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ARTICLES

A Behavioral Framework for Securities Risk

Tom C. W. Lin[†]

INTRODUCTION

The most difficult tasks for firms involve forecasting, managing, and disclosing risks. In the wake of the financial crisis, a serious examination of risk and risk management at publicly traded firms has occurred. After the crisis, much of the focus has been on new regulatory agencies and additional powers for existing regulators,¹ while little energy has been expended on examining and improving the efficacy of the current securities risk-disclosure framework, which was intended to serve as a bulwark for investors.² The landmark Dodd–Frank Wall Street Reform and Consumer Protection Act created the Consumer Protection Financial Bureau and expanded the powers of the Securities Exchange Commission, yet in 2,319 pages of legislation, no provision was included to en-

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1. See, e.g., Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010); Helene Cooper, *Obama Signs Overhaul of Financial System*, N.Y. TIMES, July 21, 2010, <http://www.nytimes.com/2010/07/22/business/22regulate.html>; Edward Wyatt & David M. Herszenhorn, *In Deal, New Authority Over Wall Street*, N.Y. TIMES, June 26, 2010, at A1 (“The final bill vastly expands the regulatory powers of the Federal Reserve and establishes a systemic risk council of high-ranking officials, led by the Treasury secretary, to detect potential threats to the overall financial system.”).

2. See, e.g., 15 U.S.C. § 78m (2008); see also Troy A. Paredes, *Blinded by the Light: Information Overload and Its Consequences for Securities Regulation*, 81 WASH. U. L. Q. 417, 418 (2003) (“Disclosure is designed to solve the informational asymmetries that exist between companies and investors. The logic is that by arming investors with information, mandatory disclosure promotes informed investor decision making, capital market integrity, and capital market efficiency.”).

hance risk disclosures.³ This Article seeks to fill that void by providing the first critical analysis and redesign of the existing risk-disclosure framework in light of new understandings in the interdisciplinary field of behavioral law and economics. This Article contends that enhanced risk disclosures based on the behavioral tendencies of actual investors, not theoretically rational investors, can serve as a powerful, complementary risk-management tool in the modern financial-regulatory landscape.

More specifically, this Article examines risk disclosures in the security filings of public firms, particularly those disclosures in the *Risk Factors* section of mandated periodic reports and prospectuses (hereinafter Risk Factors).⁴ In light of behavioral law and economics studies,⁵ this Article proposes an enhanced behavioral framework for securities risk that can improve risk awareness for investors and risk management for firms. In doing so, this Article challenges the conventional wisdom that securities risk management should be done primarily through increased government oversight and enforcement and advocates for a better capture of disclosure as a risk-management tool for regulators and the regulated.

In order to better capture the advantages of disclosure-based risk regulations given the behavioral tendencies of investors, this Article proposes a behavioral framework for Risk Factors built on (1) the relative likelihood of the risks and (2) the relative impact of dynamic risks. This framework makes risk disclosures more accessible and meaningful to investors and would serve as the new default for public firms. An important feature of the new default is that firms will be able to opt out of the new framework if they believe that the existing Risk Factors requirements are more appropriate. But these firms would need to explain to investors why they opted out. This new default framework would be spatially, optically, and substantively superior to the current framework for investors.⁶

3. See Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010).

4. See Item 503(c) of Regulation S-K, 17 C.F.R. § 229.503(c) (2007) [hereinafter 503(c)]. Admittedly, discussions of risks concerning an issuer and its offered securities exist in other sections of a registration statement, prospectus, annual report, or quarterly report. For example, in the Management’s Discussion and Analysis of Financial Condition and Results of Operations section or MD&A section, certain types of market risks are disclosed. Item 303(4) of Regulation S-K, 17 C.F.R. § 229.303(4) (2007). Nonetheless, the focus here is on the risk disclosures in the Risk Factors section given its prominent placement in SEC filings, its aggregated presentation format of an issuer’s risks, and the potential benefits that can be unlocked by improving it.

5. See Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1998); Richard A. Posner, *Rational Choice, Behavioral Economics, and the Law*, 50 STAN. L. REV. 1551 (1998). See generally BEHAVIORAL LAW & ECONOMICS (Cass R. Sunstein ed., 2000).

6. See *infra* Part IV.

Spatially, the proposed framework would require Risk Factors to appear as the first substantive item after the cover page or table of contents of any prospectus, quarterly report on Form 10-Q, and annual report on Form 10-K. Taking into account the heuristic of “anchoring,” the Risk Factors will serve as an anchor in the minds of investors as they read a firm’s later rosier disclosures.⁷

Optically, Risk Factors will be presented in a standardized, menu-like format based on relative likelihood and relative impact.⁸ Studies on framing effects suggest that this new menu-like framework would offer the investing public a form of risk disclosure that is easier to comprehend relative to the existing regime.⁹ Additionally, in order to better convey the dynamic nature of risk, the proposed framework would require that new or changed disclosures be underlined to make it easier for readers to identify amended disclosures.

Substantively, the new default framework would require that Risk Factors be categorized in terms of relative likelihood and impact.¹⁰ Firms that choose to adhere to the new default framework would have to classify their disclosed significant risks in terms of relative likelihood and impact based on three tiers for each metric. Additionally, in order to better ensure the timeliness of risk disclosures, existing senior executive officer certifications will include specific language attesting to the “freshness” of the disclosed Risk Factors under the proposed framework.

From the firm’s perspective, the new framework will also change a firm’s disclosure-drafting mindset. Firms under the new framework would have to consider their risks more carefully because they would have to rank their disclosures. This ranking would likely shift their draft-

7. See Susanna Kim Ripken, *Predictions, Projections, and Precautions: Conveying Cautionary Warnings in Corporate Forward-Looking Statements*, 2005 U. ILL. L. REV. 929, 986 (2005) (“Cautionary language that is sufficient in form and content to catch the market’s attention, maintain that attention, and turn it toward a serious consideration of the risks provides a much-needed check on the market’s collective inclination to accept overly rosy forward-looking information.”); *infra* Part II.B.1. See generally Peter A. Frensch, *Composition During Serial Learning: A Serial Position Effect*, 20 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY & COGNITION 423 (1994); Richard N. A. Henson, *Short-Term Memory for Serial Order: The Start-End Model*, 36 COGNITIVE PSYCHOL. 73 (1998).

8. *Infra* Part IV.B.2.

9. See Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 635 (1999) (“[W]e believe that market outcomes frequently will be heavily influenced, if not determined, by the ability of one actor to control the format of information, the presentation of choices, and, in general, the setting within which market transactions occur.”). See generally Amos Tversky & Craig R. Fox, *Weighing Risk and Uncertainty*, 102 PSYCHOL. REV. 269 (1995); Orit E. Tykocinski et al., *Message Framing, Self-Discrepancies, and Yielding to Persuasive Messages: The Motivational Significance of Psychological Situations*, 20 PERSONALITY & SOC. PSYCHOL. BULL. 107 (1994).

