supra* note 45.

67. Johnson, *supra* note 45.

68. See Packin, *supra* note 16 (analyzing the elements of risk management in the context of preparing for unknown hazards and stress tests).

69. See Fed. Deposit Ins. Corp., *Lessons Learned from Hurricane Katrina: Preparing Your Institution for a Catastrophic Event*, 11 ELEC. BANKING L. & COM. REP. 8, Oct. 2006, at 6 (relaying comments made by financial institutions regarding lessons they learned from the effects of Hurricane Katrina).

70. See, e.g., RICHARD APOSTOLIK ET AL., *supra* note 48 (evaluating possible threats in banking risk assessment); MICHEL CROUHY ET AL., *THE ESSENTIALS OF RISK MANAGEMENT* 149-79 (2006) (surveying common threats in risk assessment).

71. See, e.g., 2 INTERNATIONAL POLITICAL RISK MANAGEMENT: THE BRAVE NEW WORLD (Theodore H. Moran ed., 2004) (assessing risks presented within the structure of the modern international political environment).

72. Karl S. Okamoto, *After the Bailout: Regulating Systemic Moral Hazard*, 57 UCLA L. REV. 183, 214 (2009).

73. See generally Anette Mikes, *Risk Management and Calculative Cultures* 11-16 (June 1, 2008) (unpublished manuscript), available at <http://ssrn.com/abstract=1138636> (providing an overview of enterprise risk management within financial institutions).

74. See generally JUSTIN FOX, *THE MYTH OF THE RATIONAL MARKET* 238 (2009); CROUHY, *supra* note 70, at 149-79; Darrell Duffie & Jun Pan, *An Overview of Value at Risk*, J. DERIVATIVES 7 (Spring 1997).

managers use VAR to try to identify the various risks to which financial institutions are exposed.⁷⁵ VAR produces an approximation of the worst-case scenario concern by assessing at different confidence degrees,⁷⁶ the minimum values of assets in the future,⁷⁷ and providing an estimate of how much money can be lost in a single business day. Risk managers make their VAR calculations on the key assumption that historical data about past investment performance are useful predictors of future performance and that deviations follow a bell curve distribution.⁷⁸ Financial institutions utilize VAR to decide whether they are comfortable with their current risk exposure. If they are not, they can modify their trading strategies.⁷⁹ Throughout the years, using VAR to evaluate risks has become very popular in the private sector and by governmental agencies.⁸⁰ It is

75. VAR is also used as a risk related control, much like stress tests, equity adequacy or liquidity controls, single transaction limits, and balance sheet limits. See Report of Anton R. Valukas, Examiner, Appendix 8 at 6-19, In re Lehman Bros. Holdings, Inc., Bankr. No. 08-13555 (JMP) (Bankr. S.D.N.Y. Mar. 11, 2010), available at <http://jenner.com/lehman/VOLUME%208%20-%20APPENDICES%208-22.pdf>.

76. For more information on the percentages of confidence intervals that are used by different institutions to calculate VAR values, see Colin Lokey, *Morgan Stanley Is Far More Risky Than Investors Think*, SEEKING ALPHA (June 25, 2012), <http://seekingalpha.com/article/682691-morgan-stanley-is-far-more-risky-than-investors-think>.

77. See Okamoto, *supra* note 72 at 214 (noting the limitations of VAR as a mechanism for estimating worst-case scenarios).

78. See *The Risks of Financial Modeling: VAR and the Economic Meltdown: Hearing Before the Subcomm. on Investigations and Oversight of the H. Comm. on Science and Technology*, 111th Cong. (2009) (statement of Richard Bookstaber) (transcript available at http://democrats.science.house.gov/Media/file/Commdocs/hearings/2009/Oversight/10sep/Bookstaber_Testimony.pdf) (reflecting the assumptions implicit in VAR analysis).

79. See Peter Conti-Brown, *A Proposed Fat-Tail Risk Metric: Disclosures, Derivatives, and the Measurement of Financial Risk*, 87 WASH. U. L. REV. 1461, 1461-62 (2010) (“[I]f a firm is uncomfortable with [their] exposure [after examining the VAR], the firm can make appropriate adjustments to its trading strategies and positions.”).

80. VAR is used by the U.S. Securities and Exchange Commission, the U.S. Federal Reserve, the UK Financial Supervisory Authority, and the Basel Committee on Banking Supervision. See RICHARD DALE, RISK AND REGULATION IN GLOBAL SECURITIES MARKETS 78 (1996); Capital Requirements for Market Risk, 60 Fed. Reg. 38,142 (proposed July 25, 1995) (to be codified at 12 C.F.R. ch. 2) (suggesting a “pre-commitment approach” for valuation of market risk); Sec. & Futures Auth., Board Notice 249: *Implementation by SFA of the Capital Adequacy Directive* (1995) (providing an overview of changes to the Capital Adequacy Directive); Basel Comm. on Banking Supervision, *An Internal Model-Based Approach to Market Risk Capital Requirements* 6 (1995) (offering a framework for analysis of market risks by banks). Sheila Bair, former chairman of the Federal Deposit Insurance Corporation, who left in 2011, has publicly stated that for years she fought the Office of the Comptroller of the Currency and New York Fed over how much banks should be allowed to rely on VAR models. See *JPMorgan Not Triggering Major Regulatory Rethink*, REUTERS, (June 1, 2012), available at <http://www.advancedtrading.com/regulations/240001296>.

generally considered to be an effective measurement.⁸¹

Since the 2008 crisis, risk management has been in the spotlight.⁸² As a result, regulators have required financial institutions to establish risk management committees that hold documented regular meetings to discuss their institution's risk profile.⁸³

Risk management has also been connected to capital regulation, and financial institutions are now expected to have a fixed percentage of leverage ratio.⁸⁴ The Basel Committee on Banking Supervision emphasized that risk management should be an essential function of financial institutions.⁸⁵ The more dangerous an institution's assets and businesses are, the more capital it is required to have in reserve.⁸⁶ Thus, a risky institution will have less available funds to loan for investments.

Currently, U.S. financial regulators monitor risk assessments of financial institutions' risk management departments.⁸⁷ However, financial institutions are free to use their own risk assessment models.⁸⁸ While

81. See Conti-Brown, *supra* note 79, at 1462 (listing the many government agencies that have endorsed the VAR).

82. See, e.g., *Financial Regulation: Review of Regulators' Oversight of Risk Management Systems at a Limited Number of Large, Complex Financial Institutions: Hearing Before Subcomm. on Sec., Ins., and Inv., S. Comm. on Banking, Hous., and Urban Affairs*, 111th Cong. 20-22, 24 (2009) (testimony of Orice M. Williams, Dir., Fin. Mkts. and Cmty. Inv., U.S. Gov't Accountability Office) (arguing that risk management models failed to "price . . . risky assets that precipitated the crisis"); *The Financial Crisis and the Role of Federal Regulators: Hearing Before the H. Comm. on Oversight and Gov't Reform*, 110th Cong. 17-18 (2008) (testimony of Alan Greenspan, former Chairman, Bd. of Governors of the Fed. Reserve Sys.) (arguing that risk management models failed to "price . . . risky assets that precipitated the crisis"); Fanto, *supra* note 61, at 742 (assessing the growth of risk management in financial institutions and its shortcomings).

83. See, e.g., Report of Anton R. Valukas, Examiner, Appendix 8 at 33-34, *In re Lehman Bros. Holdings, Inc.*, Bankr. No. 08-13555 (JMP) (Bankr. S.D.N.Y. Sept. 14, 2011), available at <http://jenner.com/lehman/VOLUME%208%20-%20APPENDICES%2008-22.pdf> (documenting a meeting discussing an institution's risk).

84. Leverage ratio means a fixed amount of capital in relation to the adjusted total assets amount. 12 C.F.R. § 3.6(b) (2012).

85. Fixing a specific level of capital should be based on the financial institution's assets and operations risk assessment. See Risk-Based Capital Standards: Advanced Capital Adequacy Framework—Basel II, 72 Fed. Reg. 69,288, 69,294-98 (Dec. 7, 2007) (describing how the internal model approach, which is used to measure market risk, has broadened and now includes credit and operational risk as well). See generally PETER S. ROSE & SYLVIA C. HUDGINS, *BANK MANAGEMENT & FINANCIAL SERVICES* 483-84 (7th ed. 2008) (broadly discussing the Basel Committee on Banking Supervision).

86. 12 C.F.R. § 3.6(c) (2012).

87. See DIV. OF BANKING SUPERVISION & REG., FED. RESERVE BD., *BANK HOLDING COMPANY SUPERVISION MANUAL* supp. 28 § 4070 (2005) (discussing the Bank Holding Company Rating System that includes a rating on an "R" component, which represents risk management).

88. See *id.* (explaining how the internal model approach, which was used to measure

financial institutions enjoy the freedom to use their own risk assessment models and methods, the primary purpose of mandating separate risk management committees is to ensure corporate boards receives advice on the institution's risk-related activities.⁸⁹

Financial institutions customarily allocate "substantial resources" to measuring, analyzing, and managing risk.⁹⁰ The main functions of a risk management committee should ideally include: (i) understanding and identifying all risks, (ii) ensuring that appropriate limits are in place for all transactions and products, and (iii) protecting the financial institutions against "catastrophic" loss.⁹¹ Risk committee members, therefore, need to have full access to all the relevant, complete, and accurate information available regarding their institution's risk, potential exposures and market-related information.

Ideally, risk management committee members should be free from the influence of insiders or other associations that could inappropriately impact their judgment as a committee member.⁹² There can be some overlap between the members of the risk committee and the audit committee of a financial institution, but if the overlap is too big, the burden and the responsibilities of the dual committee members might negatively impact their ability to perform their roles as members of both committees.⁹³ In addition, members of the risk committees may not receive direct or indirect compensation outside of standard fees for their service on the committee.

Risk committees must have the ability to retain external counsel, consultants, independent auditors and various other experts if they are needed for the members to fulfill their responsibilities.⁹⁴ Accordingly,

market risk, is now extended to credit and operational risk).

89. See, e.g., Enterprise Risk Management Committee Charter, ULLICO INC. (April 22, 2010), available at <http://www.ullico.com/sites/ullico.com/files/pdf-forms/RiskCommCharter042210.pdf> (outlining duties of a particular risk management committee).

90. Despite its eventual collapse, Lehman and its competitors allocated great resources for risk management. By 2008, Lehman's Global Risk Management Group ("GRMG") had grown to include approximately 450 professionals with staff in each of its trading centers. Clearly the GRMG did not prevent Lehman's fall, despite the fact that "[w]ithin the industry, Lehman's risk management function was widely regarded as among the best." Report of Anton R. Valukas, *supra* note 83, at 1-2.

91. Report of Anton R. Valukas, *supra* note 83, at 6.

92. See Enterprise Risk Management Committee Charter, *supra* note 89 (outlining permissible influences on risk management committee).

93. John C. Partigan & Daniel McAvoy, *The role and construction of risk committees*, CORP. RESPONSIBILITY ALERT, NIXON PEABODY LLP, at 6, August 11, 2010, available at http://www.nixonpeabody.com/files/Corporate_Responsibility_Alert_08_11_2010.pdf.

94. See Beaumier & DeLoach, *supra* note 59 (arguing that the committee should be able to invite to its meetings any professional or outside expert it deems appropriate in order to carry out its duties, and shall have the authority to approve the expenses and retention fees of such outside advisors).

members need the capability to authorize payment of professional fees.⁹⁵

Though risk management committees have wide discretion over the frequency of meetings, any recess longer than a few weeks may cause committee members to lose touch with ongoing issues. In 2011, the year that preceded JPMorgan's several billion dollars loss, their audit committee met fifteen times while their risk panel met only seven times.⁹⁶ Following the losses, JPMorgan announced that its board's audit and risk committees would meet every week for at least several months.⁹⁷ Accordingly, it appears that in order for risk committee members to be kept up-to-date with current matters, weekly or daily risk exposure and policy compliance reports detailing the institution's investments and market circumstances are appropriate. Finally, the risk committee should be able to discuss issues with the institution's audit committee, executives and management, external counsel, and independent consultants. This would afford the committee the ability to analyze pending issues, state and federal regulations and developments, the institution's risk management programs, and others matters of concern.⁹⁸

The risk committee must keep accurate minutes and maintain records of any written consent actions that were agreed upon without a meeting to ensure that all actions approved and decided by the committee are documented. Both the minutes and the consent records must be kept in the financial institution's corporate books and records.⁹⁹

Risk management committees are typically responsible for certain types of goals and tasks.¹⁰⁰ First, they need to determine their financial institution's risk management framework, including the risk governance structure, competencies, tolerance, and management initiatives, and they must frequently review it.¹⁰¹ As part of this review, the committee must also coordinate the institution's risk management activities and decide how

95. In Lehman's case, for example, GRMG's mission was to "protect and enhance the value of the franchise by proactively identifying, evaluating, monitoring and controlling Firm market, credit and operational risks." In addition to understanding and measuring the risks associated with the firm's business activities, GRMG was responsible for developing various risk related policies, procedures, models, and limits." Report of Anton R. Valukas, *supra* note 83, at 2.

96. Dan Fitzpatrick & Joann S. Lublin, *J.P. Morgan Plans Risk-Panel Shift*, WALL ST. J. (May 25, 2012, 6:24 PM), available at <http://online.wsj.com/article/SB10001424052702304707604577426533056645956.html>.

97. *Id.*

98. *See, e.g.*, Enterprise Risk Management Committee Charter, *supra* note 90 (describing which matters the risk management committee handles).

99. *Id.* Some of the guidelines I propose, this one included, were inspired by the ULLICO Charter.

100. *Id.*

101. *Id.*

the risk management strategy and related activities impact the institution's general business and financial strategy.¹⁰² Second, risk management committees should ideally review their institutions' risk exposure by geographical division. This review should focus primarily on capital, earnings and compliance with the financial institution's risk policies regarding the types of risks mentioned above,¹⁰³ including, *inter alia*, credit risk,¹⁰⁴ market risk,¹⁰⁵ operational risk,¹⁰⁶ underwriting risk,¹⁰⁷ and liquidity risk.¹⁰⁸ Third, risk management committees should assess possible changes in geographical, political, environmental and demographic conditions, and relevant legislative, legal, and regulatory provisions.¹⁰⁹ Fourth, risk

102. At JP Morgan, risk committees "are established at the Firm and business levels. These committees periodically perform comprehensive reviews of the risk profiles of their businesses and the Firm." TOM DAULA, RISK MANAGEMENT AT MORGAN STANLEY: AN OVERVIEW (Feb. 14, 2006), available at http://www.morganstanley.com/about/ir/presentations/risk_tom_daula02_14_06.pdf.

103. Lehman's GRMG in the United States was structured to include several separate departments, including Market Risk Management, Credit Risk Management, Operational Risk Management, Quantitative Risk Management, Sovereign Risk Management, Investment Management Division Risk Management, and Risk Control and Analysis. Outside of the United States, GRMG was divided into regional sub-departments. See Report of Anton R. Valukas, *supra* note 83, at 2 (discussing the Lehman GRMG).

104. Credit risks are possible losses generated from defaults of payments of principal and interest on consumer or corporate loans made by a financial institution. Fanto, *supra* note 61, at 736. For a more detailed analysis of credit risk modeling see generally Robert P. Bartlett, III, *Making Banks Transparent*, 65 VAND. L. REV. 293, 311–22 (2012).

105. Market risks are possible losses generated from changes in the value of security prices due to changes in interests or default rates. ANTHONY SAUNDERS & MARCIA MILLON CORNETT, FINANCIAL INSTITUTIONS MANAGEMENT: A RISK MANAGEMENT APPROACH 266 (6th ed. 2008).

106. Operational risks are risks of loss resulting from failed or inadequate internal procedures, human or systems errors, or external events. The Basel II Accord identifies five types of operational risks: internal process risks, people risks, legal risks, systemic risks and external risks. It also provides three approaches to calculating such risks: the Basic Indicator Approach, the Standardized Approach, and the Advanced Measurement Approach. APOSTOLIK ET AL., *supra* note 48, at 179–200.

107. Underwriting risks generally refer to the risk of loss on underwriting activity in the insurance or securities industries. See THE FINANCIAL SUPERVISORY AGENCY, INSURANCE UNDERWRITING RISK CHECKLIST AND MANUAL, available at http://www.fsa.go.jp/en/refer/manual/hoken_e/h08.pdf (explaining underwriting and insurance related risks from the Financial Supervisory Agency, the Japanese agency that oversees banking, securities and exchange, and insurance).

108. Liquidity risks concern situations where financial institutions fall short of cash and are not able to borrow cash from other financial institutions or sell assets. One example is the risk of a "run on the bank," which SIFIs face because a depositor can demand the return of their funds at any time. If there is mass-demand of depositors to retrieve their deposits at once, the SIFI may not be able to accommodate these requests. Okamoto, *supra* note 72, at 193.