10. See *infra* Part IV.B.2.

ing emphasis away from a litigation-avoidance posture to an informational posture, which will create disclosures that are more meaningfully compliant. Disclosure then becomes more than a regulatory chore to be completed: it becomes a meaningful risk-management tool for firms.¹¹ Under the new framework, disclosure may also lead managers to rethink or avoid actions that will generate highly negative disclosures or riskier classifications.¹² If done appropriately, the reconfigured framework can lead to better information for investors and better risk management for firms.¹³

Structurally, the Article proceeds as follows: Part I provides an overview of the current Risk Factor framework and its underlying rationales. Part II challenges the bedrock securities law assumption of the reasonable investor being a rational person by reintroducing the reasonable investor as a predictably irrational person through a discussion of common cognitive limitations: biases, heuristics, and the framing effect, and how these affect risk assessment. Part III critiques and describes key shortcomings of the current risk-disclosure framework. Part IV proposes a behavioral framework configured around relative likelihood and relative impact of dynamic risks, and describes its key elements. Part V examines how the behavioral framework would (1) lead to a better capture of securities disclosure; (2) create a more balanced appeal to the underlying rationales for Risk Factors; (3) simplify transparency and increase financial literacy; (4) lower information costs for investors by requiring companies to enhance their publicly available risk disclosures; and (5) improve financial arbitrage. The Article closes with a brief conclusion.

11. See Merritt B. Fox, *Required Disclosure and Corporate Governance*, 62 LAW & CONTEMP. PROBS. 113, 123 (1999) (“When managers have the legal obligation to disclose certain information, they may have to gather and analyze information they would otherwise ignore.”).

12. See *id.* at 125 (“Required disclosure, therefore, will make her try harder to avoid actions that will generate negative information.”).

13. See MARC STEINBERG, CORPORATE INTERNAL AFFAIRS: A CORPORATE AND SECURITIES LAW PERSPECTIVE 29 (1983) (stating that a reconfigured framework can have a “positive role in influencing the establishment of improved standards of conduct.”); Susan Schmidt, *Bies Keynote Address*, 8 FORDHAM J. CORP. & FIN. L. 81, 91–92 (2003) (“[R]isk management framework can improve the transparency of disclosures to help investors and customers better understand the operations of the firm. . . . [E]ach entity should disclose the information its stakeholders need to best evaluate the entity’s risk profile.”). See generally William L. Cary, *Corporate Standards and Legal Rules*, 50 CALIF. L. REV. 408, 410–11 (1962); Arthur R. Pinto, *The Nature of the Capital Markets Allows a Greater Role for the Government*, 55 BROOK. L. REV. 77 (1989); Louis Lowenstein, *Corporate Governance and the Voice of the Papparazzi* (Columbia Law Sch., Working Paper No. 132, 1999), available at <http://ssrn.com/abstract=163386>.

I. THE CURRENT RISK-DISCLOSURE FRAMEWORK

The current federal securities disclosure framework was created when Congress enacted the Securities Act of 1933¹⁴ (the Securities Act) and the Securities Exchange Act of 1934¹⁵ (the Exchange Act) in response to the excesses and ruins of the Roaring Twenties and the Great Depression.¹⁶ The articulated intent of those landmark Acts was to “substitute a philosophy of full disclosure for the philosophy of *caveat emptor*.”¹⁷

The objective of the Securities Act is to ensure “full and fair disclosure of the character of securities sold in interstate and foreign commerce and through the mails, and to prevent frauds in the sale thereof.”¹⁸ The Securities Act mandates, with exceptions, the registration of any securities offerings that use any “means or instruments” in interstate commerce.¹⁹ Pursuant to its mandated registration process and its antifraud provisions, the Securities Act attempts to ensure that investors receive accurate and meaningful information about the offered securities and their issuing firms.²⁰

The Exchange Act, in turn, governs the subsequent trading of those securities in secondary markets.²¹ Like the Securities Act, the Exchange Act attempts to ensure that investors in those secondary markets receive accurate and meaningful information about the offered securities and their issuing firms.²² The Exchange Act works to achieve this purpose by requiring periodic reporting filings²³ and by imposing a broad anti-fraud provision in Section 10.²⁴

As a result of both Acts, firms are required to make timely disclosures and periodically update them for the “proper protection of the in-

14. 15 U.S.C. §§ 77a–aa (2000).

15. *Id.* §§ 78a–nn.

16. *The Investor's Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation*, U.S. SEC. & EXCH. COMM'N (SEC), <http://www.sec.gov/about/whatwedo.shtml#create> (last modified Sept. 20, 2010).

17. *Sec. & Exch. Comm'n v. Capital Gains Research Bureau, Inc.*, 375 U.S. 180, 186 (1963); *see also* Paredes, *supra* note 2.

18. *Creswell-Keith, Inc. v. Willingham*, 264 F.2d 76, 81 (8th Cir. 1959) (citing the preamble of the Securities Act of 1933, 48 Stat. 74).

19. § 77e.

20. *See id.* § 77aa (setting forth the various line-item disclosures that are required for inclusion in the disclosure statement).

21. *See id.* §§ 78a–mm.

22. *See id.* § 78m(a)(1) (requiring public companies to “keep reasonably current the information and documents required to be included in or filed with an application or registration statement,” as required by Section 12 of the Exchange Act).

23. *See id.*

24. *See* 17 C.F.R. § 240.10b-5 (2002) (outlining SEC Rule 10b-5, which is used to implement Section 10).

vestors and to insure fair dealings in the security.”²⁵ These timely disclosures consist of information such as a firm’s key contracts, employee headcounts, financial statements, and material risks. These Acts also require firms’ disclosures to be timely, topical, periodically updated, and in “plain English.”²⁶ But, in reality, disclosures regarding a firm’s risks are often stale, vague, uninformative, and in need of improvement.

A. Introduction to Risk Factors

Under the Securities Act, most firms offering securities to the public are required to file a registration statement. This filing requires the disclosure of certain risks relating to the firm and of the offered securities.²⁷ Following the Securities Offering Reform of 2005, the Exchange Act required similar Risk Factors to be included in a public firm’s annual reports on Form 10-K and quarterly reports on Form 10-Q.²⁸ In theory, Risk Factors are intended to inform investors of each firm’s deepest fears and gravest vulnerabilities.²⁹ The guidelines for such Risk Factors under the Securities Act and the Exchange Act are identical and spelled out in Item 503(c) of Regulation S-K as follows:

Risk Factors. Where appropriate, provide under the caption “Risk Factors” a discussion of the most significant factors that make the offering speculative or risky. This discussion must be concise and organized logically. Do not present risks that could apply to any issuer or any offering. Explain how the risk affects the issuer or the securities being offered. Set forth each Risk Factor under a subcaption that adequately describes the risk. . . . The Risk Factors may include, among other things, the following:

1. Your lack of an operating history;
2. Your lack of profitable operations in recent periods;

25. § 78m.

26. 17 C.F.R. § 230.421(b) (“You must present the information in a prospectus in a clear, concise and understandable manner.”); see also James A. Fanto, *We’re All Capitalists Now: The Importance, Nature, Provision and Regulation of Investor Education*, 49 CASE W. RES. L. REV. 105, 166–67 (1998) (“There is no question that the SEC’s ‘plain English’ writing principles and clarification standards, which are the foundations of good writing, will lead to, and have produced clearer, more understandable disclosure.”); Jeffrey M. McFarland, *Warming Up To Climate Change Risk Disclosure*, 14 FORDHAM J. CORP. & FIN. L. 281, 321 (2009) (“Plain English is particularly important as investors rely less on intermediaries to make their investment decisions.”).

27. See 503(c), *supra* note 4.

28. See Securities Offering Reform, 70 Fed. Reg. 44,722 (Aug. 3, 2005).

29. 503(c), *supra* note 4; see, e.g., Oliver Kay, *The Risk Business: Manchester United Reveal Their Worst Nightmares*, THE TIMES, Jan. 13, 2010, http://www.timesonline.co.uk/tol/sport/football/premier_league/manchester_united/article6985569.ece (In a proposed £500 million bond issue, Manchester United “acknowledge[d] the threats posed to the club by factors as diverse as Sir Alex Ferguson’s retirement, UEFA’s proposed ‘financial fair-play initiative,’ the boundless spending of their rivals—and even terrorism.”).

3. Your financial position;
4. Your business or proposed business; or
5. The lack of a market for your common equity securities or securities convertible into or exercisable for common equity securities.³⁰

In practice, most firms include Risk Factors in their annual reports on Form 10-K and then incorporate those same Risk Factors by reference into prospectuses and quarterly reports, unless they need to be updated.³¹ Prospectuses also often include Risk Factors relating to a specific securities offering. In terms of presentation format, many firms organize their Risk Factors into categories and then headline each Risk Factor with a caption in bold or italics, or both, followed by a few sentences of narrative. Below are two excerpted examples.

Google disclosed the following risk in its initial-public-offering preliminary prospectus in 2004:³²

Risks Related to Our Business and Industry—

We face significant competition from Microsoft and Yahoo.

We face formidable competition in every aspect of our business, and particularly from other companies that seek to connect people with information on the web and provide them with relevant advertising. Currently, we consider our primary competitors to be Microsoft and Yahoo. . . . Both Microsoft and Yahoo have more employees than we do (in Microsoft's case, currently more than 20 times as many). Microsoft also has significantly more cash resources than we do. Both of these companies also have longer operating histories and more established relationships with customers. They can use their experience and resources against us in a variety of competitive ways, including by making acquisitions, investing more aggressively in research and development and competing more aggressively for advertisers and web sites. Microsoft and Yahoo also may have a greater ability to attract and retain users than we do because they operate Internet portals with a broad range of products and services. If Microsoft or Yahoo are successful in providing similar or better web search results compared to ours or leverage their platforms to make their web search services easier to access than ours, we could experience a significant decline in user traffic. Any such decline in traffic could negatively affect our revenues.

30. 503(c), *supra* note 4.

31. See 17 C.F.R. § 230.411 (2005) (describing the practice of incorporation by reference).

32. Google Inc., Initial Public Offering (Form S-1), at 4 (Aug. 18, 2004).

Bear Stearns disclosed the following risk in its 2007 Annual Report:³³

Our businesses could be adversely affected by market fluctuations. Our businesses are materially affected by conditions in the financial markets and economic conditions generally, both in the U.S. and elsewhere around the world. In the event of a market downturn, our businesses could be adversely affected in many ways, including those described below. Our revenues are likely to decline in such circumstances and, if we were unable to reduce expenses at the same pace, our profit margins would erode. In addition, in the event of extreme market events, such as the global credit crisis, we could incur significant losses. Even in the absence of a market downturn, we are exposed to substantial risk of loss due to market volatility.

While the two cited Risk Factors offer some helpful cautionary information, they, like many Risk Factors, have much room for improvement in terms of substance and presentation.³⁴

B. Rationales for Risk Factor Disclosures

Disclosure is at the heart of the federal securities regulatory leviathan. Accurate and timely disclosure is intended to protect investors and to ensure fair dealings in securities.³⁵ In connection with that noble intention, Risk Factors are meant to serve as a “concise and organized” discussion of a firm’s risks and concerns.³⁶ Risk Factors are primarily driven by three competing, crosscutting rationales: (1) to inform, (2) to comply, and (3) to shield.

1. Information Rationale

Disclosure is designed to provide investors with meaningful, high-quality information.³⁷ Akin to a doctor’s duty to provide a patient with

33. The Bear Stearns Co. Inc., Annual Report (Form 10-K), at 15–16 (Mar. 31, 2008).

34. See Ripken, *supra* note 7 (“Effective risk disclosure can help, in part, to overcome some of the cognitive and motivational tendencies that might otherwise lead investors to rush headlong into investments without first confronting the downside potential.”).

35. See 15 U.S.C. § 78m (2008) (stating that every issuer needs to file annual reports for the protection of investors).

36. See 503(c), *supra* note 4.

37. See FRANK H. EASTERBROOK & DANIEL R. FISCHEL, *THE ECONOMIC STRUCTURE OF CORPORATE LAW* 276–314 (1991) (describing the goal of Risk Factors disclosures as being to provide information to investors); see also John C. Coffee, Jr., *Market Failure and the Economic Case for a Mandatory Disclosure System*, 70 VA. L. REV. 717 (1984); Marcel Kahan, *Games, Lies, and*

ample information to grant informed consent,³⁸ a public firm has a duty to provide an investor with ample information to make a reasonable investment decision. A combination of public and private enforcement mechanisms work to ensure that securities disclosures are of a reasonable quality.³⁹ Such information is critical to the proper functioning of the securities markets.⁴⁰ As the SEC noted on its website, “only through the steady flow of timely, comprehensive and accurate information can people make sound investment decisions.”⁴¹

While some debate exists about the essential role of securities regulations,⁴² little dispute exists about the important role of accurate, timely information in the financial markets.⁴³ This importance is especially true when the information concerns the material risks facing firms.⁴⁴

Securities Fraud, 67 N.Y.U. L. REV. 750 (1992); Paul G. Mahoney, *Mandatory Disclosure as a Solution to Agency Problems*, 62 U. CHI. L. REV. 1047 (1995).