109. As with Lehman's risk management department, each global or regional head of a

management committees should obtain and review periodic internal reports on their management's communication of risk related policies across the institution, the framework of risk responsibility and assignment throughout the institution, and the risk management perspective of parties interacting with the institution, such as rating agencies, legislative authorities, customers, distributors, employees' unions, and more. Fifth, risk management committees should meet with senior executives, auditors, and legal personnel to review, analyze, and evaluate important risks and exposures, courses of action adopted to minimize any potential risks or exposures analyzed, and the institution's underlying policies in connection with risk management. Sixth, risk management committees should evaluate their institution's guidelines on categorizing, prioritizing, and reporting risks in order to enhance efficient risk management. Lastly, the risk management committees need to provide their institution's boards with frequent reports on the committee's work, recommended changes, notable improvements, suggestions and special progress that was achieved, as well as relevant findings obtained by the committee.

II. DUTIES ASSOCIATED WITH RISK MANAGEMENT

In recent years, Congress and regulators have attempted to address deficiencies in risk management that contributed to the 2008 crisis.¹¹⁰ Arguing that enterprise risk management is an internal affairs issue subject to state law rather than federal regulatory oversight, commentators have objected.¹¹¹ They contend that federal regulation of enterprise risk management is unnecessary, unsuccessful, and undesirable.¹¹² These commentators ignore three significant issues. First, while systemic risk is important, weaknesses in enterprise risk management only became apparent after major financial institutions suffered great losses.¹¹³ Enabling

risk department or sub-committee should report about any such changes to the firm's risk management committee directly. *Id.*

110. See sources cited *infra* note 143.

111. See generally Roberta Romano, *The Sarbanes-Oxley Act and the Making of Quack Corporate Governance*, 114 YALE L.J. 1521 (2005) (criticizing The Sarbanes-Oxley Act for altering the relationship between state and federal regulators).

112. See, e.g., Stephen M. Bainbridge, *Dodd-Frank: Quack Federal Corporate Governance Round II*, 95 MINN. L. REV. 1779, 1789–95 (2011) (arguing that Delaware's corporate regulatory infrastructure is better suited than federal regulators to address corporate law); E. Norman Veasey, *The Challenges for Directors in Piloting Through State and Federal Standards in the Maelstrom of Risk Management*, 34 SEATTLE U. L. REV. 1, 13 (2010) (arguing that precedent "should insulate risk management from judicial review").

113. See Kristin N. Johnson, *From Diagnosing the Dilemma to Divining a Cure: Post-Crisis Regulation of Financial Markets*, 40 SETON HALL L. REV. 1299, 1306–12 (2010) (discussing the collapse of Bear Stearns).

private businesses to shift the negative externalities of their actions to the public lowers social welfare and results in suboptimal outcomes.¹¹⁴ Second, while enterprise risk management has been categorized as an internal corporate affairs issue,¹¹⁵ some scholars argue that state law inadequately regulates corporate governance conflicts between shareholders' long-term interests in the firm and directors and executive officers' shorter-term interests.¹¹⁶ Third, state legislatures and courts face considerable pressure to adopt and maintain executive-friendly corporate governance policies.¹¹⁷ Indeed, following many years of competition among various states to boost the number of entities incorporated in their jurisdictions, Delaware's success has caused many states to conform their standards to those of Delaware.¹¹⁸ Moreover, Delaware courts have recently deferred to directors in claims ranging from directors' breach of fiduciary duties to their failure to adopt reasonable enterprise risk management policies.¹¹⁹ It thus seems unlikely that states will impose enhanced fiduciary obligations to oversee enterprise risk management.

Prior to the 2008 crisis, attempts to enhance risk management were based on three main sources, all of which emphasized the duties of those responsible for risk management: (i) legal doctrines of fiduciary duties found in state statutes and common law accountability standards,¹²⁰ (ii)

114. See Kristin N. Johnson, *Things Fall Apart: Regulating the Credit Default Swap Commons*, 82 U. COLO. L. REV. 167, 175 (2011) ("The ability of market participants to extract and internalize benefits from the commons resource, while shifting the costs of their self-aggrandizing activities to other groups, presents one of the most significant concerns in commons and financial markets.").

115. See Robert T. Miller, *Oversight Liability for Risk-Management Failures at Financial Firms*, 84 S. CAL. L. REV. 47, 106–07 (2010) (discussing how companies manage risks internally); Stephen M. Bainbridge, *Caremark and Enterprise Risk Management*, 34 J. CORP. L. 967, 969 (2009) (describing enterprise risk management as how a business organization anticipates and responds to "uncertainties associated with the organization's strategic objectives").

116. See generally Johnson, *supra* note 45 at 56 (arguing that state governments and courts "deferring to the directors and executive officers neglects a critical conflict that illustrates the classic agency problem").

117. See generally Faith Stevelman, *Regulatory Competition, Choice of Forum, and Delaware's Stake in Corporate Law*, 34 DEL. J. CORP. L. 57 (2009) (discussing Delaware's preeminence in corporate law, and possible threats to that status). But see Jonathan R. Macey & Maureen O'Hara, *The Corporate Governance of Banks*, FED. RES. BANK OF N.Y. ECON. POL'Y R. 91, 92 (2003) (arguing that bank directors should be forced to take solvency risk explicitly and systematically into account when making decisions, or else make it clear that such directors should and would face personal liability for any failure to do so).

118. *Id.*

119. See generally Johnson, *supra* note 45 at 60 ("Delaware courts' narrow and deferential interpretation of directors' fiduciary obligations may not offer a viable mechanism for imposing liability for directors' failure to monitor enterprise risk.").

120. See Johnson, *supra* note 45 at 78 (examining state approaches to risk management

stock exchange listing requirements and the NASDAQ Stock Market,¹²¹ and (iii) the Sarbanes-Oxley Act.¹²²

The first source focuses on the concept of directors' fiduciary duties,¹²³ which in the United States is mainly based on Delaware corporate law.¹²⁴ Directors in a solvent corporation have a fiduciary duty to the corporate enterprise, including its shareholders, but when the corporation becomes insolvent, the duty extends to, and focuses on, the corporation's creditors to protect the remaining assets by paying off creditor claims.¹²⁵ There is even some precedent holding that a corporation's directors owe fiduciary duties to the bondholders and other creditors if the corporation is in the zone of insolvency,¹²⁶ between solvency and insolvency.¹²⁷ Indeed, certain courts have held that the fiduciary duties owed to insolvent corporations apply to situations of near-insolvency,¹²⁸ and therefore

oversight).

121. See generally Darren C. Skinner, *Director Responsibilities and Liability Exposure in the Era of Sarbanes-Oxley*, 52 PRAC. LAW. 29 (2006), available at http://www.arnoldporter.com/resources/documents/Practica_Lawyer_Skinner.pdf.

122. *Id.*

123. See *Koehler v. Black River Falls Iron Co.*, 67 U.S. 715, 720–21 (1862) (“[Directors] hold a place of trust, and by accepting the trust are obliged to execute it with fidelity, not for their own benefit, but for the common benefit of the stockholders of the corporation.”).

124. In the U.S., corporations are creatures of the law of the state of their incorporation, and thus, their fiduciary duties vary by state. Since most publicly traded Fortune 500 companies are incorporated in Delaware, Delaware law forms the backbone of U.S. fiduciary duty law. See *Kamen v. Kemper Fin. Servs., Inc.*, 908 F.2d 1338, 1343 (7th Cir. 1990), *rev'd on other grounds*, 500 U.S. 90 (1991) (noting that many states adopt Delaware law).

125. See, e.g., *Jewel Recovery, L.P. v. Gordon (In re Zale Corp.)*, 196 B.R. 348, 354 (Bankr. N.D. Tex. 1996) (noting that Delaware law establishes a fiduciary duty for trustees of an insolvent corporation to ensure that “the assets of the corporation becomes a trust for the benefit of the corporation’s creditors”). This is referred to as the trust fund doctrine, whereby an insolvent corporation’s assets are to be kept in trust for distribution to its creditors. BLACK’S LAW DICTIONARY 1554 (8th ed. 2004); Gregory V. Varallo & Jesse A. Finkelstein, *Fiduciary Obligations of Directors of the Financially Troubled Company*, 48 BUS. LAW. 239, 244 (1992).

126. See generally Stephen M. Bainbridge, *Much Ado About Little? Directors’ Fiduciary Duties in the Vicinity of Insolvency*, 1 J. BUS. & TECH. L. 335 (2007) (discussing the fiduciaries duties owed to creditors by the directors of near-insolvent corporations, but arguing that concern over zone of insolvency cases is overstated).

127. See, e.g., Cory Dean Kandestin, Note, *The Duty to Creditors in Near-Insolvent Firms: Eliminating the “Near-Insolvency” Distinction*, 60 VAND. L. REV. 1235, 1251 (2007) (“[A] corporation need not be insolvent in fact in order to trigger a fiduciary duty owed to creditors.”).

128. See, e.g., *Jewel Recovery*, 196 B.R. at 354–55 (stating that Delaware may have expanded the duty insolvent corporations owed to creditors to apply to near-insolvent corporations); *Credit Lyonnais Bank Nederland, N.V. v. Pathe Comm’n. Corp.*, 17 DEL J.

creditors could rightfully challenge a board's decision if they believed the decision breached the directors' fiduciary duties owed to the creditors.¹²⁹ While the law applied to near insolvent corporations is not always clear, it permits directors of an enterprise in the zone of insolvency to consider creditor interests, and avoid taking excessive risks.¹³⁰ Indeed, it has long been held that directors of insolvent corporations owe a direct fiduciary duty to creditors in their capacity as trustees of corporate assets.¹³¹

Fiduciary duties take two typical forms.¹³² First, directors owe a duty of loyalty to prioritize the interests of the corporation and its shareholders over their own.¹³³ Second, directors owe a general duty of care, both in process and substance,¹³⁴ to act in good faith and to exercise reasonable diligence in a manner they reasonably believe to be in the best interests of the corporation and its shareholders.¹³⁵

When directors violate their duty of care, they are no longer protected from judicial second-guessing of their decisions by the business judgment

CORP. L. 1099, 1155 (Del. Ch. Dec. 30, 1991) (“[W]here a corporation is operating in the vicinity of insolvency, a board of directors is not merely the agent of the residue risk bearers, but owes its duty to the corporate enterprise.”).

129. *Carrier v. Jobs.com Inc.*, 393 F.3d 508, 534 n.24 (5th Cir. 2004) (citing *Weaver v. Kellogg*, 216 B.R. 563, 583–84 (Bankr. S.D. Tex. 1997)) (“[U]nder both Delaware law and Texas law, corporate insiders may have a fiduciary duty to the corporation’s creditors even when the corporation [i]s not insolvent. . . .”); *Jewel Recovery*, 196 B.R. at 354–55.

130. *See, e.g., Credit Lyonnais Bank*, 17 DEL J. CORP. L. at 1155–56 n.55 (explaining how the zone of insolvency can change incentives).

131. *See, e.g., Fed. Deposit Ins. Corp. v. Sea Pines Co.*, 692 F.2d 973, 976–77 (4th Cir. 1982) (“[W]hen the corporation becomes insolvent, the fiduciary duty of the directors shifts from the stockholders to the creditors.”). *But cf. Prod. Res. Grp., L.L.C. v. NCT Grp. Inc.*, 863 A.2d 772, 788–89 (Del. Ch. 2004) (inferring that there might not be an affirmative duty in the zone of insolvency, but rather that directors could profit from a “shield” to protect them from shareholder suits).

132. *But see Douglas G. Baird & M. Todd Henderson, Other People’s Money*, 60 STAN. L. REV. 1309, 1315–16 (2008) (arguing that, “it may make sense to eliminate the concept of fiduciary duty from corporate law altogether. . . . [D]irectors should merely be obliged to honor the terms of the firm’s investment contracts, even when they lead to decisions that are not value-maximizing ex post for the investors as a group.”).

133. *See FRANKLIN A. GEVURTZ, CORPORATION LAW* 278 (2d ed. West 2010)

134. *See, e.g., Grobow v. Perot*, 539 A.2d 180, 186 (Del. 1988) (noting that courts can theoretically review the procedural aspects of a director’s decision, and review the substance of the transaction).

135. *Id.*; *see also Cede & Co. v. Technicolor, Inc.*, 634 A.2d 345, 361 (Del. 1993) (discussing the duty of loyalty owed by directors and board members); *Smith v. Van Gorkom*, 488 A.2d 858 (Del. 1985) (holding that the business judgment rule does not protect grossly negligent directors); *Graham v. Allis-Chalmers Mfg. Co.*, 188 A.2d 125 (Del. Ch. 1963) (limiting board liability for failing to discover employee misconduct to a negligence standard of reasonableness and good faith); 2 MODEL BUS. CORP. ACT ANN. §§ 8.30(a)-(b) (3d ed. Supp. 1998/99).

rule,¹³⁶ a presumption that directors act in a reasonably informed fashion when making business decisions.¹³⁷ However, it is difficult to prove that the business decisions were not made in good faith, as opposed to simply being inconsistent with how a reasonable person would act under similar circumstances, or simply not made in the best interest of the corporation. The suitability of a judicial review is often unclear when it is alleged that directors breached a duty that did not involve disloyalty. No duty is breached merely because a director made business determinations that did not end up benefiting the corporation, even if at the time the determinations were made most observers believed they were bad. Moreover, pursuant to the business judgment rule, substantive review of decisions is not allowed because decisions made appeared “dumb”¹³⁸ or “irrational”¹³⁹ in retrospect. Similarly, courts will not hold fiduciaries liable for “a failure to comply with the aspirational ideal of best practices. . . .”¹⁴⁰ Indeed, the business judgment rule arises from a belief that “investors’ wealth would be lower if managers’ decisions were routinely subjected to strict judicial review.”¹⁴¹

136. See, Stephen M. Bainbridge, *The Business Judgment Rule as Abstention Doctrine*, 57 VAND. L. REV. 83, 128 (2004); accord, Lyman Johnson, *The Modest Business Judgment Rule*, 55 BUS. LAW. 625, 631 (2000) (scholars debate whether it a “rule,” or a “standard” with no “bright-line” separating acceptable from unacceptable conduct).

137. Although the law is not clear on whether the business judgment rule applies to decisions made during insolvency, several courts have specifically declined to apply it. See, e.g., *Mims v. Kennedy Capital Mgmt., Inc. (In re Performance Nutrition, Inc.)*, 239 B.R. 93, 111 (Bankr. N.D. Tex. 1999) (“[T]he business judgment rule may be wholly inapplicable in a case where the corporation is insolvent.”); *Unsecured Creditors Comm. v. Gen. Homes Corp. (In re Gen. Homes Corp.)*, 199 B.R. 148, 151–52 (Bankr. S.D. Tex. 1996) (“[W]hile the business judgment rule may apply to the decisions of solvent corporations, it has no consequence in the context of a conservatorship.”); see also *Toy King Distribs., Inc. v. Liberty Sav. Bank (In re Toy King Distribs., Inc.)*, 256 B.R. 1 (Bankr. M.D. Fla. 2000) (applying the rule in favor of creditors).

138. Edward B. Rock & Michael L. Wachter, *Islands of Conscious Power: Law, Norms, and the Self-Governing Corporation*, 149 U. PA. L. REV. 1619, 1672 (2001) (arguing that courts correctly stay out of “typical business decisions” even when the decisions are “probably pretty dumb”).

139. *In re Caremark Int’l Inc. Derivative Litig.*, 698 A.2d 959, 967 (Del. Ch. 1996) (“[W]hether a judge or jury . . . believes a decision substantively wrong, or degrees of wrong extending through ‘stupid’ to ‘egregious’ or ‘irrational,’ provides no grounds for director liability, so long as the court determines the process employed was either rational or employed in a good faith effort to advance corporate interests.”).

140. *In re The Walt Disney Co.*, 907 A.2d 693, 697 (Del. Ch. 2005).

141. FRANK H. EASTERBROOK & DANIEL R. FISCHER, *THE ECONOMIC STRUCTURE OF CORPORATE LAW* 93 (1991); see also, *In re Caremark*, 698 A.2d at 967 (holding that not adopting the business rule “would expose directors to substantive second guessing by ill-equipped judges or juries, which would, in the long-run, be injurious to investor interests.”); E. Norman Veasey & Christine T. Di Guglielmo, *What Happened in Delaware Corporate Law and Governance from 1992-2004? A Retrospective on Some Key Developments*, 153 U. PA. L. REV. 1399, 1413 (2005) (“Delaware’s emphasis on responsible corporate

Following the 2008 financial crisis for which risk management was partially blamed,¹⁴² attention shifted to boards and their duty to monitor.¹⁴³ This duty to monitor, which has roots in Delaware case law,¹⁴⁴ has been used in arguments for preserving directors' accountability for risk management oversight. For example, in a 2009 lawsuit, plaintiffs argued that Citigroup directors breached their fiduciary duties by failing to diligently monitor the business' risks or make a good faith effort to follow procedures in order to be fully informed regarding the financial institution's risk exposure.¹⁴⁵ The *Citigroup* court dismissed the suit, holding that the allegations regarding bad business decisions should be evaluated under a different standard of liability, not that of the failure to monitor.¹⁴⁶ Invoking the business judgment rule, the court also held that the directors did not intentionally disregard their responsibility.¹⁴⁷ This Delaware legal approach weakened accountability for failed risk management oversight.¹⁴⁸ However, suggesting that the Delaware courts are making a mistake every time they decline to rule in plaintiffs' favor is

governance . . . is intended to promote good decision making by directors, thereby obviating the specter of judicial second-guessing.”).