38. See generally *ZeBarth v. Swedish Hosp. Med. Ctr.*, 81 Wash.2d 12, 23, 499 P.2d 1 (1972) (“Informed consent . . . is the name for a general principle of law that states that a physician has a duty to disclose what a reasonably prudent physician . . . in the exercise of reasonable care, would disclose to his patient as to whatever grave risks of injury may be incurred from a proposed course of treatment so that a patient, exercising ordinary care for his own welfare, and faced with a choice of undergoing the proposed treatment, or alternative treatment, or none at all, can, in reaching a decision, intelligently exercise his judgment by reasonably balancing the probable risks against the probable benefits.”).

39. See WILLIAM M. SAGE, MILBANK MEM’L FUND, ACCOUNTABILITY THROUGH INFORMATION: WHAT THE HEALTH CARE INDUSTRY CAN LEARN FROM SECURITIES REGULATION (2000) (“These statutes [the Securities Act of 1933 and the Securities Exchange Act of 1934] emphasize abundant and accurate information as the key to consumer protection, combined to varying degrees with direct regulatory oversight.”); Edward Rock, *Securities Regulation As Lobster Trap: A Credible Commitment Theory of Mandatory Disclosure*, 23 CARDOZO L. REV. 675, 686 (2002) (“[T]he public and private enforcement machinery of the securities laws and the combination of criminal and civil liability makes securities disclosures far more credible than purely contractual representations.”); Robert B. Thompson & Hillary A. Sale, *Securities Fraud as Corporate Governance: Reflections upon Federalism*, 56 VAND. L. REV. 859, 860–62 (2003) (highlighting the public and private enforcement mechanisms).

40. See Paredes, *supra* note 2 (“The logic is that by arming investors with information, mandatory disclosure promotes informed investor decision making, capital market integrity, and capital market efficiency.”); see also SAGE, *supra* note 39 (“Over the past half-century, this framework [of securities regulation] has accommodated tremendous growth in the capital markets, and has adapted to rapid changes in the mode and diversity of securities transactions.”).

41. See *The Investor’s Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation*, U.S. SEC. & EXCH. COMM’N, <http://www.sec.gov/about/whatwedo.shtml> (last modified Sept. 20, 2010); see also Paredes, *supra* note 2.

42. See, e.g., Zohar Goshen & Gideon Parchomovsky, *The Essential Role of Securities Regulation*, 55 DUKE L.J. 711, 713–30 (2006); Homer Kripke, *The SEC and Corporate Disclosure: Regulation*, in SEARCH OF A PURPOSE (1979); Donald C. Langevoort, *Theories, Assumptions, and Securities Regulation: Market Efficiency Revisited*, 140 U. PA. L. REV. 851 (1992) (discussing securities regulation and the role of the efficient-market hypothesis); Rock, *supra* note 39.

43. See Ripken, *supra* note 7, at 955 (“The purpose of providing warning disclosures is to help investors and consumers evaluate the securities and products at issue. The clear and comprehensible

2. Compliance Rationale

Compliance with the SEC's mandatory disclosure rules grants firms access to funds in the public capital markets.⁴⁵ Despite the loss of \$6.9 trillion in the financial crisis of 2008,⁴⁶ the U.S. capital markets were still worth approximately \$55 trillion at the end of 2008,⁴⁷ making it one of the largest pools of capital for firms anywhere in the history of the world. Absent proper compliance, the SEC can deny a firm access to raise funds in American capital markets or can make it extremely cumbersome for a firm to proceed in its capital-raising efforts.⁴⁸ Absent access to public monies, firms would have to incur significant transactional costs to raise capital for future investments and day-to-day operations.⁴⁹

3. Shield Rationale

Proper and robust disclosures often serve as an effective shield in securities-fraud litigation, which is a real concern for publicly traded firms. Statistics from the *Stanford Law School Securities Class Action Clearinghouse* indicate that from 1998 to 2008, an average of 236 federal class action lawsuits were filed each year.⁵⁰ Federal class actions are some of the most costly types of litigation for public firms.⁵¹ In addition

disclosure of specific and nonobvious risks allows consumers and investors to make informed choices about their future and about pursuing certain courses of action.”)

44. *See id.*

45. *See, e.g.,* SAGE, *supra* note 39.

46. *See* Renae Merle, *Wall Street's Final '08 Toll: \$6.9 Trillion Wiped Out*, WASH. POST, Jan. 1, 2009, at A1 (“After months of tortuous trading, Wall Street rang out its worst year since the Great Depression yesterday, leaving shareholders \$6.9 trillion the poorer.”).

47. *See* MCKINSEY GLOBAL INST., GLOBAL CAPITAL MARKETS: ENTERING A NEW ERA 9 (Sept. 2009) (graphing the total financial assets per major region for 2008).

48. *See* 15 U.S.C. § 781(k) (1982); *see also* U.S. SEC. & EXCH. COMM'N, NO. 34-49546, TRADING SUSPENSION: WHISPERING OAKS INTERNATIONAL, INC., D/B/A BIOCUREX, INC. (Apr. 8, 2005) (announcing the temporary suspension of trading of the securities of Whispering Oaks International, Inc., d/b/a BioCurex, Inc.).

49. In the midst of the financial crisis in 2008, many companies, most notably the Big 3 automakers, became paralyzed by the freeze in the credit markets. As access to public monies became more expensive and difficult, many of these companies faced bankruptcies, cutbacks, and temporary shutdowns. *See, e.g.,* Sharon Terlep et al., *GM's Dismal Year: \$30.9 Billion Loss*, WALL ST. J., Feb. 27, 2009, at B1; Parija B. Kavilanz, *No. 2 Mall Operator Warns of Bankruptcy*, CNNMONEY, Nov. 11, 2008, http://money.cnn.com/2008/11/11/news/companies/general_growth/index.htm.

50. *See generally* STANFORD LAW SCHOOL SECURITIES CLASS ACTION CLEARINGHOUSE, INDEX OF FILINGS, <http://securities.stanford.edu/companies.html> (last visited Oct. 9, 2010).