142. See, e.g., *The Financial Crisis and the Role of Federal Regulators: Hearing Before the H. Comm. on Oversight and Gov't Reform*, 110th Cong. 3-4 (2008) (testimony of Alan Greenspan, former Chairman, Bd. of Governors of the Fed. Reserve Sys.); *Financial Regulation: Review of Regulators' Oversight of Risk Management Systems at a Limited Number of Large, Complex Financial Institutions: Hearing Before Subcomm. on Sec., Ins., and Inv., S. Comm. on Banking, Hous., and Urban Affairs*, 111th Cong. 20-22, 24 (2009) (testimony of Orice M. Williams, Dir., Fin. Mkts. and Cmty. Inv., U.S. Gov't Accountability Office); Fanto, *supra* note 61, at 742.

143. Eric J. Pan, *A Board's Duty to Monitor*, 54 N.Y.L. SCH. L. REV. 717, 721 (2010). References were also made to *Graham v. Allis-Chalmers Mfg. Co.*, 188 A.2d 125 (Del. Ch. 1963), which is an earlier Delaware case where the board's obligation to monitor activities and corporate violations was recognized.

144. *In re Caremark*, 698 A.2d at 967 (Del. Ch. 1996) (introducing Delaware's duty to monitor doctrine).

145. *In re Citigroup S'holder Derivative Litig.*, 964 A.2d 106, 114 (Del. Ch. 2009) (pursuant to the suit, the risks that were not properly monitored and even ignored—despite the existence of noticeable “red flags,” related to the subprime mortgage market—almost resulted in the insolvency of Citigroup). See generally Robert T. Miller, *The Board's Duty to Monitor Risk After Citigroup*, 12 U. PA. J. BUS. L. 1153 (2010).

146. See *In re Caremark*, 698 A.2d at 970 (holding that plaintiffs might assert two types of claims regarding directors' violation of their fiduciary duties to monitor the business' operations: First, that the directors made a grossly negligent decision that resulted in losses, which might be not ideal, but nonetheless decisions that fall under the business judgment rule's standards; second, that the directors acted in bad faith by failing to establish a proper monitoring system); see also *In re Citigroup*, 964 A.2d at 123–28 (characterizing the plaintiffs' claims under the first category of the *Caremark* case claims).

147. *Id.*

148. See *Johnson*, *supra* note 45, at 92.

not wise either. It is not clear that adopting a more aggressive oversight approach would always mean better oversight on fiduciary duty issues. Therefore, the one firm conclusion that *Citigroup* illustrates is that the Delaware courts are not well-positioned to police fiduciary duty risk management-related issues.¹⁴⁹

Further emphasizing the duties and responsibilities for risk management are stock exchange listing requirements addressing risk, specifically the New York Stock Exchange's listing requirements adopted in 2002.¹⁵⁰ Pursuant to the requirements, the audit committees of listed corporate entities have to assume specific responsibility for oversight of their corporation's risk management tactics and procedures.¹⁵¹ This requirement attempted to persuade boards to take a more active role in risk supervision from a compliance perspective.¹⁵² Nevertheless, it is evident from the 2008 crisis that boards must be more committed to guarantee their corporation's risk management procedures are aligned with their approved strategies and goals and that management has in place the processes needed to govern those risks.

The third source providing requirements for those responsible for risk management is the Sarbanes-Oxley Act, which mandates that corporations and boards must comply with certain legal requirements.¹⁵³ Such requirements include the maintenance of financial and disclosure controls and the certification of periodical financial statements involving risk

149. See ERIC J. PAN, THE CONFERENCE BOARD, THE DUTY TO MONITOR UNDER DELAWARE LAW: FROM CAREMARK TO CITIGROUP 13 (2010) available at <http://www.conference-board.org/retrievefile.cfm?filename=DN-004-10.pdf&ty pe=subsite> ("Delaware courts have refrained from holding corporate directors responsible for harmful outcomes that do not involve wrongful or illegal acts. By doing so, however, Delaware courts might have encouraged boards to be either ignorant or unquestioning of excessive risk taking by officers. The absence of adequate board oversight is partially to blame for the catastrophic losses suffered by Bear Stearns, Lehman Brothers, AIG, and Citigroup.").

150. New York Stock Exchange, Final NYSE Corporate Governance Rules § 303A.07(c)(iii)(D) (New York: NYSE Euronext, 2009), available at <http://www.nyse.com/pdfs/finalcorpgovrules.pdf> (outlining the audit committee's responsibility for risk).

151. *Id.*

152. See MARK S. BEASLEY, BOARD AND AUDIT COMMITTEE INVOLVEMENT IN RISK MANAGEMENT OVERSIGHT, AM. INST. FOR CPAS, (2010), available at <http://www.aicpa.org/ForThePublic/AuditCommitteeEffectiveness/AuditCommitteeBrief/DownloadableDocuments/board%20and%20audit%20com%20role%20in%20risk%20oversight.pdf> ("External drivers are encouraging boards to oversee management's ERM practices by assigning explicit responsibilities to audit committees for risk oversight . . . the NYSE rules call for the audit committee to discuss guidelines and policies to govern the process by which this is accomplished and to discuss the entity's major financial risk exposures.").

153. Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745 (codified as amended in scattered sections of 15 U.S.C.).

management.¹⁵⁴

Given the potential dire consequences of failed risk management oversight for the economy, it is clear that additional sources of legal authority emphasizing the duties and responsibilities of those responsible for risk management should be adopted. Such sources of legal authority should also enable substantive second-guessing of business decisions regarding excessive risk-taking by large financial institutions.¹⁵⁵ Risk should be avoided at all cost when a significant financial institution is already in financial distress, or in the zone of insolvency, as it is possible that its actions run contrary to the business judgment rule.¹⁵⁶ Further, it has been held that taking risky actions when a financial institution is already in financial distress, or in the zone of insolvency, should be viewed as something done in bad faith.¹⁵⁷ Thus, such actions could potentially be considered a violation of directors' fiduciary duties.¹⁵⁸ Moreover, it should be considered whether mandating risk monitoring at financial institutions should be a part of the directors' fiduciary duties, similar to the rationale in *Caremark*.¹⁵⁹ In addition, such arguments can also be supported by the "discretionary" approach, which states that when an institution is in the zone of insolvency, its directors are entitled to consider business approaches that are less risky than what a shareholder seeking to maximize share value would consider optimal.¹⁶⁰ Further, as mentioned above, it is well established that once an enterprise is in a state of insolvency, the fiduciary duties to the enterprise's creditors exist under the Bankruptcy

154. See, e.g., Section 404 of the Sarbanes-Oxley Act of 2002 (mandating that subjected corporations must include in their annual reports a report of management on the corporation's internal control over financial reporting); Section 302 (mandating that certain senior executives of publicly traded corporations certify the appropriateness of their corporations' financial statements and disclosures and certify that they fairly present, in all material respects, the operations and financial condition of the corporation); Section 906 (requiring certain senior executives to certify that the periodic report containing financial statements fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934).

155. See Branson, *supra* note 37, at 636–39 (discussing corporate institutions' social responsibilities).

156. See *Smith v. Van Gorkom*, 488 A.2d 858, 872–74 (Del. 1985), *overruled in part by Gantler v. Stephens*, 965 A.2d 695, 712–14 (Del. 2009).

157. See generally *Brehm v. Eisner* (In re The Walt Disney Co. Derivative Litig.), 906 A.2d 27 (Del. 2006) (holding that taking such risks is a breach of fiduciary duties).

158. *Id.*

159. See *In re Caremark Int'l Inc. Derivative Litig.*, 698 A.2d 959, 970 (Del. Ch. 1996) (holding that a board of directors has a duty to make sure that suitable "information and reporting systems" are in place, and to make "timely, accurate information" available to the board and top management in order for the board to do its work).

160. See *Kandestin*, *supra* note 127, at 1239.

Code and state law.¹⁶¹

Nevertheless, some scholars have argued that efforts to hold directors accountable for risk management failures would threaten to morph into holding directors liable for bad business outcomes in general.¹⁶² Adding to this is the fact that state courts, as *Citigroup* demonstrates, are not currently well-positioned to police such issues. Therefore, the judicial interpretation and view of the standards for second-guessing of business decisions concerning risk-taking remained unchanged. While the Dodd-Frank Act represents a substantial financial regulatory reform, it does not properly regulate risk management. The Dodd-Frank Act does not include any additional sources of legal authority emphasizing the duties and responsibilities of those managing risk. Instead, the Dodd-Frank Act's provisions focus on enhancing risk oversight at financial institutions and are too weak and inadequate to properly advance stability in the financial market.¹⁶³

III. COUNTERBALANCING BEHAVIORAL EFFECTS WITH THE GOAL OF REDUCING EXCESSIVE RISK-TAKING

While economic incentives are efficient in convincing individuals to choose between options in a way they would not have otherwise, the use of behavioral effects, including social/group influences and psychological/cognitive biases, is a different way of incentivizing corporate risk managers and directors. Unfortunately, behavioral effects are hard to measure or analyze thoroughly. Moreover, recent studies in behavioral economics indicate that individuals fail to process risk in the way the black-letter definitions of risk suppose, and call into question the degree to which decisions can simply be categorized as “conscious” or “unconscious.”¹⁶⁴ This might be the reason why the impact of social influences and psychological biases on financial decision making has only

161. See Kandestin, *supra* note 127, at 1238 (“[I]t is at least clear that upon insolvency in fact, a duty is owed to creditors.”); see also *N. Am. Catholic Educ. Programming Found., Inc. v. Gheewalla*, 930 A.2d 92, 101–03 (Del. 2007); *Prod. Res. Grp., LLC v. NCT Grp., Inc.*, 863 A.2d 772, 794 n.67 (Del. Ch. 2004) (creditors of an insolvent enterprise are owed fiduciary duties and can bring derivative actions for breach).

162. See generally Bainbridge, *supra* note 115 (for arguments that directors should not be held liable for risk management failures).

163. See generally Johnson, *supra* note 45 (calling for reforms addressing cognitive bias and structural limitations inherent to group decision making, and thus to boards of directors).

164. See generally Rapp, *supra* note 57 (arguing that recklessness as it is defined in tort law is inconsistent with people's actual behavior and thought processes when facing risk and uncertainty).

recently begun to draw significant scholarly attention.

Behavioral economics is a relatively new and interrelated discipline. The field of behavioral economics was developed as a result of a great deal of experimental research done in behavioral psychology that focused on how individuals actually behave.¹⁶⁵ A key notion in behavioral economics is that people do not necessarily conduct themselves based on the rational risk-averse utility-maximizer¹⁶⁶ predicted by conventional neoclassical economics¹⁶⁷ or pursuant to traditional law and economics theories.¹⁶⁸ Accordingly, some deviations from the rational utility-maximizer model are predictable, and not just a random error, but the result of systematic biases.

Behavioral economics, and perhaps neuroeconomics in the future,¹⁶⁹

165. See Colin F. Camerer & George Loewenstein, *Behavioral Economics: Past, Present & Future*, in *ADVANCES IN BEHAVIORAL ECONOMICS* 3 (Colin F. Camerer et al., eds., 2004) (discussing generally the approach and methods of behavioral economics).

166. See Jon Hanson & David Yosifon, *The Situation: An Introduction to the Situational Character, Critical Realism, Power Economics, and Deep Capture*, 152 U. PA. L. REV. 129, 154 (2003) (noting that the rational actor model is criticized for failing to take into account human irrationality).

167. See John B. Davis, *Behavioral Economics, Neuroeconomics, and Identity*, in *ECONOMICS AND THE MIND* 58 (Barbara Montero & Mark D. White eds., 2007) (discussing how behavioral economics and neuroeconomics more accurately explain the choices and behaviors of the individual actor than neoclassical economic theory).

168. Rapp, *supra* note 57, at 153. See generally Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, (1998) (discussing how assumptions about human behavior employed by neoclassical economics could be improved by empirical insights).

169. Neuroeconomics, which is a related but much younger discipline, is founded on recent research in the understanding of the cognitive processes at work in human thought and mainly deals with choice as the result of brain activity. See generally Davis, *supra* note 167; Peter Coy, *Why Logic Often Takes a Backseat*, *BUSINESS WEEK*, Mar. 27, 2005, <http://www.businessweek.com/stories/2005-03-27/why-logic-often-takes-a-backseat> (discussing the areas of the brain that become active in certain decision making). Neuroeconomics is “the study of how the embodied brain interacts with its external environment to produce economic behavior.” Terrence Chorvat et al., *Law and Neuroeconomics*, 13 SUP. CT. ECON. REV. 35, 44 (2005) (footnote omitted) (economics, in this context, deals with budget constraints and not necessarily with money). Accordingly, this scientific discipline uses modern developments in brain imaging technology to examine methodically how brain function prompts specific behaviors. See Kevin McCabe et al., *Lessons from Neuroeconomics for the Law*, in *THE LAW AND ECONOMICS OF IRRATIONAL BEHAVIOR* 68 (Francesco Parisi & Vernon Smith eds., 2005) (advocating incorporating neuroeconomic findings into the study of law). This discipline helps to advance behavioral economics in that it provides a neurobiological reasoning for some of the departures from rational action observed in experiments conducted by behavioral economists. See Erin Ann O’Hara, *How Neuroscience Might Advance the Law*, in *LAW AND THE BRAIN* 21, 25 (Semir Zeki & Oliver R. Goodenough eds., 2004) (examining the ways that neuroscience can improve legal processes).

can greatly contribute to law development. Indeed, law generally should be written and applied to account for the manner in which humans make decisions. While that may not have been possible to do in the past, recent developments in behavioral economics shed new light on how humans make decisions. For example, we now know that behavioralism's insights into human decision-making call into question the degree to which humans are intentionally able to disregard known risks¹⁷⁰ and undermine the validity of the concept of "known risk."¹⁷¹

Behavioral law and economics takes the psychology-based insights from behavioral economics and incorporates them into legal frameworks. The policy implications of behavioral law and economics were popularized by Richard Thaler and Cass Sunstein,¹⁷² who argued that such studies could and should be incorporated into the cognitive foundations of corporate governance law.

Nevertheless, despite the field's popularity, some commentators have great concerns about the challenges of basing policy recommendations on evidence of bounded rationality.¹⁷³ Accordingly, scholars have expressed concerns that (i) important gaps remain in our understanding of how and why people make choices;¹⁷⁴ (ii) behavioral law and economics neglect individual and situational differences in rationality and fail to recognize that not all individuals are the same, which makes it difficult to predict behavior;¹⁷⁵ and (iii) corporate governance should be flexible enough to

170. See Gregory Mitchell, *Taking Behavioralism Too Seriously? The Unwarranted Pessimism of the New Behavioral Analysis of Law*, 43 WM. & MARY L. REV. 1907 (2002) (criticizing the application of behavioral psychology to law).

171. See Martin A. Kotler, *Utility, Autonomy and Motive: A Descriptive Model of the Development of Tort Doctrine*, 58 U. CIN. L. REV. 1231, 1267 (1990) (stating that the "known risk" concept applies more to torts and criminal law scholarship).

172. See Richard H. Thaler & Cass R. Sunstein, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 4-6 (2008) (making a case for "libertarian paternalism," the practice of making strategic determination of default options to "nudge" individuals into making better choices in the face of their cognitive defects).

173. For more on bounded rationality see Bryan D. Jones, *Bounded Rationality*, 2 ANNUAL REVIEW OF POLITICAL SCI., 297 (1999) (explaining that bounded rationality claims that decision-makers are rational, meaning they are goal-oriented and adaptive, but noting that they sometimes fail, even in important decisions, because of human cognitive and emotional architecture).

174. See Troy A. Paredes, *Too Much Pay, Too Much Deference: Behavioral Corporate Finance, CEOs, and Corporate Governance*, 32 FLA. ST. U. L. REV. 673, 738-39 (2005) (discussing the management overconfidence in corporate governance).

175. See generally Russell B. Korobkin, *The Problems with Heuristics for Law* (UCLA Sch. of Law, Law & Econ. Research Paper No. 4-1, 2004), available at <http://ssrn.com/abstract=496462> (discussing how heuristic-based reasoning poses policy challenges for legal scholars). See also William N. Eskridge, Jr. & John Ferejohn, *Structuring Lawmaking to Reduce Cognitive Bias: A Critical View*, 87 CORNELL L. REV. 616, 627-29 (2002) (analyzing

accommodate different personalities, and thus, no single regulatory response is optimal for managing overconfidence.¹⁷⁶

But even with the criticism voiced against it, behavioral law and economics is still considered a growing, useful, and popular source of scholarship, and it is widely believed that it can and should supplement substantive economic tools.¹⁷⁷ More specifically, given the significant impact that social and psychological biases have, and since many of these biases are remediable with proper regulation, behavioral law can help counterbalance the negative biases' effects in the context of risk-taking. Accordingly, rather than continue to struggle with dictating formulas and strict definitions regarding risk calculations to the financial industry, regulators should focus some of their efforts on creating guidelines that will help enhance risk committees' decision-making processes and reduce the impact of undesirable biases on unwanted or excessive risk taking. In an attempt to shed light on what these biases can be in the context of risk taking at financial institutions and how to counterbalance them, this Article offers such guidelines focused on risk committees' composition, obligations, and working procedures.

"The Context Problem" in applying cognitive psychology research to public institutions); Robert A. Hillman, *The Limits of Behavioral Decision Theory in Legal Analysis: The Case of Liquidated Damages*, 85 CORNELL L. REV. 717, 731 (2000) ("Not only can disparate contexts lead to different cognitions, but each party to a particular transaction may have different motivations, experiences, practices, and goals. Certainly, each party's outlook can influence the way that party receives and processes information.") (footnote omitted); Mitchell, *supra* note 170 (arguing that people are more rational than behavioralism might suggest); Gregory Mitchell, *Why Law and Economics' Perfect Rationality Should Not Be Traded for Behavioral Law and Economics' Equal Incompetence*, 91 GEO. L.J. 67 (2002) (arguing that people are not equally irrational and so a singular regulatory response to address their behavior might be imprudent); Robert E. Scott, *The Limits of Behavioral Theories of Law and Social Norms*, 86 VA. L. REV. 1603, 1643-44 (2000) (expressing concern about behavioral law and economics' neglect of the contextual determinants of behavior); Daniel A. Farber, *Toward a New Legal Realism*, 68 U CHI. L. REV. 279, 299 (2001) (reviewing BEHAVIORAL LAW AND ECONOMICS (Cass Sunstein ed., 2000)) ("The tendency to focus on one or two cognitive processes at the expense of institutional context seems to be widespread among the behavioralists."); Jennifer Arlen, Comment, *The Future of Behavioral Economic Analysis of Law*, 51 VAND. L. REV. 1765, 1768-69 (1998) ("First, a number of the observed biases appear under certain circumstances, but not in others. It is difficult to predict how, when, or whether many of these biases will manifest themselves in the real world because scholars do not yet fully understand why many of them exist—they are empirical results awaiting a full theoretical explanation.").

176. See Paredes, *supra* note 174, at 739 (arguing that managers' varied individual traits require flexible corporate governance regimes).

177. See generally Loewenstein & Ubel, *supra* note 8, at A31 (arguing that policymakers are applying behavioral economics to address issues it was not intended to resolve).

A. Risk Committees' Composition

1. Diversity

A risk committee composed of heterogeneous individuals can help counterbalance undesired behavioral effects on risk-taking, which include cognitive-related biases as well as group-related biases. Specific cultural dissimilarities can explain why individuals with comparable training, similar professional experience, and the same exposure to relevant information on the matters before them, can reach distinctive judgments.¹⁷⁸ Moreover, homogenous groups tend to be at ease around each other, which might be preferable as far as group comfort is concerned, but is less preferable in terms of exploring sophisticated solutions to problems. Accordingly, the best teams are often composed of people with diverse perspectives and unique opinions.¹⁷⁹

If a team only includes members from one end of a spectrum, many possible solutions to existing problems may not even be considered.¹⁸⁰ Thus, parties assembling risk committees should make efforts to recruit a diversified pool of suitable and talented individuals. Similarly, adopting a practice of having company-wide risk committees in the financial-services industry can greatly improve efficiency. Although the finance department will take the lead, “including the businesses as well as the key support groups on a level playing field to identify risks and make decisions helps create more ‘risk-spotters’ across the organization.”¹⁸¹

a) Gender And Risk-Taking

More specifically, companies could attempt to balance the number of men and women on risk committees.¹⁸² To date, despite recent efforts to

178. Robert A. Olsen & Constance M. Cox, *The Influence of Gender on the Perception and Response to Investment Risk: The Case of Professional Investors*, 2 J. PSYCHOL. & FIN. MARKETS 29 (2001).

179. See e.g. Richard Florida, *CITIES AND THE CREATIVE CLASS* (2005) (arguing that diverse cities are more innovative and have a better quality of life).

180. Stuart, *supra* note 63.

181. Stuart, *supra* note 63 (quoting Hank Prybylski, a risk management expert at Ernst & Young).

182. See generally John Coates, *THE HOUR BETWEEN DOG AND WOLF: RISK TAKING, GUT FEELINGS AND THE BIOLOGY OF BOOM AND BUST* (2012) (stating that currently women only make up at most five percent of the traders in the financial world and arguing that this is not because women are less talented at trading). In fact, Coates cites to a result “announced in 2009 by Chicago-based Hedge Fund Research, which found that over the previous nine years hedge funds run by women had significantly outperformed those run by men.” *Id.* at 272. Finally, Coates identifies a feedback loop between testosterone and

increase the number of women on corporate boards for equality reasons,¹⁸³ gender equality does not exist.¹⁸⁴ Further, as detailed below, behavioral economics studies have demonstrated that female professional investors might be less risk-seeking and less ruthless in their business strategies, which are traits that can be more positively viewed in the context of SIFIs'

success that dramatically lowers the fear of risk in men, and recommends altering "the biology of the market by increasing the number of women and older men in it." *Id.* at 275.

183. This inequality is not new and the phenomenon's dimensions are difficult to ignore. Among the Fortune 1000, there are 139 boards that have no women directors; and women comprise less than fifteen percent of all directors. See CTPARTNERS, WOMEN ON BOARDS: REVIEW & OUTLOOK, available at http://www.ctnet.com/uploadedFiles/Women-On-Boards_2012.pdf (examining the paucity of women in the business world and suggesting solutions). Accordingly, pursuant to section 342 of the Dodd-Frank Act, the Board of Governors of the Federal Reserve System established its Office of Diversity and Inclusion (ODI). The ODI's mission includes the responsibilities identified in section 342 for the Office of Minority and Women Inclusion, as well as Equal Employment Opportunity compliance and programs addressing diversity and inclusion. But the United States is not alone in trying to solve this inequality problem. France, at the beginning of 2011, adopted quotas requiring that women hold twenty percent of board positions by 2014, and forty percent by 2017. James Kanter, *Europe to Study Quotas for Women on Boards*, N.Y. TIMES, Mar. 4, 2012, at B3. Other EU countries have similar rules as well with legally binding quotas to place women in top business positions. In Italy, for example, it is required that one-third of a corporation's board be women by 2015 or the business will face severe fines that can reach up to €1 million, in addition to the nullification of board elections. *Id.* The Netherlands and Spain adopted legal recommendations to increase women's representation on boards, but no actual sanctions for laggards, and similar legislation to that adopted in France is under way in Belgium. *Id.* Following these countries' efforts and reports that self-regulation to improve the European Union's record on placing women in top management has failed, the European Union also considered mandating certain quotas for women in boardrooms. *Id.* It appears that such a reform might be needed, as pursuant to a report done by the European Union, as of January 2012, only 3.2% of the presidents and chairmen of large corporations in the European union were women, and women occupied only 13.7% of the seats on the boards of large corporations. See Press Release, Europa, *Women in Decision-Making* (Mar. 9, 2012) available at <http://europa.eu/rapid/pressReleasesAction.do?reference=ETW/12/0309>

&format=HTML&aged=0&language=EN&guiLanguage=en (calling for public consultation to identify measures for increasing the proportion of women in senior positions).

184. While ninety-seven percent of boards in America have at least one woman on their board of directors, women still make up only sixteen percent of the total number of directors, and the average number of women on boards is two. See *The Korn/Ferry Market Cap 100: Board Leadership at America's Most Valuable Public Companies*, THE KORN/FERRY INSTITUTE 31 (2010), available at http://www.kornferryinstitute.com/sites/all/files/documents/briefings-magazine-download/The%20Korn_Ferry%20Market%20Cap%20100-%20Board%20leadership%20at%20America%E2%80%99s%20most%20valuable%20public%20companies%20_0.pdf (compiling the top U.S. public companies by market capitalization). Even worse, "in 2003, women of color accounted for only 3% of the total available board seats at Fortune 500 companies." Lisa M. Fairfax, *Some Reflections on the Diversity of Corporate Boards: Women, People of Color, and the Unique Issues Associated with Women of Color*, 79 ST. JOHN'S L. REV. 1105, 1115 (2005).

management in the post-crisis era. Statistically speaking, women perceive risk differently than men, and react accordingly.¹⁸⁵ Female investors emphasize risk factors considerably more than their male colleagues, and have a tendency to focus on decreasing risk more than their male peers.¹⁸⁶ These gender differences were proven to be even more significant in studies that focused on financial assets and portfolios at risk extremes.¹⁸⁷ Moreover, with regard to possessing socially responsible market behavior, studies revealed that socially responsible investors are more likely to be female and tend to be well-educated.¹⁸⁸ These factors, therefore, should be taken under consideration when setting criteria for risk committees' compositions.

b) Maximizing Social Outcomes Alongside Profits

Risk management in financial institutions requires making decisions regarding desired levels of risk-taking and profit-maximization. Following the financial crisis of 2008, risk-related decision-makers in financial institutions were criticized for not fully integrating social facets into their economic models, as society as a whole was asked to bail out financial institutions.¹⁸⁹ Financial institutions, including JPMorgan, have received more special benefits from the government than any other large corporations and, thus, these entities owe an increased responsibility to society.¹⁹⁰ Indeed, large financial institutions greatly profited from public subsidies, which distorted the financial institutions' economic incentives

185. John E. Grable & So-hyun Joo, *A Cross-Disciplinary Examination of Financial Risk Tolerance*, 46 CONSUMER INT. ANN. 151, 155 (2000) (finding that gender was the only important explanatory demographic variable of risk tolerance).

186. *Id.*

187. *Id.*

188. See Russell Sparkes, *SOCIALLY RESPONSIBLE INVESTMENT: A GLOBAL REVOLUTION* (2002) (discussing the ethics of investing); Barry N. Rosen et al., *Social Issues and Socially Responsible Investment Behavior: A Preliminary Empirical Investigation*, 25 J. CONSUMER AFF. 221, 229 (1991) (noting that socially responsible investors tend to be younger and better educated).

189. See Joel Achenbach, *A Sense of Resentment Amid the 'For Sale' Signs*, WASHINGTON POST, Sept. 22, 2008 (discussing the reaction to the bailout of one town, which is replete with home foreclosures); Jonathan Weber, *The Wall Street Bailout: What About Main Street?*, NEWWEST.NET, Sept. 23, 2008 (addressing concerns about the "unfairness inherent in the rescue plan"), http://www.newwest.net/topic/article/what_does_the_wall_st_bailout_mean_for_you/C35/L35/.

190. See, e.g., Greenfield, *supra* note 41, at 962–63 (arguing that corporations "are state creations, and no state in its right mind would willfully allow for the creation of institutions as powerful as corporations unless there was a belief that, on balance, society would be better off because of their existence").

and further pushed them toward excessive risk-taking.¹⁹¹ As a result, regulators mandated that risk committee members of financial institutions would not make financial decisions that would expose their institutions—and, more importantly, the economy—to excessive risks.¹⁹²

Financial institutions' duties and responsibilities to society should not end with a mere attempt to avoid excessive risk taking. Indeed, in the last several decades, global corporate conduct manifested heightened levels of responsibility with regard to society. For example, many corporations contributed to a wide range of social causes and needs, beyond merely satisfying shareholder obligations or customer demands.¹⁹³ Similarly, reinforcing corporate social responsibility in financial investments has gained unprecedented momentum and is now embedded in many corporations' codes of conduct.¹⁹⁴ Indeed, President Obama said in his inauguration speech that now is the "Age of Responsibility."¹⁹⁵ Similarly, many commentators have argued not only that investors should develop social responsibility, but also that financial institutions should hone their

191. See generally Arthur E. Wilmarth, Jr., *Reforming Financial Regulation to Address the Too-Big-To-Fail Problem*, 35 BROOK. J. INT'L L. 707, 713 (2010) (discussing the federal government's assurances that it would provide necessary capital infusions to banks before regulators' stress tests).

192. As mentioned, the Dodd-Frank Act requires that SIFIs prepare reorganization and liquidation plans, and submit them for review by the regulators. These living wills also mandate that each SIFI internally manage and better monitor its financial risks, and report periodically on its credit exposure to other SIFIs, and on the other SIFIs' exposure to it, in order to avoid exposing the financial system to excessive risks. See generally Packin, *supra* note 16 (analyzing the operation of living wills and their shortcomings).

193. See generally LOUIS DETHOMASIS & NEAL ST. ANTHONY, *DOING RIGHT IN A SHRINKING WORLD: HOW CORPORATE AMERICA CAN BALANCE ETHICS AND PROFIT IN A CHANGING ECONOMY* (2006) (discussing corporate ethics as a realistic tool for increasing profit); DONALD F. KETTL, *THE GLOBAL PUBLIC MANAGEMENT REVOLUTION* (2d ed. 2005) (discussing basic models of governmental reform worldwide); SRIYAN DE SILVA & E.F.G. AMERASINGHE, *CORPORATE SOCIAL RESPONSIBILITY: ISSUES, PROBLEMS AND CHALLENGES* (2004) (analyzing both the practical and theoretical aspects of corporate social responsibility).

194. See WILLIAM B. WERTHER, JR. & DAVID CHANDLER, *STRATEGIC CORPORATE SOCIAL RESPONSIBILITY: STAKEHOLDERS IN A GLOBAL ENVIRONMENT* 63–83 (2006) (addressing implementation of corporate social responsibility in a firm's strategy and culture). Similarly, today corporate social responsibility oversight by stakeholders advocating for corporate social conduct can also be found. See Forest L. Reinhardt et al., *Corporate Social Responsibility Through an Economic Lens*, 2 REVIEW OF ENVTL. ECON. & POLICY 219 (2008), available at <http://www.nber.org/papers/w13989> ("Business leaders, government officials, and academics are focusing more and more attention on the concept of 'corporate social responsibility' (CSR).").

195. See Roger Cohen, *The Age of Responsibility*, N.Y. TIMES, Jan. 21, 2009, <http://www.nytimes.com/2009/01/22/opinion/22cohen.html> (discussing the inauguration speech on January 21, 2009, in which the President called for a new spirit of responsibility that serves the greater goals of society).

interest to align financial profit maximization tactics with social concerns.¹⁹⁶

Despite the awareness of the need to consider social responsibility when making financial investment and risk-related decisions, studies have shown that individuals with varied backgrounds differently prioritize factors such as profit maximization and social responsibility when making financial decisions. In an experiment done by Professor Rubinstein in 2005, 764 students of philosophy, business administration, mathematics, law, and economics, were asked to make financial determinations regarding the management of a hypothetical company.¹⁹⁷ More specifically, the students were told that calculations indicated that company layoffs would help increase their hypothetical company's profits, and accordingly asked to decide exactly how many employees to fire. They were offered the following options: (i) fire ninety-six employees and gain up to \$2,000,000 annually; (ii) fire fifty-two employees and gain \$1,600,000 annually; (iii) fire twenty-six employees and gain \$1,000,000 annually; or (iv) fire zero employees and keep a profit of \$400,000 annually. The economics students, more than any other group, chose to fully maximize the profits of their company at the expense of the company's employees, and forty-six percent of these students chose to do just that without any consideration of the employees.¹⁹⁸ In fact, they chose to do so despite the fact that the layoffs of the last forty-four employees led to a rise of only \$400,000 in profit. In stark contrast, only thirteen percent of the philosophy students and sixteen percent of the mathematics students chose to maximize the profits at all cost, while twenty-seven percent of the law students and thirty-three percent of the business students decided to maximize the profits in the same way.¹⁹⁹

196. Scholars have also challenged Milton Friedman's proclamation of profit maximization as the key purpose for business activities. See, e.g., Andrew Crane et al., *Stakeholder as Citizens? Rethinking Rights, Participation, and Democracy*, 53 J BUS. ETHICS 107 (2004) (analyzing the impact of corporate citizenship on ethical business arrangements); C.K. Prahalad & Allen Hammond, *Serving the World's Poor, Profitably*, 80 HARV. BUS. REV. 4 (Sept. 2002) (examining the ability of multinational corporations to stimulate development in developing regions); Ptaschunder, *supra* note 38 (arguing that after the 2008 Financial Crisis, the time was ripe for the idea of Socially Responsible Investment); JANE NELSON, LEADERSHIP, ACCOUNTABILITY, AND PARTNERSHIP: CRITICAL TRENDS AND ISSUES IN CORPORATE SOCIAL RESPONSIBILITY, THE KENNEDY SCH. OF GOV'T CORP. SOCIAL RESPONSIBILITY INITIATIVE (2004) (reporting that corporate social responsibility has implications beyond the entity itself and into the national and international spheres).

197. Ariel Rubinstein, *A Sceptic's Comment On The Study Of Economics*, 116 ECON. J. C1 (2006).

198. *Id.* at C3.