51. *See Securities Litigation Reform, Hearings Before the Subcomm. on Telecomm. and Finance of the House Comm. on Energy and Commerce*, 103d Cong., 2d Sess. 129-34 (1994) (testimony of Janet Cooper Alexander, Professor of Law, Stanford Law School) [hereinafter *Securities Litigation Hearings*]; *see also* Merritt B. Fox, *Why Civil Liability for Disclosure Violations When Issuers do not Trade?*, 2009 WIS. L. REV. 297, 306-07 (2009); Stephanie Plancich & Svetlana Starrykh, *Recent Trends in Securities Class Action Litigation: 2009 Mid-*

to those cases, state court actions and individual federal civil actions have also been on the rise.⁵² Studies have shown that securities litigation amounted to \$2.5 billion in legal fees annually in recent years.⁵³ While no silver bullet exists for reducing securities-litigation exposure, robust Risk Factor disclosures can refute the commonly pleaded claims by shareholders who suggest that they were not properly warned about a risk that materialized. Hence, practitioners often refer to Risk Factor disclosures as the “cheapest form of insurance.”⁵⁴

Furthermore, in reliance on the “bespeaks caution” doctrine, firms include “cautionary language in their disclosure documents with the hopes of shielding themselves from future liability.”⁵⁵ The doctrine, which has been adopted by many courts since the 1990s, holds that statements in a firm’s offering documents relating to projections and expectations are not misleading and can be neutralized by sufficiently specific cautionary language disclosing potential risks.⁵⁶ Additionally, the safe harbor provision for forward-looking statements in the Private Securities Litigation Reform Act of 1995 also incentivizes the inclusion of cautionary statements in Risk Factors and other sections of a firm’s securities filings.⁵⁷ Cautionary language must be directed at forward-

Year Update, NAT’L ECON. RES. ASSOCS. (2009), http://www.nera.com/image/Recent_Trends_Report_0709.pdfhttp://www.nera.com/image/Recent_Trends_Report_0709.pdf.

52. See *Securities Litigation Hearings*, *supra* note 51; see also Fox, *supra* note 51, at 306–07; Plancich & Starykh, *supra* note 51.

53. See, e.g., Fox, *supra* note 51, at 306 (“In recent years in the United States, the lawyers’ fees on the two sides of securities litigation have alone, in the aggregate, averaged about \$2.5 billion per year.”).

54. Robert B. Robbins & Philip L. Rothenberg, *Securities Disclosure, Writing Effective Risk Factor Disclosure in Offering Documents and Exchange Act Reports*, 19 INSIGHTS: CORP. & SEC. L. ADVISOR 1, 4 (May 2005).

55. Tom C. W. Lin, *Undressing the CEO Disclosing Private, Material Matters of Public Company Executives*, 11 U. PA. J. BUS. L. 383, 407 (2009).

56. *Id.* at 407 n.152 (collecting cases).

57. See 15 U.S.C. § 77z-2(c) (2002) (setting forth the application of safe harbor for forward-looking statements). Microsoft, for example, includes the following note in its 2008 annual report on Form 10-K about forward-looking statements:

Certain statements in this report, including estimates, projections, statements relating to our business plans, objectives and expected operating results, and the assumptions upon which those statements are based, are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements may appear throughout this report, including without limitation, the following sections: “Business,” “Management’s Discussion and Analysis,” and “Risk Factors.” These forward-looking statements generally are identified by the words “believe,” “project,” “expect,” “anticipate,” “estimate,” “intend,” “strategy,” “future,” “opportunity,” “plan,” “may,” “should,” “will,” “would,” “will be,” “will continue,” “will likely result,” and similar expressions. Forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties which may cause actual results to differ materially from the forward-looking statements. A detailed discussion of

looking statements⁵⁸ and be meaningfully specific in order to be effective.⁵⁹

Having introduced the existing framework, the next Part explores a fundamental shortcoming at the foundation of the framework: the myth of the über-rational investor.

II. THE IRRATIONAL REASONABLE INVESTOR

Beneath the core principle of disclosure in federal securities law is the assumption that the reasonable investor is the *homo economicus*, the idealized rational person from neoclassical economic theory.⁶⁰ The normative extension of this assumption is that disclosure can serve as a strong and effective regulatory tool to protect investors because, once armed with the requisite information, “investors can protect themselves against corporate abuses and mismanagement.”⁶¹ In practice, this assumption has produced a regulatory framework that emphasizes more information over less information, more disclosure over better disclosure, quantity over quality.⁶² Yet this regulatory framework ignores that real individuals and investors are not like their rational, neoclassical kin.⁶³ The rationality of real investors is bounded by biases, heuristics, and oth-

risks and uncertainties that could cause actual results and events to differ materially from such forward-looking statements is included in the section entitled “Risk Factors” (refer to Part I, Item 1A). We undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events, or otherwise.

Microsoft Corp., Annual Report (Form 10-K), at 3 (June 30, 2009).

58. Lin, *supra* note 55, at 407 n.151 (citing cases).

59. *Id.* at 407 n.154 (citing cases).

60. See, e.g., GARY S. BECKER, *THE ECONOMIC APPROACH TO HUMAN BEHAVIOR* 14 (1976) (“[A]ll human behavior can be viewed as involving participants who maximize their utility from a stable set of preferences and accumulate an optimal amount of information and other inputs in a variety of markets.”); Richard H. Thaler, *Doing Economics Without Homo Economicus*, in *ECONOMICS: HOW DO ECONOMISTS DO ECONOMICS?* 227, 230–35 (Steven G. Medema & Warren J. Samuels eds., 1996); Joan MacLeod Heminway, *Female Investors and Securities Fraud: Is the Reasonable Investor a Woman?*, 15 *WM. & MARY J. WOMEN & L.* 291, 297 (2009) (“Decisional law and the related literature support the view that the reasonable investor is a rational investor”); Peter H. Huang, *Moody Investing and the Supreme Court: Rethinking the Materiality of Information and the Reasonableness of Investors*, 13 *SUP. CT. ECON. REV.* 99, 111 (2005) (“[M]any courts appear to view the reasonable investor as referring to a normative idealized type of behavior, instead of a descriptive realistic depiction of actual behavior.”).

61. Paredes, *supra* note 2.

62. See *id.* at 418 (“Securities regulation is motivated, in large part, by the assumption that more information is better than less. Perhaps this is no surprise since the SEC’s chief regulatory tool is to require companies to disclose more.”).

63. See Jolls et al., *supra* note 5, at 1477–79 (discussing the cognitive limitations of individuals in contrast to the rational actor of neoclassical economics); see also Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 *Q.J. ECON.* 99 (1955) (same).

er cognitive limitations.⁶⁴ Investors are generally too loss averse,⁶⁵ overconfident in their skills,⁶⁶ and overoptimistic about future returns.⁶⁷

Additionally, investors are misled by framing effects and mental shortcuts.⁶⁸ For example, “in early 1999, the stock of Mannatech Inc. shot up 368% in its first two days of trading when Internet-crazed traders mistakenly thought Mannatech was a technology stock; in fact, it is a marketer of laxatives and nutritional supplements.”⁶⁹ As a result of the dissonance between the idealized rational person and the actual investor, disclosure—as a protective instrument—for investors has been severely blunted.

But real people are not entirely irrational. Their rationality, however, is imperfect and limited. Real people have bounded rationality and, in many ways, are predictably irrational.⁷⁰ Relative to designing regulations for the rational person, designing regulations for real people is difficult.

In the wake of the recent financial crisis, many neoclassical thinkers, including Alan Greenspan and Richard Posner, have questioned the practicality of the assumption of the rational person as the reasonable investor in a self-correcting über-efficient marketplace.⁷¹ These doubts and denials of the über-rational individual model do not necessarily seek a wholesale rejection of the neoclassical model, but a refinement of it. The neoclassical model, while imperfect and impractical, remains incred-

64. *Supra* note 60.

65. *See infra* Part II.A.3.

66. *See infra* Part II.A.1.

67. *See infra* Part II.A.1.

68. *See infra* Parts II.B and II.C.

69. JASON ZWEIG, *YOUR MONEY AND YOUR BRAIN: HOW THE NEW SCIENCE OF NEUROECONOMICS CAN HELP MAKE YOU RICH* 31 (2008).

70. *See* DAN ARIELY, *PREDICTABLY IRRATIONAL: THE HIDDEN FORCES THAT SHAPE OUR DECISIONS* 239 (2008) (“[W]e are really far less rational than standard economic theory assumes. Moreover, these irrational behaviors of ours are neither random nor senseless. They are systemic, and since we repeat them again and again, predictable.”); Stephen Choi & Adam Pritchard, *Behavioral Economics and the SEC*, 56 *STAN. L. REV.* 1, 2 (2003) (“These [cognitive] biases are not merely isolated quirks, rather, they are consistent, deep-rooted, and systemic behavior patterns.”); John Conlisk, *Why Bounded Rationality?*, 34 *J. ECON. LIT.* 669, 671, 682–83 (1996); Jolls et al., *supra* note 5, at 1475 (“Behavioral economics does not suggest that behavior is random or impossible to predict; rather it suggests, with economics, that behavior is systematic and can be modeled.”).

71. *See The Financial Crisis and the Role of Fed. Regulators: Hearing Before the H. Comm. on Oversight and Government Reform*, 110th Cong. 17 (2008) (statement of Alan Greenspan) (Greenspan states that he “found a flaw in the [neoclassical] model that . . . defines how the world works.”); *see also* Richard A. Posner, *How I Became a Keynesian*, *THE NEW REPUBLIC*, Sept. 23, 2009, at 34 (“We have learned since September that the present generation of economists has not figured out how the economy works.”). *See generally* RICHARD A. POSNER, *A FAILURE OF CAPITALISM: THE CRISIS OF '08 AND THE DESCENT INTO DEPRESSION* (2009).

ibly instructive. To borrow Picasso's description of art, the mythical rational person is "the lie that enables us to realize the truth."⁷²

Nonetheless, some may contend that the fallacies of real people affect only unsophisticated investors, so-called "noise traders,"⁷³ and not sophisticated investors, so-called "information traders,"⁷⁴ a close kin of the mythical rational person. Thus, securities disclosure should be drafted for sophisticated investors rather than for all investors.⁷⁵ Implicit in this contention is the belief that sophisticated investors are superior to the average individual investor, and the "smart money" of the sophisticated will protect the "dumb money" of the unsophisticated through arbitrage and market efficiency.⁷⁶ While a significant segment of investors act through more sophisticated agents, studies suggest that sophisticated investors do not necessarily outperform the average lay investor.⁷⁷ Sophisticated investors do not outperform their counterparts because they also suffer from cognitive limitations⁷⁸ and because arbitrage has severe limitations.⁷⁹ Additionally, real markets are not as elegantly efficient as their theoretical counterparts.⁸⁰ And "smart money" and "dumb money"

72. CLAUDIA E. CORNETT, *THE ARTS AS MEANING MAKERS* 190 (1998).

73. Goshen & Parchomovsky, *supra* note 42, at 714–15 ("[N]oise traders, [are those] who act irrationally, falsely believing that they possess some valuable informational advantage or superior trading skills.").

74. *Id.* at 714 ("[I]nformation traders, [are those] who specialize in gathering and analyzing general market and firm-specific information.").

75. *See id.* ("[T]he role of securities regulation is to create and promote a competitive market for information traders.").

76. *See* Choi & Pritchard, *supra* note 70, at 3 ("[T]he unsophisticated therefore can rely on market efficiency to ensure that the price he pays for a security will be 'fair.' . . . [T]he overwhelming influence of smart money actually indirectly protects the interests of the poorly informed, as evidenced by the burgeoning popularity of index funds.").

77. *See* GARY BELSKY & THOMAS GILOVICH, *WHY SMART PEOPLE MAKE BIG MONEY MISTAKES* 162 (2009) ("In fact, in most years the majority of these *professional* managers actually perform worse than stocks in general. Indeed, over periods of a decade or more, roughly 75 percent of all stock funds underperform the market."); *see also* JOHN BOGLE, *COMMON SENSE ON MUTUAL FUNDS: NEW IMPERATIVES FOR THE INTELLIGENT INVESTOR* 119 (1999) (charting the inferiority of actively managed mutual fund returns relative to the S&P 500 Index); M.P. Dunleavy, *That Rush to Beat the Market*, N.Y. TIMES, Apr. 12, 2009, at BU22 ("In fact, numerous studies have shown that, despite investor willingness to pay higher fees and expenses for actively managed mutual funds, these funds rarely beat the market in the long term."); Bill Barker, *The Performance of Mutual Funds*, THE MOTLEY FOOL, <http://www.fool.com/school/mutualfunds/performance/record.htm> (last visited Oct. 10, 2010) ("The average actively managed stock mutual fund returns approximately 2% less per year to its shareholders than the stock market returns in general.").

78. *See* Choi & Pritchard, *supra* note 70, at 2 ("There is evidence that supposedly sophisticated institutional investors—mutual funds, pension funds, insurance companies—suffer from similar biases that impair their decisions.").

79. *See infra* Part V.E.

80. *See, e.g.*, Kenneth A. Froot & Richard H. Thaler, *Foreign Exchange, in THE WINNER'S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE* 182, 185–86 (Richard Thaler ed., 1992);

are not so readily delineated in the interconnected financial marketplace.⁸¹ So the “smart money” of sophisticated investors needs protection as well.⁸² Even if a few sophisticated investors have superior skills,⁸³ recognizing and redressing the cognitive limitations of all investors lifts all boats (or yachts, as the case may be).

Ultimately, because securities regulation is based on the mythical rational person, the regulation has been driven primarily by the assumption that more information is better than less information, so emphasis is placed on more disclosure.⁸⁴ Yet relatively little emphasis is placed on how that information is used and processed by real investors.⁸⁵ Given the dissonance between the rational investor and the real investor, what good is an abundance of mandated disclosure if the information cannot be processed effectively because of cognitive limitations?⁸⁶

Thomas Russell & Richard H. Thaler, *The Relevance of Quasi Rationality in Competitive Markets*, in *QUASI RATIONAL ECONOMICS* 239, 248–49 (Richard Thaler ed., 1991).