199. *Id.*

While Rubinstein's study results do not show that economics students necessarily were wrong, they do show that they were the most extreme, and the difference was significant. The different perspectives and priorities thus suggest that forcing diversity in the backgrounds and education of boards, and specifically in risk committees, can help counterbalance tendencies to make profit maximization the absolute and only relevant goal of financial institutions. Accordingly, in order to increase the likelihood that financial institutions' risk committees will also factor in social concerns when planning business strategies, it should be required that risk committees will include members from a variety of disciplines. If corporations follow such an approach, risk committees would even consider some of the Corporate Social Responsibility movement's concerns.

2. "The Only Source of Knowledge is Experience"—Albert Einstein

Experience is a valuable qualification. Committed practice, followed by constructive feedback, followed by more committed practice, is believed to be a recipe for success.²⁰⁰ In fact, an idea that has become very popular over the past few years is that it takes approximately 10,000 hours of deliberate practice to learn a subject area or skill well enough to actually master it.²⁰¹

While it is obvious that great achievements are possible without

200. Corie L. Rosen & Hillary Burgess, *More Than Merely Doing: Deliberate Practice, Feedback, and Academic Success*, (The Learning Curve), 2010, at 2 (arguing that experience is "the only way to truly become expert at anything").

201. The idea dates back to work done in the 1970s by Herb Simon, who studied human problem solving and was interested in the role of knowledge in expertise. Simon believed that to become an expert required about ten years of experience and estimated that expertise was the result of learning roughly 50,000 chunks of information. Cf. WILLIAM G. CHASE & HERBERT A. SIMON, *PERCEPTION IN CHESS* (1971) (demonstrating through perception and memory tasks that a chess player's ability to extract information from a brief exposure to positions on a chess board varies with the player's overall playing strength). This notion has been much further developed in the decades since, mainly by Anders Ericsson, who studied the cognitive structure of expert performance, and how experts obtain their superior skills by extended deliberate practice. See generally TOWARD A GENERAL THEORY OF EXPERTISE: PROSPECTS AND LIMITS (K. Anders Ericsson & Jacqui Smith eds., 1991). This practice makes perfect sense given the idea has recently been even further developed. See MALCOLM GLADWELL, *OUTLIERS: THE STORY OF SUCCESS* (2008) (arguing that more attention needs to be paid to successful people's upbringing, rather than what they are like); GEOFFREY COLVIN, *TALENT IS OVERRATED: WHAT REALLY SEPARATES WORLD-CLASS PERFORMERS FROM EVERYBODY ELSE* (2008) (arguing that innate ability is much less important than is traditionally thought). There are, of course, many provisos to the 10,000 hour rule, such as, the person practicing must constantly strive to get better.

putting in 10,000 hours of deliberate practice and that it would be a mistake to require 10,000 hours of practice as some kind of a proficiency requirement, experience is extremely important for professionals. Following up on this rationale, pursuant to the Dodd-Frank Act, risk committees must employ at least one risk management expert that has experience in managing risk at large, complex financial institutions.²⁰² Good judgment, however, almost always comes from experience, and experience usually comes from using bad judgment in past experiences.

Studies have revealed a substantial difference regarding risk attitudes between risk managers and non-risk business managers.²⁰³ The risk attitudes of all managers were very similar in judgments related to profit, but in potential loss-oriented situations the risk managers were considerably more risk-averse than the non-risk business managers.²⁰⁴ Experienced risk managers were much more cautious in their decisions than were non-risk managers.²⁰⁵

Relevantly, the risk committee of JPMorgan's board consisted of three directors with no significant banking or risk management experience during when the bank was hit by a trading loss of several billion dollars.²⁰⁶ Following the publication of this fact, JPMorgan announced that it would make changes to its risk-policy committee,²⁰⁷ which is responsible for "oversight of the CEO's and senior management's responsibilities to assess and manage the firm's credit risk, market rate risk, interest rate risk, investment risk, liquidity risk and reputational risk."²⁰⁸

Accordingly, appointing one experienced member to a risk committee, like the Dodd-Frank Act requires, may not be enough to make a difference in the committee's work and decision-making patterns. When dealing with highly sensitive and crucial decisions-making processes regarding potential

202. Dodd-Frank Act § 165(h)(3) (to be codified at 12 U.S.C. § 5364) ("A risk committee required by this subsection shall . . . include at least 1 risk management expert having experience in identifying, assessing, and managing risk exposures of large, complex firms.").

203. Gordon C.A. Dickson, *A Comparison of Attitudes Towards Risk Among Business Managers*, 54 J. OCCUPATIONAL PSYCH. 157 (1981) (discussing a study of differences in attitudes between risk managers and non-risk managers).

204. *Id.*

205. *Id.*

206. *JPMorgan board to shake up risk committee: WSJ*, REUTERS (May 25, 2012, 8:31 PM), <http://www.reuters.com/article/2012/05/26/us-jpmorgan-board-idUSBRE84P01320120526>.

207. Pursuant to reports, the bank is expected to add either Timothy Flynn or James Bell to the committee, as they both have backgrounds in risk and finance. Fitzpatrick, *supra* note 96.

208. Fitzpatrick, *supra* note 96 (quoting the bank's regulatory filings) (internal quotation marks omitted).

risks of financial institutions, it should be required that at least a substantial percentage of those serving as risk managers or as committee members have relevant experience.

3. Independent Directors on the Risk Committee

Pursuant to the Dodd-Frank Act, a separate risk committee, in which there will be at least a couple of independent directors, must be established to analyze risks that a financial institution is facing.²⁰⁹ However, creating such a separate risk committee without independent members might not be enough to ensure that the committee, as a collective body, will consider, with sufficient caution, all the relevant factors related risk tolerance and appetite, direction of risk exposure, methods of risk evaluation, emerging risks, and exposure of unconventional planning scenarios. Adding independent directors to boards, in order to improve effective monitoring is a traditional method used in American corporate law, which can be useful in enhancing monitoring.²¹⁰ Monitoring by independent directors primarily functions as a substitute for external regulation, because both the judiciary and legislative branches are cautious about becoming too involved in the business decisions of corporate management.²¹¹ But this monitoring function of the independent directors, in addition to their other duties, can also be viewed as a different aspect of an information-forcing-substance disclosure model that can help achieve improved corporate governance generally and, in this Article's context, more specifically, better risk-related

209. Dodd-Frank Act § 165(h). The § 165(h) requirement differs from one suggested in an earlier Senate bill that would have mandated that all listed public companies' boards, with certain exceptions, establish a separate risk committee made up of independent directors.

210. For general background on independent directors in the United States, see Jeffrey N. Gordon, *The Rise of Independent Directors in the United States, 1950-2005: Of Shareholder Value and Stock Market Prices*, 59 STAN. L. REV. 1465 (2007) (discussing the dramatic increase in the presence of independent directors on boards of large public companies, from approximately twenty percent independent in 1950 to seventy-five percent independent in 2005); see also Donald C. Clarke, *Three Concepts of the Independent Director*, 32 DEL. J. CORP. L. 73, 84 (2007) ("A major theme in corporate governance writing is the need for non-management directors on the board to serve as a check on management in the interests of shareholders. In other words, non-management directors are there to help shareholders solve the agency problem. If such directors are to monitor management effectively, they must be independent of management. From this contemplated role stems the typical definition of 'independent director': one who has no need or inclination to stay in the good graces of management, and who will be able to speak out, inside and outside the boardroom, in the face of management's misdeeds in order to protect the interests of shareholders.").

211. Clarke, *supra* note 210.

decision-making processes.²¹²

In the case of risk committees, it appears that it will be effective to appoint as members of risk committees several independent directors, who will function almost like public interest directors²¹³—a concept that surfaced during the corporate social responsibility era²¹⁴—as long as the independent directors are truly independent.²¹⁵ Functioning like public interest directors, such independent directors would represent the interests of the communities in which the financial institution, which they serve, conducts its main operations.²¹⁶ Following the 2008 financial crisis, this is especially important in the context of significant financial institutions, and the larger the financial institution, the more applicable this is. After all, one of the Dodd-Frank Act's main goals is to solve the “too-big-to-fail” problem,²¹⁷ a goal that has become a global priority in the last few years²¹⁸

212. Gordon, *supra* note 210, at 1563.

213. Compare NORTON E. LONG, *The Corporation, Its Satellites, and the Local Community*, in *THE CORPORATION IN MODERN SOCIETY* 202 (Edward S. Mason ed., 1960) (discussing public interest directors who will represent the communities in which the large corporation conducts business), with Detlev F. Vagts, *Reforming the “Modern” Corporation: Perspectives From the German*, 80 *HARV. L. REV.* 23, 50–53 (1966) (analysis of double-tiered boards in Germany). William O. Douglas argued for the use of professionals that would be hired on a full time basis as public interest directors. WILLIAM O. DOUGLAS, *DEMOCRACY AND FINANCE* 52–53 (1940).

214. The idea behind this was that federal law “would require major corporations to name to their boards a certain number (say, three) of directors from among a cadre of experienced public interest directors. When critics pointed out that managers, and perhaps fellow board members, would treat such directors as spies and antagonists, denying them access to information and use of other corporate resources, reformers tacked onto such proposals the requirement that corporations provide staff exclusively to serve the public interest directors.” See Douglas M. Branson, *Corporate Social Responsibility Redux*, 76 *TUL. L. REV.* 1207, 1213 (2002) (discussing proposals for public interest directors). Public interest director proposals received support from Arthur Goldberg, who argued that the inability of independent directors, let alone public interest directors, to obtain the support required makes it problematic for them to properly perform their jobs. “Independent directors needed plenary access to corporate information, professional assistance, and other legally mandated aids in order to accomplish what was expected of them.” *Id.*

215. Many corporate scholars share the opinion that existing definitions of independence may be too relaxed. See, e.g., Claire A. Hill & Brett H. McDonnell, *Disney, Good Faith, and Structural Bias*, 32 *J. CORP. L.* 833, 845–46 (2007) (assessing the *Disney* decision which dealt with executive compensation); Frederick Tung, *The Puzzle of Independent Directors: New Learning*, 91 *B.U. L. REV.* 1175 (2011) (assessing potential reasons why independent directors have not been more effective in improving corporate governance).

216. LONG, *supra* note 213.

217. “Too-big-to-fail” was first termed in 1984, concerning the federal bank’s intervention to prevent Continental Illinois National Bank from failing. See DAVID S. HOLLAND, *WHEN REGULATION WAS TOO SUCCESSFUL—THE SIXTH DECADE OF DEPOSIT INSURANCE: A HISTORY OF THE TROUBLES OF THE U.S. BANKING INDUSTRY IN THE 1980S AND*

because many felt that society should not and could not afford the costs associated with the “too-big-to-fail status quo.”²¹⁹ Indeed, during the recent financial crisis, in order to maintain the stability of the economy, the U.S. government provided subsidies to the bigger financial institutions totaling approximately \$1.525 trillion through the Troubled Asset Relief Program²²⁰ and the Stimulus Package.²²¹ These programs, which were criticized for having used taxpayers’ money to save Wall Street,²²² were accompanied by

EARLY 1990s 37–51 (1998) (discussing policy options during Continental Illinois National Bank’s resolution). The term has received great attention in the last two decades. *See, e.g.*, Benton E. Gup, *Are Fannie Mae and Freddie Mac Too Big to Fail?*, in *POLICIES AND PRACTICES IN GOVERNMENT BAILOUTS* 287, 310 (Benton E. Gup ed. 2003) (“GSE direct and guaranteed debt is 40 percent larger than the federal government’s debt.”); Helen A. Garten, *Banking on the Market: Relying on Depositors to Control Bank Risks*, 4 *YALE J. ON REG.* 129, 146 (1986) (noting the “widely held perception that some banks are too big to fail”); Jeffrey E. Garten, Op-Ed., *Too Big to Fail: Megamergers Could Create Economic Havoc*, *N.Y. TIMES*, Sept. 26, 1997, at A27 (discussing that American citizens and corporations are “so intertwined with major financial firms around the world that they will never be allowed to fail”). During the recent financial crisis, regulators announced that the government would provide capital to the top nineteen biggest bank holding companies if, based on the results of “stress tests,” they needed it but could not raise it on their own. Consequently, the government ended up injecting more than \$220 billion of capital into eighteen of those conglomerates, and by doing so indicated that all nineteen firms were presumptively “too-big-to-fail at the time.” *See* Wilmarth, *supra* note 191, at 713 (discussing rationales behind federal government’s monetary supports for financial firms).

218. *See, e.g.*, Ann Graham, *Bringing to Heel the Elephants in the Economy: The Case for Ending “Too Big To Fail”*, 8 *PIERCE L. REV.* 117 (2010) (discussing effective resolution mechanisms to address “too big to fail”).

219. *See* Cheryl D. Block, *Overt and Covert Bailouts: Developing a Public Bailout Policy*, 67 *IND. L.J.* 951, 991 (1992) (“The first justification for the presumption against bailout is that government intervention to protect private industry violates the free-market principles that generally govern our economy.”); Gary H. Stern, Address to the Senate Comm. on Banking, Hous. & Urban Affairs (May 6, 2009) *available at* http://www.minneapolisfed.org/news_events/pres/sterntestimony05-06-09.pdf (statement of, President and CEO of the Federal Reserve Bank of Minneapolis addressing the “too-big-to-fail” problem); *see also* Gary H. Stern, Address at Winona State University (Nov. 13, 2008), *available at* http://www.minneapolisfed.org/news_events/pres/stern11-13-08.cfm (“Once immediate fires have been doused, policymakers will have to turn to reining in TBTF because, left unchecked, the TBTF embers remaining from our emergency response will likely contribute to future financial conflagrations.”).

220. *See* Emergency Economic Stabilization Act of 2008, Pub. L. No. 110-343, 122 Stat. 3765 (codified at 12 U.S.C. § 5201 (2008)). The Emergency Economic Stabilization Act was established as a response to the subprime mortgage crisis and helped establish the Troubled Asset Relief Program, which enabled the Treasury to purchase or guarantee up to \$700 billion in troubled assets that were owned by financial institutions. *Id.*

221. *See* American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (codified at 28 U.S.C. § 1 (2009) as an economic stimulus program).

222. *See* Weber, *supra* note 189 (discussing solutions other than Wall Street bailouts). Indeed, the Special Inspector General for the Troubled Asset Relief Program argued that a total of \$23.7 trillion in taxpayer money could be expended through various programs that

bailouts for the “too-big-to-fail financial institutions.”²²³ Thus, having several independent directors on financial institutions’ risk committees that will better represent Main Street²²⁴ might help balance the interests of the financial institutions with those of society.

were meant to re-stabilize the U.S. financial system and help the economy. OFFICE OF THE SPECIAL INSPECTOR GENERAL FOR THE TROUBLED ASSET RELIEF PROGRAM, ADVANCING ECONOMIC STABILITY THROUGH TRANSPARENCY, COORDINATED OVERSIGHT AND ROBUST ENFORCEMENT (July 21, 2009) available at http://www.sigarp.gov/Quarterly%20Reports/July2009_Quarterly_Report_to_Congress.pdf.

223. The U.S. Department of the Treasury website provides details on programs designed to supply continued capital to financial institutions and to conduct stress tests of the biggest, most systemically important financial institutions to make sure they are capable of surviving the financial crisis. *Financial Stability*, U.S. DEP’T OF TREAS., <http://www.treasury.gov/initiatives/financial-stability/Pages/default.aspx> (last visited Feb. 5, 2013); see also KATE KELLY, STREET FIGHTERS: THE LAST 72 HOURS OF BEAR STEARNS, THE TOUGHEST FIRM ON WALL STREET 181–214 (2009) (detailing the fall of Bear Stearns); Press Release, FDIC, FDIC Closes Sale of Indymac Federal Bank, Pasadena, California (Mar. 19, 2009), available at <http://www.fdic.gov/news/news/press/2009/pr09042.html> (sale of Indymac Federal Bank); Failed Bank Information, FDIC, <http://www.fdic.gov/bank/individual/failed/IndyMac.html> (last visited Feb. 5, 2013) (detailing failed bank information); Statement by Secretary Henry M. Paulson, Jr. on Treasury and Federal Housing Finance Agency Action to Protect Financial Markets and Taxpayers, U.S. Dep’t of Treasury (Sept. 7, 2008), available at <http://www.treasury.gov/press-center/press-releases/Pages/hp1129.aspx> (detailing the federal bailout of housing agencies); *Turmoil in U.S. Credit Markets: Examining the Recent Actions of Federal Financial Regulators*, Hearing before the Senate Comm. on Banking, Hous. & Urban Affairs (April 3, 2008), available at http://banking.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=ec013d8f-fe1e-4fb6-a514-ab93be32ad38 (hearings on financial regulations); Matthew Karnitschnig, *U.S. to Take Over AIG in \$85B Bailout*; *Central Banks Inject Cash as Credit Dries Up*, WALL ST. J., Sept. 17, 2008, at A1 (AIG bailout); Liz Rappaport, *Lewis Testifies U.S. Urged Silence on Deal*, WALL ST. J., Apr. 23, 2009, at A1 (discussing how the federal government urged Bank of America to remain silent on the troubled Merrill Lynch deal); David Enrich & Deborah Solomon, *Citi, U.S. Reach Accord on a Third Bailout*, WALL ST. J., Feb. 28, 2009, at B1 (Citi Bailout); *Feds Give Green Light to Wells Fargo-Wachovia*, ASSOCIATED PRESS, (Oct. 10, 2008, 3:02 PM), available at <http://www.newser.com/story/39663/feds-give-green-light-to-wells-fargo-wachovia.html> (Wells-Fargo bailout).