81. See Heidi N. Moore, *The Myth of the Sophisticated Investor*, *THE BIG MONEY*, Apr. 27, 2010, <http://www.thebigmoney.com/articles/judgments/2010/04/27/myth-sophisticated-investor?page=full> (suggesting that there is no difference between sophisticated investors and ordinary investors); President Barack Obama, Remarks by the President on Wall Street Reform (Apr. 22, 2010), <http://www.whitehouse.gov/the-press-office/remarks-president-wall-street-reform> (“What happens on Wall Street has real consequences across the country, across our economy. . . . Because ultimately, there is no dividing line between Main Street and Wall Street. We will rise or we will fall together as one nation.”).

82. See Sec. & Exch. Comm’n. v. Tex. Gulf Sulphur Co., 401 F.2d 833, 849 (1968) (“The speculators and chartists of Wall and Bay Streets are also ‘reasonable’ investors entitled to the same legal protection afforded conservative traders.”); *Squawk Box* (CNBC television broadcast Apr. 19, 2010) (interviewing Barney Frank, Senator) [hereinafter Barney Frank Interview] (“[The rich and sophisticated] need protection They are not just playing with their own money, they are playing with other people’s money and the societal impact of their error can be very great, so I think it reinforces the view that no, you can’t just leave the rich to their vices.”).

83. See, e.g., BELSKY & GILOVICH, *supra* note 77, at 162–63 (“Yes, a few fund managers consistently outperform the market over time . . . [but] the fact of the matter is that most people have no reason to think that they can be more successful identifying worthy investments or timing the ups and downs of the stock and bond markets than they would be if they made their decisions by throwing darts at the financial pages.”); Malcolm Baker et al., *Can Mutual Fund Managers Pick Stocks? Evidence from Their Trades Prior to Earnings Announcements*, 26 (Nat’l Bureau of Econ. Research, Working Paper No. 10,685, 2004), available at <http://papers.nber.org/papers/w10685.pdf>.

84. See Paredes, *supra* note 2 (“Securities regulation is motivated, in large part, by the assumption that more information is better than less. Perhaps this is no surprise since the SEC’s chief regulatory tool is to require companies to disclose more.”).

85. See *id.* (“Relatively little attention is paid to how the information [that is disclosed to investors] is used—namely, how investors . . . search and process information and make decisions based on the information the federal securities laws make available.”); Jolls et al., *supra* note 5, at 1534 (“‘Provide more information’ says nothing about the way in which the information will be provided, and yet we know from much of what has been said already, as well as from empirical work by scholars such as W. Kip Viscusi, that this will matter a great deal.”).

86. See Jennifer O’Hare, *Retail Investor Remedies Under 10b-5*, 76 U. CIN. L. REV. 521, 526 (2008) (“Under this behavioral law and economics approach, individual investors, rather than behaving as rational actors, are heavily influenced by a variety of biases that can lead to bad investment decisions.”); see also JONAH LEHRER, *HOW WE DECIDE* 153–54 (2009) (discussing various errone-

Over the last few decades, behavioral economists and other academic researchers have identified common cognitive limitations of real people. This research has undermined the rational person assumption by attempting to better augment choice architectures to account for those shortcomings.⁸⁷ These limitations include (1) cognitive biases, (2) heuristics, and (3) framing effects.

A. Cognitive Biases

Cognitive bias is a type of reflexive mental processing used for “quick, low-effort analysis.”⁸⁸ Cognitive biases “are subconscious mental processes that impair rational thought-processes and ultimately lead to ‘irrational’ choices.”⁸⁹ This section discusses four types of cognitive bias: overconfidence and overoptimism, status quo bias, loss aversion and the endowment effect, and confirmation bias.

1. Overconfidence & Overoptimism

Despite facts to the contrary, individuals generally have an overabundance of confidence in their own abilities and an overabundance of optimism in their futures.⁹⁰ For example, most Americans believe that

ous sleight of mind accounting done by people); Paredes, *supra* note 2 (“[I]f the users do not process information effectively, it is not clear what good mandating disclosure does.”); W. Kip Viscusi, *Individual Rationality, Hazard Warnings, and the Foundations of Tort Law*, 48 RUTGERS L. REV. 625, 630–36 (1996).

87. See CASS R. SUNSTEIN & RICHARD H. THALER, NUDGE 33 (2009); Kent Greenfield & Peter C. Kostant, *An Experimental Test of Fairness Under Agency and Profit-Maximization Constraints (With Notes on Implications for Corporate Governance)*, 71 GEO. WASH. L. REV. 983, 984 (2003) (“BLE scholars have given scholarly weight to the common-sense insight that individuals make decisions and act in the world on many different bases, only some of which can be described as driven by the self-interested pursuit of material utility that is traditionally termed ‘economic.’”); David A. Hoffman, *The “Duty” to be a Rational Shareholder*, 90 MINN. L. REV. 537, 546 (2006) (“Behavioral law and economics (BLE) undermines the rationality assumption by using data from psychological experiments to radically alter our view of how humans make choices. BLE documents how individuals’ choice-making behavior systematically diverges from the predictions of the rational-actor model of human behavior.”); Donald C. Langevoort, *Selling Hope, Selling Risk: Some Lessons for Law from Behavioral Economics About Stockbrokers and Sophisticated Customers*, 84 CALIF. L. REV. 627, 635 (1996) (discussing that “[b]ehavioral decision theorists have generated a number of insights relating to decision making that might apply to investment behavior.”). See generally Stephen M. Bainbridge, *Mandatory Disclosure: A Behavioral Analysis*, 68 U. CIN. L. REV. 1023 (2000); Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CALIF. L. REV. 1051, 1066 (2000).

88. Andrew E. Taslitz, *Prosecutorial Preconditions to Plea Negotiations*, 23 CRIM. JUST. 14, 21 (2008).

89. Michael A. McCann, *It’s Not About the Money: The Role of Preferences, Cognitive Biases, and Heuristics Among Professional Athletes*, 71 BROOK. L. REV. 1459, 1468 (2006).

90. See David A. Armor & Shelley E. Taylor, *When Predictions Fail: The Dilemma of Unrealistic Optimism*, in HEURISTICS AND BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT 334, 334 (Thomas Gilovich et al. eds., 2002) (“One of the most robust findings in the psychology of predic-

their marriages will last, even though 50% of all marriages end in divorce or separation.⁹¹ Lottery players think that they have a reasonable chance at winning the jackpot in the face of astronomical odds to the contrary.⁹² Investors think that they have the ability to beat the market, despite statistics to the contrary.⁹³ Investors buy volatile stocks without fully accounting for the risks, believing that they have superior strategies.⁹⁴ Investors hold on to bad investments for too long, unreasonably believing that they will turn around.⁹⁵ Our overconfidence in our abilities and overoptimism in our future causes us to unduly take risks. Overconfidence and overoptimism, therefore, are root causes for stock market bubbles and crashes.⁹⁶

2. Status Quo Bias

Individuals have a strong inclination to stick to their current situations, i.e., the status quo bias.⁹⁷ Viewers stay on the same television

tion is that people's predictions tend to be optimistically biased. By a number of metrics and across a variety of domains, people have been found to assign higher probabilities to their attainment of desirable outcomes than either objective criteria or logical analysis warrants.”)