224. Main Street has been described as “real places doing real work to revitalize their economies and preserve their character.” See Nat’l Trust for Historic Preservation, *About Main Street*, <http://www.preservationnation.org/main-street/about-main-street/> (discussing the main street movement). Pursuant to media in the United States, “Main Street,” represents the interests of everyday working-class people that are often contrasted with “Wall Street,” which symbolizes the interests of corporate capitalism. See, e.g., Richard Kirsch, *Occupy Is Right: It’s the Economy, Stupid. And Don’t Forget Democracy*, HUFFINGTON POST (May 2, 2012, 2:08 PM), http://www.huffingtonpost.com/richard-kirsch/occupy-wall-street-campaign-finance_b_1471150.html (discussing the “Occupy Wall Street” movements view of economic inequality); John Tozzi, *Investing in Main Street Instead of Just Wall Street*, BUS. WK., Apr. 25, 2012, <http://www.businessweek.com/articles/2012-04-25/investing-in-main-street-instead-of-just-wall-street> (discussing the support of local businesses).

Commentators encourage such semi-public interest directors to act as “naysayer” independent directors and to occasionally function as a devil’s advocate, rejecting various risk committee proposals.²²⁵ Indeed, studies show that considering arguments against a course of action by asking probing questions, challenging basic assumptions, focusing on counterfactuals, or suggesting other scenarios and possibilities can reduce both overconfidence and excessive risk-taking among corporate executives.²²⁶ Considering alternatives is efficient; by emphasizing opposing arguments and suggesting what could go wrong, decision-makers see risks as more relevant and recognize other possible options, thereby

225. See COLIN B. CARTER & JAY W. LORSCH, BACK TO THE DRAWING BOARD 174–75 (2004) (discussing the appointment of a “designated critic” who will dissent and help ensure that management is challenged); BARRY NALEBUFF & IAN AYRES, WHY NOT? HOW TO USE EVERYDAY INGENUITY TO SOLVE PROBLEMS BIG AND SMALL 9 (2003) (discussing why boards should identify a devil’s advocate to challenge suggested proposals); Paredes, *supra* note 174 (discussing the advantages of appointing “naysayers” on board committees); Harold J. Ruvoldt, Jr., *A way to get to “what if . . . ?”*, DIRECTORS & BOARDS, Fall 2003, at 31 (discussing the possibility of developing “black papers” to present the worst-case scenario); cf. Diane L. Coutu, *Putting Leaders on the Couch: A Conversation with Manfred F.R. Kets de Vries*, 82 HARV. BUS. REV. 65, 70 (2004) (quoting de Vries’ argument that every leader could use the help of “people with a healthy disrespect for the boss—people who feel free to express emotions and opinions openly, who can engage in active give-and-take”); David Gray, *Wanted: Chief Ignorance Officer*, 81 HARV. BUS. REV. 22 (2003) (arguing that ignorance can spawn new ideas).

226. Paredes, *supra* note 174 at 740 (“Studies show that explicitly considering the opposite—that is, considering arguments against a course of action, such as by asking probing questions and follow-ups, challenging key assumptions, focusing on counterfactuals, or developing other options—can reduce overconfidence.”). See generally, Baruch Fischhoff, *Debiasing*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 422, 440 (Daniel Kahneman et al., eds., 1982) (reviewing methods to reduce overconfidence and hindsight and noting that these biases tend to “resist attempts . . . to eliminate them”); Hal R. Arkes, *Costs and Benefits of Judgment Errors: Implications for Debiasing*, 110 PSYCH. BULL. 486 (1991) (discussing the “consider-the-opposite” as a technique of tackling biases); Hal R. Arkes et al., *Two Methods of Reducing Overconfidence*, 39 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 133, 143 (1987) (noting that when people were informed how poorly they were performing on answering basic questions, those people faced remaining questions “with significantly lower confidence”); Stephen J. Hoch, *Counterfactual Reasoning and Accuracy in Predicting Personal Events*, 11 J. EXPERIMENTAL PSYCH.: LEARNING, MEMORY, & COGNITION 719, 729 (1985) (arguing that counterfactual reasoning can improve predictive accuracy in those “with a predisposition to attribute good outcomes to internal factors”); Charles G. Lord et al., *Considering the Opposite: A Corrective Strategy for Social Judgment*, 47 J. PERSONALITY & SOCIAL PSYCH. 1231 (1984) (showing that considering the opposite can help improve judgment); Charles R. Schwenk & Richard A. Cosier, *Effects of the Expert, Devil’s Advocate, and Dialectical Inquiry Methods on Prediction Performance*, 26 ORGANIZATIONAL BEHAV. & HUM. PERFORMANCE 409, 422 (1980) (comparing three decision-making techniques and advocating for the use of a devil’s advocate in organizational decision making).

introducing doubt.²²⁷ Such doubt could both decrease executives' overconfidence and encourage the board to veto or to rethink and reorganize potentially harmful projects that might otherwise be approved based on the executives' initial, less thought out endorsement.²²⁸

In order for this "naysayer" independent director concept to succeed, individuals filling this role must be independent professionals and well-regarded in their fields.²²⁹ In addition, such individuals must have access to all the information needed for them to fulfill their duties to effectively press the other board members and the executives and ask probing questions and present viable alternative business strategies.²³⁰ Finally, the "naysayers" cannot be a source of agency problems for the financial institution and must really investigate the relevant courses of actions and suggested views before making different suggestions and presenting opposing views.²³¹

Independent directors, however, should not take themselves too seriously and be too disruptive or grind things to a halt.²³² After all, their effect should not be to block desired courses of action. Similarly, they should not replace most of the management directors on the risk committee.²³³ Some argue that appointing a wholly independent committee does not ensure better risk management.²³⁴ To the contrary, it is important for the risk committee members to know each other and feel comfortable

227. See, e.g., David Trafimow & Janet A. Sniezek, *Perceived Expertise and Its Effects on Confidence*, 57 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 290, 300 (1994) (showing that general perceived expertise affects confidence on discrete decisions); Hal R. Arkes et al., *Eliminating the Hindsight Bias*, 73 J. APPLIED PSYCH. 305, 305-06 (1988) ("[C]onsidering the opposite [outcome] was effective in reducing overconfidence."); cf. S. Plous, *A Comparison of Strategies for Reducing Interval Overconfidence in Group Judgments*, 80 J. APPLIED PSYCH. 443 (1995) (finding that "overconfidence persisted in the face of explicit warnings, instructions to expand interval widths, and extended group discussion" and that "using the devil's advocacy approach" did not yield better performance than "individuals working alone").

228. But see Plous, *supra* note 227.

229. Paredes, *supra* note 174 at 745 ("[I]ndividuals filling the devil's advocate role should have stature and should be well-regarded so that their views are respected and heeded . . .").

230. Paredes, *supra* note 174 at 745.

231. See Paredes, *supra* note 174, at 745-46 (arguing that appointed naysayers cannot "[s]imply [go] through the motions" of playing devil's advocate, as they could give "officers and directors 'cover' if they make a bad decision").

232. Paredes, *supra* note 174, at 746.

233. See, e.g., Sanjai Bhagat & Bernard Black, *The Non-Correlation Between Board Independence and Long-Term Firm Performance*, 27 J. CORP. L. 231, 265 (2002) (concluding that having insiders on the board can and does add value); Sanjai Bhagat & Bernard Black, *The Uncertain Relationship Between Board Composition and Firm Performance*, 54 BUS. LAW. 921, 922 (1999) ("[Firms with] majority-independent boards appear not to perform any better than firms without such boards").

234. See, e.g., *The Uncertain Relationship*, *supra* note 233, at 922.

with each other. Trust among the team is critical for actual insider members to share their knowledge of areas of exposure, rather than not knowing what is happening, or trying to prove that they are not aware of any weaknesses.²³⁵ The independent directors should be included in the committee as an additional effective monitoring tool, especially as studies have shown that increasing the number of directors does not undercut performance.²³⁶

In addition, based on behavioral finance studies, the risk committee, as a group, will most likely be exposed to the choice shift phenomenon—a documented effect according to which groups make riskier decisions than individuals in finance and investment-related issues.²³⁷ Indeed, groups have been shown to significantly prefer high-risk investments.²³⁸ Research has shown that the inclusion of outsiders, such as independent directors, might help counterbalance this choice shift.²³⁹ Thus, it is crucial to recruit independent directors who have different backgrounds, experiences, and educations from those of the risk committee members.²⁴⁰ This will increase the likelihood that the independent directors will have a different agenda than the other directors and individuals who serve on the risk committee, and help counterbalance the impact of the choice shift phenomenon.²⁴¹

235. See Stuart, *supra* note 63 (discussing best practices for corporate risk management).

236. See Mohamed Belkhir, *Board of Directors' Size and Performance in the Banking Industry*, 5 INT'L J. OF MANAGERIAL FIN. 201 (2009) (finding that “there is robust evidence that larger boards achieve a higher performance”).

237. See M. King Deets & George C. Hoyt, *Variance Preferences and Variance Shifts in Group Investment Decisions*, 5 ORGANIZATIONAL BEHAV. & HUM. PERFORMANCE, 378, 378–79 (1970) (noting that individuals in groups “change their preferences in the direction of assuming greater risk”).

238. *Id.*

239. See, e.g., Byoung-Hyoun Hwang & Seoyoung Kim, *It Pays to Have Friends*, 93 J. FIN. ECON. 138, 139 (2009) (studying the effect of social ties on seemingly-independent boards).

240. “[E]ven one isolated director can provide a degree of protection to minority shareholders by publicizing, or threatening to publicize, majority shareholder abuses of which he becomes aware.” Clarke, *supra* note 210, at 80.

241. Some commentators argue, however, that independent directors may not have this effect on the board’s decision-making processes. See Lisa M. Fairfax, *The Uneasy Case for the Inside Director*, 96 IOWA L. REV. 127 (2010) (arguing that independent directors are overvalued at the expense of inside directors); Eliezer M. Fich & Lawrence J. White, *CEO Compensation and Turnover: The Effects of Mutually Interlocked Boards*, 38 WAKE FOREST L. REV. 935, 936 (2003) (exploring the impact of having board members who also serve as board members for another corporation on CEO compensation and turnover); Idalene F. Kesner et al., *Board Composition and the Commission of Illegal Acts: An Investigation of Fortune 500 Companies*, 29 ACAD. MGMT. J. 789, 794–96 (1986) (examining the impact of various board structures on corporate misconduct). This criticism may be a reflection on the vague definition of “independence,” and cognitive biases limit directors’ ability to act or

B. Risk Committees' Obligations

1. Disclosure Requirements

Individuals are often torn between the desire to gain from being dishonest and the desire to maintain a positive self-concept as honest individuals.²⁴² If individuals cheat, they could, in many cases, gain financially at the expense of an honest self-concept.²⁴³ Attempting to solve this motivational dilemma, individuals typically find a balance between the two motivating forces, such that they derive some financial benefit from their dishonesty, but at the same time are still able to maintain their positive self-concept.²⁴⁴ Trying to understand what factors impact such balance, behavioral economics studies have researched what causes individuals to act in a more honest fashion.²⁴⁵ Accordingly, it has been shown that causing individuals to become more aware of their standards for honesty actually decreases the individual's tendency for deception.²⁴⁶

Utilizing the results of these studies to enhance risk management regulation, risk committee members should be required to make frequent periodic statements to their financial institution's board and executives, confirming that to the best of their knowledge, their institution complies with all risk management-related legal requirements. The risk committee members should also confirm that as far as they know, no overly excessive risks are being taken by the financial institution. Requiring risk committee members to do this would make them more aware of their internal sense of integrity, which might have a positive effect on their performance. Accordingly, if submitting such statements will entail admitting that the financial institution is not legally compliant or that excessive risks are being taken, reports should be submitted detailing the lack of compliance, the nature of such risks, and the precautionary measures adopted by the risk committee regarding those risks.

While adopting such disclosure requirements is burdensome, disclosure mandates still play a key role in risk management provisions because they target the mistakes and misperceptions at the core of

make decisions in a manner consistent with a theoretical perception of independence.

242. Nina Mazar et al., *The Dishonesty of Honest People: A Theory of Self-Concept Maintenance*, 45 J. MKTG. RES. 633, 634 (2008).

243. *Id.*

244. *Id.* at 643 ("In this work, we suggest that people typically solve this motivational dilemma adaptively by finding a balance . . . between the two motivating forces, such that they derive some financial benefit from behaving dishonestly but still maintain their positive self-concept in terms of being honest individuals.").

245. *Id.*

246. *Id.*

behavioral market failures.²⁴⁷ Moreover, such disclosure requirements appear necessary in light of recent events, such as the MF Global collapse, which underscores the downside of a senior risk officer reporting to the CEO without having a formal pipeline to the board.²⁴⁸ Following the MF Global case, signing off on regulatory disclosures has become more important than ever.²⁴⁹ Similarly, it is now also clear that more and better disclosure could have prevented, or at least minimized, the large losses suffered by JPMorgan in 2012.²⁵⁰ Accordingly, commentators have argued that, at the very least, risk committee members should report either jointly or solely to the board,²⁵¹ and report beyond the board directly to regulators, if further action appears necessary.²⁵²

However, any strict rules regarding mandatory disclosure, especially

247. See Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case for "Asymmetric Paternalism"*, 151 U. PA. L. REV. 1211, 1230–32 (2003) (discussing the effects of regulation on consumers); Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 U. CHI. L. REV. 1159, 1161 (2003) (encouraging rules that will “improv[e] the welfare of the people affected by them.”).

248. Prior to filing for bankruptcy, MF Global was already seen as having taken on an enormous amount of risk with little room for error given its size. According to media articles, the risk management activities at the financial firm were handled in a responsible and positive manner under the guidance of CRO Michael Roseman. See Katherine Heires, *MF Global Fallout: Good or Bad News for CROs?*, GARP.ORG (Jan. 30, 2012), <http://www.garp.org/risk-news-and-resources/2012/february/mf-global-fallout-good-or-bad-news-for-cros.aspx> (subscription required). After working at MF Global from 2008 until early 2011, Roseman reportedly left because his warnings about the amounts of the excessive liquidity risks went unheeded. “He did everything he was supposed to do,” one commentator argued. *Id.* “He identified the risk, he reported it to the CEO, and the board was well aware of the matter.” *Id.* Based on the reports, Roseman had expressed concerns to Corzine—to whom he reported—and to the board of directors about a \$6.3 billion bet on European sovereign debt and the resulting liquidity risk associated with that bet.

249. *Id.* (“Veteran capital markets observer Larry Tabb, founder and CEO of Westborough, Massachusetts-based Tabb Research” argued that given the MF Global fallout, “he would not be surprised to see risk managers over time signing off on regulatory disclosures and, in light of recent events, being asked to report beyond the board, directly to regulators.”).

250. It has been reported that some top JPMorgan “executives and directors were alerted to risky practices by a team of London-based traders two years before that group’s botched bets cost the bank more than \$2 billion . . . Interviews with more than a dozen current and former members of the bank’s Chief Investment Office, the unit responsible for the losses, indicate that discussions about reining in London traders started as early as 2010. Certain directors were briefed then on a foreign-exchange-options bet that went bad.” Dan Fitzpatrick, Gregory Zuckerman, & Joann S. Lublin, *J.P. Morgan Knew of Risks*, WALL ST. J., June 12, 2012, at A1.

251. See Heires, *supra* note 248 (citing capital markets observer Larry Tabb’s recommendation “that risk managers at trading firms report either jointly or exclusively to the board”).

252. See Heires, *supra* note 248 (noting that the board and CEO of MF Global disregarded CRO Michael Roseman’s concerns about excessive liquidity risk).

to regulators, should be carefully considered and tailored, as disclosure might not always have a positive impact. Requiring an overly detailed or a premature disclosure to regulators in the financial markets, even if aimed at greater investor protection and enhanced market efficiency, can be damaging.²⁵³ Such disclosures can interfere with financial institutions' competitive capacities and weaken the system of private incentives for innovation.²⁵⁴ When information of competitive value is also of value within financial markets, not disclosing it would negatively impact a financial institution's ability to raise finance and make resource allocation less effective.²⁵⁵

2. The Illusion of Control

Even when an event is uncontrollable, individuals often still believe that they have some ability to control the outcomes.²⁵⁶ This illusion of control, which is well documented in behavioral finance literature, makes individuals believe that based on their skills and expertise they can influence the result of a random situation and avoid large monetary losses.²⁵⁷ This bias was recently demonstrated by the MF Global collapse.

253. See generally Sergio Gilotta, *The Conflict between Disclosure in Securities Markets and the Firm's Need for Confidentiality: Theoretical Framework and Regulatory Analysis 2* (Aug. 2, 2010) (unpublished manuscript), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1709334 (discussing the pros and cons of disclosure and noting that it can be "extremely harmful for the firm").

254. *Id.*

255. *Id.*

256. See H. Kent Baker & John R. Nofsinger, *Psychological Biases of Investors*, 11 FIN. SERVS. REV. 97, 103 (2002) (noting that "[p]eople often believe that they have influence over the outcome of uncontrollable events"); Ellen Langer, *The Illusion of Control*, 32 J. PERSONALITY & SOCIAL PSYCHOL. 311, 312 (1975) (citing evidence that people treat chance events as controllable).

257. See, e.g., JAMES MONTIER, *BEHAVIOURAL INVESTING: A PRACTITIONER'S GUIDE TO APPLYING BEHAVIOURAL FINANCE* 20–22 (2007) (presenting one study where professional investors were shown to be less likely to correctly predict stock outcomes than both laypeople and coin flips); Ellen Langer, *The Illusion of Control*, 32 J. PERSONALITY & SOCIAL PSYCHOL. 311 (1975) (stating that unlike skill-based activities, success in forecasting chance-based events is uncontrollable); Shelley E. Taylor & Jonathon D. Brown, *Illusion and Well-being: a Social Psychological Perspective on Mental Health*, 103 PSYCHOL. BULL. 193, 196 n.2 (1988) (stating that unrealistically positive self-views are the result of "private posturing," not public conditioning); Gary Charness & Uri Gneezy, *Portfolio Choice and Risk Attitudes: An Experiment* (Feb. 20, 2003) (unpublished manuscript), available at <http://www.escholarship.org/uc/item/7vz7w609#page-2> (varying levels of control, ambiguity, and freedom of choice did not ultimately change individual tendencies to engage in risky investment behavior). For an example of how the illusion of control is documented in behavioral finance literature, see Neil D. Weinstein, *Unrealistic Optimism About Future Life Events*, 39 J. PERSONALITY & SOCIAL PSYCHOL. 806 (1980).

Due to the worsening Eurozone crisis, the firm was facing a great sovereign risk, and it was unclear if it could get by the potential related loss.²⁵⁸ But MF Global has other problems as well. The firm needed to take a \$119 million accounting charge, a write-off of tax credits accumulated from years of operating losses.²⁵⁹ In meetings with the CEO, several worried risk managers spelled out the fears, but the CEO did not think the firm needed to make any drastic changes.²⁶⁰ MF Global's CEO said that he would personally explain to the credit firms and the investors how and why everything would be alright, as it was all a matter of needing a little more time before he and his deputies would work it all out.²⁶¹

Thus, in order to reduce the amount of excessive risk to which risk committees expose their financial firms while operating under the impression that the situation is under control, it is crucial for committee members to remain aware of the inherent inability to control a situation. The best way to do so is to expect the worst.²⁶² This means that risk committee members should undergo short training sessions to learn about this bias, along with techniques to best counterbalance it. Additional focus should be given to case studies demonstrating that despite the ability and skill of financial institutions' executives, boards, and risk committee members, not all situations can be controlled. Thus, executive, board, and risk committee members should be required to analyze and advance-prepare potential responses to all possible scenarios. One of the key lessons from the 2008 financial crisis was that financial institutions should always be prepared for all possible outcomes—"the sad truth we have learned is that this is absolutely necessary."²⁶³

C. Risk Committees' Working Procedures and Functioning

1. A Formula Is Worth Less Than A Thousand Words

Another behavioral trait demonstrated by Professor Rubinstein's studies relates to the "framing effect" regarding the format through which

258. Elkind & Burke, *supra* note 5.

259. Elkind & Burke, *supra* note 5.

260. Elkind & Burke, *supra* note 5.

261. Elkind & Burke, *supra* note 5 ("It was a belief," says one of the dismayed executives, "in an ability to get through any situation.") (internal quotation marks omitted).

262. See Packin, *supra* note 16, at 253 ("The need to be prepared for all possible scenarios . . . is one of the lessons from the recent financial crisis.").

263. See Huw Jones, *FSA Says Clashes Over Bank Living Wills Inevitable*, FORBES, Nov. 2, 2009, available at http://www.lse.co.uk/ShareNews.asp?shareprice=HSBA&ArticleCode=xfl0n1hg7m3df9r&ArticleHeadline=FSA_says_clashes_over_bank_living_wills_inevitable (quoting Hector Sants, FSA Chief Executive).

information is presented to decision-makers. Commentators within the behavioral decision-making field widely acknowledge that the research of effect closely relates to people's judgment-based decision-making.²⁶⁴ Researching this issue, Rubinstein tested individuals on the issues of profit-maximization versus social responsibility, and gave the test subjects questionnaires in both mathematical function and verbal description form. The results were much more radical when the dilemma was described as a function: Approximately seventy-five percent of the test subjects decided to fire the maximum number of employees.²⁶⁵ It appears that numbers blinded test subjects from the fact that they were responsible for issues beyond profit maximization, such as supporting the economy of the hypothetical company's town, and helping individuals from that community keep their jobs. A main conclusion from that experiment, *inter alia*, was that presenting financial and business situations in a purely mathematical format eliminates their complexity.²⁶⁶

Scholars have also found that minor adjustments in the wording of judgments can have a major effect on choice behavior in relation to risk,²⁶⁷ and slight differences in how risks are presented can significantly affect how they are perceived.²⁶⁸ People tend to make moral judgments through moral heuristics, which may be less sound than moral judgments that derive from deliberative reasoning.²⁶⁹ As a result, framing effects can be used to change individuals' perceptions of risk. For example, according to studies that investigated the connections between framing problems, risk perception, and risk-taking behavior: (1) positively-framed situations are perceived as higher-risk than their negatively-framed counterparts; and (2) the degree to which test subjects make risky decisions is negatively associated with their degree of risk perception.²⁷⁰

Reconciling these studies' conclusions is difficult. On the one hand,

264. See generally HANDBOOK OF EMOTIONS 548 (Michael Lewis, Jeannette M. Haviland-Jones & Lisa Feldman Barrett eds., 3d ed. 2008) ("[E]ven mild and even positive affect can markedly influence everyday thought [and decision-making] processes, and does so regularly"); HANDBOOK OF AFFECT AND SOCIAL COGNITION (Joseph P. Forgas ed. 2001); ANDREW ORTONY, GERALD L. CLORE & ALLAN COLLINS, THE COGNITIVE STRUCTURE OF EMOTIONS (1988); KENNETH T. STRONGMAN, THE PSYCHOLOGY OF EMOTION (3d ed. 1987).

265. Rubinstein, *supra* note 197. Seventy-three to seventy-seven percent of subjects in all groups chose the profit-maximizing solution of 100, which was also the maximum for X.

266. Rubinstein, *supra* note 197.

267. Fischhoff, *supra* note 226, at 483.

268. Fischhoff, *supra* note 226, at 483.

269. Tess Wilkinson-Ryan & Jonathan Baron, *Moral Judgment and Moral Heuristics in Breach of Contract*, 6 J. EMPIRICAL LEGAL STUD. 405, 423 n.17 (2009).

270. Sim B. Sitkin & Laurie Weingart, *Determinants of Risky Decision-Making Behavior: A Test of the Mediating Role of Risk Perceptions and Propensity*, 38 ACADEMY OF MANAGEMENT JOURNAL 1573-92 (1995).

any attempt to describe information in a verbal, neutral, complete, and accurate way to risk committee members is doomed to fail. As explained, an underlying assumption of cognitive psychology holds there is no such thing as “neutral” framing, though framing can be more or less inflammatory. On the other hand, significant business- and risk-related dilemmas should clearly not be presented only in mathematical formulas, because numbers alone can be deceptively misleading. Thus, analyses of the qualitative side of business- and risk-related dilemmas are also needed to make intelligent and well-balanced decisions. Commentators agree that it is imperative to have common-sense insights into various business and financial aspects, the individuals involved in those aspects, and any important, additional, multi-layered issues.²⁷¹ Thus, ideally, risk committees should be presented not just with highly sophisticated and carefully devised mathematical formulas and models, but also qualitative information that should be framed in the least inflammatory fashion.²⁷²

271. Dean Simone, a partner and United States risk assurance leader at PricewaterhouseCoopers, has said that one:

cannot approach any analysis purely from a quantitative perspective. The numbers only tell you one story and the numbers could be misleading. You need to have the qualitative side to that too and you need to marry that with common sense insofar as your knowledge of the business, its people and whether there is some issue that is percolating that you want to get ahead of. You will not find an internal audit group or compliance function that is effective if it only looks at one of those data points or doesn't consider the qualitative things you need to think about that are outside the numbers . . . [B]anks are realizing that risk management cannot solely be a data-driven exercise. Risk management may have started as a discipline with a dearth of data, which forced it to be more empirical in its identification of risk factors. But with access to massive amounts of data, risk managers have perhaps become too dependent on using data and models without looking at the numbers and asking: so what does this all mean?

Rachel Wolcott, *Beyond the Numbers: Do Banks Manage Risk?*, REUTERS BLOG (June 14, 2012), available at <http://blogs.reuters.com/financial-regulatory-forum/2012/06/14/beyond-the-numbers-do-banks-manage-risk/> (internal quotation marks omitted).

272. Statistical and mathematical formulas and models are central to the assessment and prediction of both human and organizational behavior. Nevertheless, the importance of qualitative information is also obvious. Accordingly, a clinical versus statistical prediction debate has been the focus of applied psychology researchers for many decades now. Despite the great amount of research done, it appears that Paul E. Meehl's analyses of this issue, which was mostly published in the 1950's and 1960's, has not been significantly improved upon since then. Meehl's conclusion was that statistical prediction, which includes, *inter alia*, information combined by formulas, computer programs, and actuarial tables, outperforms clinical judgment. See generally Paul E. Meehl, *Causes and Effects of My Disturbing Little Book*, 50 J. PERSONALITY ASSESSMENT 370 (1986). However, while admitting “that [a decision-maker] cannot act in accordance with both of [two] incompatible predictions,” Meehl, nevertheless, promoted using clinical judgment in many instances,

Accordingly, various examples of potential financial, business, and social consequences from all spectrums of the scales should be provided and presented to risk committee members, based on different potential business scenarios. This will increase the chances that other factors in addition to profit maximization will be taken under consideration, such as social aspects or potential catastrophic outcomes, with as few “framing effects” consequences as possible.

2. “Accountability Breeds Response-Ability” – Stephen R. Covey

Decision Theory literature suggests that a sense of accountability contributes to better decision-making.²⁷³ Similarly, accountability is likely to improve performance in both judgment- and decision-making tasks.²⁷⁴ Given the psychological impact that accountability has on performance, this effect should be utilized in order to counter-balance any biases toward

arguing that “[n]obody has ever disputed that the actuary would be well advised to listen to clinicians in setting up the set of variables.” *Id.* at 372 (1986). Moreover, Meehl had repeatedly emphasized the importance of factoring in predictions clinicians’ important insights, arguing that it would be erroneous to adopt an assertion that “the clinician is a second-rate substitute for a Hollerith machine,” a mechanical tabulator that can rapidly tabulate statistics from millions of pieces of data. PAUL E. MEEHL, *CLINICAL VERSUS STATISTICAL PREDICTION: A THEORETICAL ANALYSIS AND A REVIEW OF THE EVIDENCE* 76 (1954) (internal quotation marks omitted). Similarly, Meehl argued that there is “a ‘special power of the clinician’ that cannot, in principle, be completely duplicated by even the most sophisticated computer program.” William M Grove & Martin Lloyd, *Meehl’s Contribution to Clinical Versus Statistical Prediction*, 115 *J. ABNORMAL PSYCHOL.* 193 (2006) (discussing the major contributions of Meehl’s work). Promoting this notion, Meehl has become known for analyzing the inherent limitations of actuarial prediction. Using his famous “broken-leg cases” to explore this issue, he asserted that “there are too many distinct, unanticipated factors” influencing human behavior, and that researchers cannot gather good actuarial data on all of those factors so that models can take them into account. *Id.* at 192–94.

273. See, e.g., Philip E. Tetlock et al., *Social and Cognitive Strategies for Coping With Accountability: Conformity, Complexity and Bolstering*, 57 *J. PERSONALITY & SOC. PSYCHOLOGY* 632 (1989) (revealing that individuals unconstrained by prior commitments will be incentivized and inclined to do more complex, self-critical thinking when made accountable to individuals with unknown views); Philip E. Tetlock & Jae Il Kim, *Accountability and Judgment Processes in a Personality Prediction Task*, 52 *J. PERSONALITY & SOC. PSYCHOLOGY* 700 (1987) (discussing how research results reveal that accountability caused subjects to digest and process data in more sophisticated and meaningful ways).

274. See Itamar Simonson & Peter Nye, *The Effect of Accountability on Susceptibility to Decision Errors*, 51 *ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES* 416 (1992) (stating that research reveals that accountability can impact the way people think as well as their thoughts and can cause decision-makers to make less judgment and choice errors).

risk taking that exist among risk committee members. Accountability can impact behavior in two ways. First, it can help individuals to avoid putting imprudent risk-related choices into practice, merely by creating fewer opportunities to misbehave. Second, it can improve the decision-maker's judgment.²⁷⁵

Nevertheless, it should be made clear that in return for appropriate compensation, such professionals must be held fully accountable for overseeing the risk in a transparent and public fashion. This could be accomplished by annually publishing the names of risk committees' members in different financial publications, so as to increase their sense of accountability and, therefore, responsibility.²⁷⁶ Doing so would only be taking an extra step beyond a recent SEC recommendation.²⁷⁷ The SEC has suggested rules mandating that corporations disclose more information on their board leadership structure, including information on whether the corporation has a lead director, and if so, what his or her role is in guiding it.²⁷⁸ The SEC also recommended including information on the qualifications of board members, any potential conflicts of interest that might impact compensation consultants, and how the relevant corporation's compensation guidelines are aligned with risk-taking.²⁷⁹

275. In order for risk committees to make quick judgments about the risky characteristics of the investments they oversee, individuals with sufficient stature relative to the line executives they oversee should be appointed as committee members. Such individuals could be motivated in exchange for proper compensation. While this might seem trivial, this was not the case at JPMorgan, where senior chief risk officer Barry Zubrow earned less than his peers at global banks and was not among his company's top tier in compensation. Zubrow has been the head of the Corporate and Regulatory Affairs of JPMorgan since January 2012. Before then, Zubrow had been Chief Risk Officer since November 2007. See *People: JPMorgan Chase & Co (JPM)*, REUTERS (10/12/2012), available at <http://www.reuters.com/finance/stocks/companyOfficers?symbol=JPM&WTmodLOC=C4-Officers-5> (showing Zubrow's compensation as not in the top tier, and otherwise unlisted) (last visited Oct. 10, 2012).

276. This is already done internally, to a great extent, in financial institutions, and sometimes such internal publications find their way into the public media. See, e.g., *J.P. Morgan Makes More Risk Management Changes*, WALL ST. J. BLOG (June 1, 2012, 11:04 AM), <http://blogs.wsj.com/deals/2012/06/01/j-p-morgan-makes-more-risk-management-changes/> (noting JPMorgan's 2012 announcement regarding nominations and changes in the risk management departments).

277. Press Release, Sec. & Exch. Comm'n, SEC Proposes Measures to Improve Corporate Governance and Enhance Investor Confidence (July 1, 2009) <http://www.sec.gov/news/press/2009/2009-147.htm>.

278. Press Release, Sec. & Exc. Comm'n, SEC Approves Enhanced Disclosure About Risk, Compensation and Corporate Governance, (Dec. 16, 2009), <http://www.sec.gov/news/press/2009/2009-268.htm>.

279. *Id.*

3. Detailing Potential Ruinous Consequences of Considered Risks

Studies demonstrate that individuals' views of risk are greatly impacted by whether or not they associate the risk with potentially disastrous outcomes.²⁸⁰ A majority of managers that were presented with several investment options, which included either one safe choice or one uncertain choice, were risk-seekers when faced with below-target outcomes, and seventy-one percent of the managers displayed general risk-seeking behaviors. When faced with an uncertain choice that had potential actual ruinous losses, sixty-four percent of the managers tested showed clear risk-averse tendencies.²⁸¹

Life outside the hothouse, unlike in experiments conducted with very clear terms and specific options, is often more grey than black and white. Even if an uncertain option can end up with ruinous consequences, such an outcome often appears to be very unlikely. Indeed, this was the situation at MF Global. Only months before the firm realized it had to file for bankruptcy,²⁸² a detailed disaster scenario was prepared at the board's request, which was a written fire drill in expectation of a "run on the bank" after a firm's credit downgrade to junk status.²⁸³ This disaster scenario report came to be known as the "break the glass" plan, and despite the already known great risks, its summary passage concluded that MF Global would surely survive.²⁸⁴

But even without being overly optimistic about risks, can sophisticated financial institutions' risk management, which include scenario planning,²⁸⁵ interactive simulation, and war games,²⁸⁶ always be

280. Dan J. Laughhunn et al., *Managerial Risk Preferences for Below-Target Returns*, 26 *MGMT. SCI.*, 26, 1238–49 (1980).

281. *Id.*

282. See, e.g., Jonathan Spicer & Nick Brown, *Corzine's MF Global collapses under euro zone bets*, REUTERS (Oct. 31, 2011, 7:52 PM), <http://www.reuters.com/article/2011/10/31/us-mfglobal-idUSTRE79R4YY20111031> (discussing the types of risky assets that led to MF's downfall).

283. Elkind & Burke, *supra* note 5 (concluding that "remain solvent—are able to manage liquidity through stress period as we reposition our business and stabilize our financing lines") (internal quotation marks omitted).

284. Elkind & Burke, *supra* note 5.

285. Scenario analysis attempts to answer the same questions as the VAR, but only from a more qualitative perspective—namely, what are the possible outcomes a financial institution faces and what is the likelihood of each outcome actually happening:

Scenario analysis is an important tool in decision making. It has been in existence for several decades and has been used in various disciplines, including management, engineering, defense, medicine, finance and economics. . . . It is a tool that, when properly and systematically used, can bring to light many

able to predict the threat of potential ruinous losses, and warn about the dangers? No. For example, using only symmetric distribution assumptions will not prevent possible losses from occurring with greater probability, which is commonly referred to as the “fat tail” issue.²⁸⁷ Similarly, the occurrence of a “tail dependence,” which is the risk that a loss in one sphere will cause losses in other spheres, is always a possibility, despite the fact that an initial loss can be at the tail of the probability distribution.²⁸⁸ And such tail dependence risk is not the only radical scenario of which financial institutions’ risk management systems must be wary. Destructive and disastrous events can occur in a random way that cannot be modeled or calculated in advance.²⁸⁹ Indeed, according to Professor Nassim Taleb, disastrous events are “black swans”—always new and unthinkable.²⁹⁰

important aspects of a situation that would otherwise be missed. Scenario analysis tries to navigate the possible situations and events that can impact an entity in the future, with respect to the characteristics we are trying to measure and given the state of the entity at the present time.

Kabir K. Dutta & David F. Babbel, *Scenario Analysis in the Measurement of Operational Risk Capital: A Change of Measure Approach*, (July 5, 2012) (unpublished manuscript), available at <http://ssrn.com/abstract=1565805>.

286. A war game is a special simulation of combat. Corporations adopted this exercise and use it as a business improvement technique—a simulation of competition in a marketplace. This tool has become popular, as it offers strategists new ways to analyze their businesses, their competitors, and their business decisions. The main purpose of most war games is to increase companies’ profitability and success in the face of competition and a series of uncontrollable trends and occurrences. See generally, Benjamin Gilad, BUSINESS WAR GAMES: HOW LARGE, SMALL, AND NEW COMPANIES CAN VASTLY IMPROVE THEIR STRATEGIES AND OUTMANEUVER THE COMPETITION (2009); MARK L. HERMAN ET AL., WARGAMING FOR LEADERS: STRATEGIC DECISION MAKING FROM THE BATTLEFIELD TO THE BOARDROOM (2009).

287. See, e.g., Barry J. Eichengreen, *Ten Questions About the Subprime Crisis*, 11 FIN. STABILITY REV. 19, 21 (2008) (stating that “[e]ven state-of-the-art models have a tendency of underestimating the probability of extreme outcomes”); see also Susan Pulliam et al., *Merrill Upped Ante as Boom in Mortgage Bonds Fizzled*, WALL ST. J., Apr. 16, 2008, at A1 (discussing Merrill Lynch’s aggressive posture in the MBS market before the 2008 crisis).

288. See Fanto, *supra* note 61, at 742 (suggesting that financial modeling may be flawed because it fails to take into account the possibility of spillover effects and noting that catastrophic financial events do not necessarily occur in isolated sectors—they may cause unexpected problems in other areas, problems that the models in those sectors fail to account for); see also BASEL COMM. ON BANKING SUPERVISION, PRINCIPLES FOR SOUND STRESS TESTING PRACTICES AND SUPERVISION 9 (2009), available at <http://www.bis.org/publ/bcbs147.pdf> (stating in the context of the 2008 crisis: “Most risk management models, including stress tests, use historical statistical relationships to assess risk. They assume that risk is driven by a known and constant statistical process . . . The turmoil has revealed serious flaws with relying solely on such an approach.”).

289. Nassim Nicholas Taleb, THE BLACK SWAN: THE IMPACT OF THE HIGHLY IMPROBABLE 274–85 (2007).

290. *Id.*; see also Joe Nocera, *Risk Mismanagement: Were the Measures Used to*

Preparing in advance to deal with black swans or trying to prevent black swans from happening entails a logical problem. Even if proper risk management measures were put in place in advance to prevent black swans and were indeed successful in doing so—preventing a new and unthinkable specific event from ever happening—no one would know that the newly installed measures were the cause of the success, as the unthinkable event never happened.²⁹¹ Nevertheless, when the same newly installed measures are not successful in preventing a second, different, also new and unthinkable event from happening, the public will be enraged, arguing that wasteful unsuccessful risk management procedures were installed, which failed to detect and prevent an unthinkable [second] event from happening. And since it is impossible to predict every single new and unthinkable event and prevent it in advance, this outcome is inevitable. Moreover, in the process of trying to amend the risk management measures after existing measures failed to detect an unthinkable event from happening, damaging changes can be made, which will prevent the potential ability to predict and prepare for a different kind of event.²⁹²

Therefore, while it should be understood that any attempt to create a bulletproof protection against ruinous losses is doomed to fail, risk committees can increase their members' awareness of any potential consequences. By doing so, risk committee members will be able to make decisions that are less likely to result in ruinous losses as such consequences will be considered in advance. Accordingly, all the options from which committee members must choose should be carefully outlined to them, and emphasis, as well as explanations in great detail, should be given regarding the more uncertain options, especially if they have possible disastrous consequences. After all, based on studies done, if the risk committee members will understand the full scale of potential ruinous losses, they will show more risk-averse tendencies in their decision-

Evaluate Wall Street Trades Flawed?, N.Y. TIMES MAG., Jan. 4, 2009, at 27–31, available at 2009 WLNR 152510.

291. “If risks are well prevented, we’ll never know how much value was preserved because we will never experience the loss. All we will have to measure is the cost of prevention. . . . It is a problem because while we can identify the value of a ‘no’ decision in theory, in the real world ‘no’ decisions will be evaluated routinely only in hindsight. In hindsight, they tend to not look very good unless we are already facing a disaster.” Okamoto *supra* note 72, at 217.

292. “[I]f financial-market complexities produce new situations of risk that may have little to do with model outcomes, risk assessment and measurement may aggravate the situations because they change the conduct of parties who believe that they have already prepared for the worst.” Fanto, *supra* note 61, at 752–53; see also GEORGE COOPER, THE ORIGIN OF FINANCIAL CRISES: CENTRAL BANKS, CREDIT BUBBLES AND THE EFFICIENT MARKET FALLACY 144–48 (2008).

making.

4. This Time, It's Different

The theme of familiarity bias plays a significant role within the risk perception literature. Research indicates that people tend to “see a little of the past in many present situations and base their decision on what they believe to be the implications of these past events.”²⁹³ Accordingly, in the risk context, people feel more comfortable with risk-taking when they are familiar with the specific relevant risks. For example, it has been proven that investors tend to put too much faith in familiar stocks, as they view investing in them as safer than investing in unknown stocks and even safer than investing in diversified portfolios.²⁹⁴

In order to avoid entering into excessive risks when decision-makers feel familiar and comfortable with known but nevertheless dangerous risks, which may appear less dangerous than they really are, analyses of the unknown factors associated with the pending risks should be done. The analyses need to reflect all aspects of the potentially excessive risks, and show that even if the circumstances this time around are safer based on and in comparison to past results, taking these risks is the desired course of action for the financial institution.

5. Fighting The Hindsight Bias

People's inclination to fixate on what is available causes the hindsight bias, one of the most researched shortcomings in human beings' probability evaluations.²⁹⁵ People find it easier to imagine events “that actually took place” rather than events “that did not,” which results in overestimating of the likelihood of events that actually did take place.²⁹⁶ The hindsight bias, therefore, explains this “tendency of actors to overestimate the *ex ante* prediction that they had concerning the likelihood of an event's occurring after learning that it actually did occur.”²⁹⁷ Research demonstrates that

293. Thomas Gilovich, *Seeing the Past in the Present: The Effect of Associations to Familiar Events on Judgments and Decisions*, 40 J. OF PERSONALITY & SOC. PSYCHOL. 797, 798 (1981).

294. H. Kent Baker & John R. Nofsinger, *Psychological Biases of Investors*, 11 FIN. SERVS. REV. 97, 101 (2002).

295. See Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CAL. L. REV. 1051, 1095–1100 (2000) (discussing hindsight bias).

296. Camerer & Loewenstein, *supra* note 165, at 10.

297. Thomas S. Ulen, *Human Fallibility and the Forms of Law: The Case of Traffic Safety*, in THE LAW AND ECONOMICS OF IRRATIONAL BEHAVIOR 397, 410 (Francesco Parisi &

hindsight bias plays a role in individuals' risk probabilities calculations.²⁹⁸

Accordingly, the need to counterbalance the hindsight bias and, as mentioned above, prepare for all possible scenarios, has placed the issue of stress testing—a specific procedure of risk-management²⁹⁹—in the spotlight. Stress tests are designed to discover weak points in financial institutions' systems at an early stage, and to assist the financial institutions, and the regulators supervising them with deciding what preventive actions must be taken. Stress tests are a procedure for evaluating the potential loss of a portfolio due to shocks to its underlying risk factors over a wide range of scenarios, however unlikely the probability of the occurrence may be.³⁰⁰ Therefore, stress tests are essentially forward-looking economic assessments that check whether financial institutions are strong enough to endure pessimistic economic conditions or extreme emergencies.³⁰¹ The Dodd-Frank Act requires financial regulatory authorities to conduct annual analyses of systemically important financial institutions as part of the Act's enhanced supervision provisions. Pursuant to this requirement, the authorities will evaluate whether the financial institutions “have the capital, on a total consolidated basis, necessary to absorb losses as a result of adverse economic conditions.”³⁰² In addition, the Dodd-Frank Act requires all systemically important financial institutions to conduct internal semi-annual stress tests, and mandates that all other regulated financial companies with assets equal to or greater than ten billion dollars conduct internal annual stress tests, and report the results of the testing to the authorities.³⁰³ A summary of such reports will also get published by the SIFIs and the other tested financial

Vernon L. Smith eds., 2005).

298. Rapp, *supra* note 57, at 159. Supplementing the effect of hindsight bias is the “denominator blindness” effect, which was analyzed by Kip Viscusi and Richard Zeckhauser. According to their study, individuals are likely to focus only on the “number of adverse outcomes” when calculating the “risk” of an event taking place, instead of focusing on the more correct “number of adverse outcomes” divided by the number of possible adverse outcomes, which is explained as the “exposure” to adverse outcomes. W. Kip Viscusi & Richard J. Zeckhauser, *The Denominator Blindness Effect: Accident Frequencies and the Misjudgment of Recklessness*, 6 AM. L. & ECON. REV. 72, 74–75 (2004).

299. See Fanto, *supra* note 61, at 736 (discussing the evolution of risk management regulatory requirements).

300. Jared Pedowitz, *Market Risk Management Walkthrough Template 6* (2007), available at <http://jenner.com/lehman/docs/ERNST%20%20YOUNG/EY-LE-LBHI-KEY PERS%201015089-1015103.pdf>.

301. See generally BASEL COMM. ON BANKING SUPERVISION, *supra* note 288, at 9–11 (discussing stress testing methodologies).

302. Dodd-Frank Act § 165(i)(1)(A).

303. *Id.* § 165(i)(2).

companies.³⁰⁴

Financial institutions should, therefore, be encouraged to internally require that all of their risky major business decisions be made based on stress tests' results relating to these type of risks, and that prior to entering into any series of risky transactions the specific transactions be tested and general stress tests be administered.³⁰⁵ Financial institutions' risk committees should focus on improving their existing stress testing abilities. Thus, in addition to using the traditional risk-management techniques, risk committees should also use reverse stress testing—stress tests that start from the assumption of business failure and then identify the circumstances where this result might take place.³⁰⁶ Therefore, unlike in regular stress tests, which test for outcomes resulting from changes in circumstances, reverse stress tests require a different kind of an analysis—understanding the circumstances that would make financial institutions' business model not feasible—a process that helps SIFIs identify possible weaknesses.³⁰⁷

Risk committee members should work on developing scenarios that cover as many different situations as possible. The tests developed must include examining the worst-case scenarios and testing the financial institutions' businesses under different burdening, implausible conditions to prepare for all possible scenarios. Additionally, war games, coupled with broader use of simulated stress tests, could be a great tool to help financial institutions analyze how they should act, given that all the financial institutions are operating in one system and interacting with each other.³⁰⁸ Similarly, vigorous stress tests conducted on the international level will help identify the weakest links of the global financial system. Consequently, financial institutions should allocate resources to focus on global crisis planning and develop better global financial war-gaming testing abilities. Simulation and war games are essentially other methods to obtain information about the potential weaknesses of financial systems, but they greatly differ from traditional, conventional quantity oriented models by enabling a number of participants to interact with a

304. *Id.*

305. Packin, *supra* note 16.

306. *See Reverse Stress Testing*, FIN. SERVS. AUTHORITY (last updated Apr. 24, 2010), http://www.fsa.gov.uk/pages/About/What/International/stress_testing/firm_s/reverse_stress_testing/index.shtml (explaining reverse stress testing).

307. *Id.*

308. War games used together with international regulations pose a much more efficient way to plan for potential unimaginable economic crises. The use of war games and multi-participant simulations can provide guidance on the risks that financial institutions face from the remainder of the highly interconnected international banking system. *See* Packin, *supra* note 16.

mathematical model.³⁰⁹ Indeed, simulation games can help obtain more meaningful results by including in the mathematical models more complex aspects of real human behavior. Mathematical algorithms cannot yet simulate human behavior as well as humans can.

Thus, wise use of scenario planning tools, such as simulation games, can help risk committees better deal with the hindsight bias and its effect on financial institutions' risk managers' performance. Moreover, using simulation games as part of scenario planning will also enable risk committees to use the services of other professionals, such as psychologists to assist them to create more scenarios to analyze, and to prepare for,³¹⁰ and refrain from being negatively affected by the hindsight bias.

CONCLUSION

Following the 2008 financial crisis, it is more evident than ever that the regulation of procedures and policies used by financial institutions to identify, monitor, and mitigate risks is extremely important to the financial markets and the economy, and should thus be carefully created.

Attempting to address this issue, the Dodd-Frank Act requires specific large financial institutions to create separate risk management committees, and includes a few basic composition requirements for these committees. The Dodd-Frank Act's requirements, however, are very basic and do not reflect the regulators' legitimate concerns regarding excessive risk-taking and its potential dire consequences. Additional regulation is necessary to regulate the way decision makers make risk-related decisions, and fight the deeply rooted biases and cultural-institutional attitudes toward excessive risk-taking. As demonstrated above, behavioral economics studies reveal certain biases and behavioral patterns, which might negatively impact risk committees' work dynamics, analyses processes and decision-making procedures. Being aware of these human tendencies and properly addressing them by "debiasing" the relevant actors through the structure of legal rules, can reduce such tendencies' dangerous or negative influences in the context of risk taking, and improve risk management oversight.

Accordingly, this Article argues that the Federal Reserve should adopt rules that include behavioral economics-based guidelines regarding risk committees' composition, obligation requirements, and working procedures. Alternatively, the Dodd-Frank Act should be amended to do

309. G. ORCUTT ET AL., MICROANALYSIS OF SOCIOECONOMIC SYSTEMS: A SIMULATION STUDY 3-281 (1961) (including simulations of activity of the nation's economy).

310. René M. Stultz, *Risk Management Failures: What Are They and When Do They Happen?* 20 J. OF APPLIED CORP. FIN. 39, 47-48 (2008).

so. Requiring risk committees to follow such guidelines will only increase the effectiveness of the risk committees' work. And in order to make sure that financial institutions do comply with such guidelines, failure to do so should be viewed as a violation that must be enforced under the securities laws. Indeed, despite the fact that traditionally risk management was an internal affairs issue, following the 2008 crisis many agree that some federal regulatory oversight on the matter is needed, which is what resulted in federal requirements such as mandating that financial institutions prepare living wills. Moreover, federal regulation of risk management is important because the threat of systemic risk during the 2008 crisis only became relevant following losses that resulted from risk management failures at major financial institutions.

This Article's suggested guidelines regarding risk management are also not subject to the criticisms that have been made of behavioral law and economics. Indeed, while it does base certain policy recommendations on behavioral economics studies, these suggestions do not attempt to predict behavior, but to help direct individuals' and groups' decision making processes in the right direction. This includes, *inter alia*, having risk committees consider multiple factors when making decisions, being presented with full information prior to finalizing financial decisions, improving group compositions, and causing group decisions to be less affected by the groups' individual members' backgrounds. And while these suggestions do apply to financial institutions' corporate governance, the corporate governance structure remains flexible enough to accommodate different personalities, while still being able to address management overconfidence, by installing various methods to counterbalance such a bias without imposing a single regulatory response.