91. See ROSE M. KREIDER & JASON M. FIELDS, U.S. CENSUS BUREAU, NUMBER, TIMING, AND DURATION OF MARRIAGES AND DIVORCES: 1996 70–80 (2002) (highlighting the number of marriages that end in divorce or separation).

92. See generally Edward J. McCaffery, *Why People Play Lotteries and Why It Matters*, 1994 WIS. L. REV. 71 (1994) (discussing why people continue to play the lottery despite the fact that it is inherently difficult to actually win).

93. See, e.g., Hoffman, *supra* note 87, at 555 (“[M]ost investors mistakenly believe they can beat the market.”); Donald C. Langevoort, *Taming the Animal Spirits of the Stock Markets: A Behavioral Approach to Securities Regulation*, 97 NW. U. L. REV. 135, 146–48 (2002); Don A. Moore et al., *Positive Illusions and Forecasting Errors in Mutual Fund Investment Decisions*, 79 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 95 (1999) (showing how investors tend to overestimate the performance of their investments); Glen Whyte et al., *When Success Breeds Failure: The Role of Self-Efficacy in Escalating Commitment to a Losing Course of Action*, 18 J. ORGANIZATIONAL BEHAV. 415 (1997) (showing that having a higher view of personal self-efficacy that was built upon past success led investors to have an irrational escalation of commitment).

94. See, e.g., Hoffman, *supra* note 87, at 555 (“[M]ost investors mistakenly believe they can beat the market.”); Langevoort, *supra* note 87, at 659–60 (finding that investors who have previously made good investing decisions overvalue their successes based on a perceived level of skill that they possess); Moore et al., *supra* note 93 (demonstrating how investors tend to overestimate the performance of their investments); Ripken, *supra* note 7, at 961 (“The illusion of control causes investors to believe that positive investment outcomes are due to investors’ own skills and superior strategy, rather than good luck.”).

95. See Choi & Pritchard, *supra* note 70, at 13 (“When investors’ stocks have lost value, they may hold onto the stocks longer than warranted in hope of reversing the losses. Conversely, investors that make large investment gains may not value the gains as highly, taking on added risk with their gains . . .”).

96. See generally Robert J. Shiller, *Measuring Bubble Expectations and Investor Confidence*, 1 J. PSYCHOL. & FIN. MARKETS 49 (2000) (discussing the effect of investor confidence on market bubbles).

97. See generally William Samuelson & Richard Zeckhauser, *Status Quo Bias in Decision Making*, 1 J. RISK & UNCERTAINTY 7 (1988).

channel after watching a favorite show even though they may not be particularly interested in the next show.⁹⁸ Investors tend to stay with their initial 401(k) allocations despite changes in the market and their lives.⁹⁹ In short, the status quo bias causes us to make choices without thinking and to remain static in a changing world.

3. Loss Aversion & The Endowment Effect

Individuals are loss averse.¹⁰⁰ They do not assign static values to objects; and when they give up or lose something, “they are hurt more than they are pleased if they acquire the very same thing.”¹⁰¹ The negative impact of a loss is greater than the positive impact of an equal gain.¹⁰² In fact, studies have shown that the negative impact of a loss may be two times greater than the positive impact of gain.¹⁰³

Related to loss aversion, the endowment effect¹⁰⁴ is the idea that “people tend to value goods more when they own them than when they do not.”¹⁰⁵ A practical result of the endowment effect is the “‘offer-asking gap,’ which is the empirically observed phenomenon that people

98. See John W. Emerson & Ron Shachar, *Cast Demographics, Unobserved Segments, and Heterogeneous Switching Costs in a Television Viewing Choice Model*, 37 J. MARKETING RES. 173 (2000) (defining a new model to determine television viewers’ preferences); Srinivas K. Reddy et al., *SPOT: Scheduling Programs Optimally for Television*, 44 MGMT. SCI. 83 (1998); Roland T. Rust & Mark I. Alpert, *An Audience Flow Model of Television Viewing Choice*, 3 MARKETING SCI. 113 (1984).

99. See Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism is Not an Oxymoron*, 70 U. CHI. L. REV. 1159, 1162–66 (2003) (finding that individuals are slow to join 401(k) plans that offer more choices because they are prone to procrastination); Sheena S. Iyengar et al., *How Much Choice Is Too Much? Determinants of Individual Contributions in 401(k) Retirement Plans* (Pension Res. Council, Working Paper No. 2003-10, 2003) (discussing how people tend to stick with the 401(k) option that they already have if they are faced with multiple 401(k) options).

100. See LEHRER, *supra* note 86, at 76 (discussing the mental limitation of loss aversion). See generally Amos Tversky & Daniel Kahneman, *Loss Aversion in Riskless Choice: A Reference-Dependent Model*, 106 Q. J. ECON. 1039 (1991).

101. SUNSTEIN & THALER, *supra* note 87, at 33.

102. See Samuel Issacharoff, *The Content of Our Casebooks: Why do Cases get Litigated?*, 29 FLA. ST. U. L. REV. 1265, 1276 (2002) (“[W]e know that contrary to what economists would tell us, people value losses more than gains and that they will invest more heavily in seeking to avoid a loss than realize a gain, even of equal value.”).

103. See SUNSTEIN & THALER, *supra* note 87, at 33; Daniel Kahneman et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325 (1990) (finding that the seller of an object valued it twice as much as the potential purchaser); Richard H. Thaler, *Toward a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 44–45 (1980).

104. See Issacharoff, *supra* note 102; Duncan Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387, 401 (1981) (explaining the endowment effect using the “offer-asking problem”); Thaler, *supra* note 103, at 44 (defining “endowment effect”).

105. Russell Korobkin, *A New Social Scientific Assessment of Law and Human Behavior: The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227, 1228 (2003); see also Kahneman et al., *supra* note 103, at 1341–46 (further explaining the endowment effect).

will often demand a higher price to sell a good that they possess than they would pay for the same good if they did not possess it at present.”¹⁰⁶

Loss aversion and the endowment effect produce inertia and cause people to resist change, even if change is clearly in their favor. Homeowners overvalue their homes and do not accept reasonable offers, often to their detriment.¹⁰⁷ Investors overvalue losing positions and hold on to them for too long in order to avoid realizing losses.¹⁰⁸ One study indicated that household “investors are 32% less likely to sell a stock after a sharp fall in price than after a rise.”¹⁰⁹ Another study indicated that professional money managers “cling to their losing stocks for an average of fifty-five days, more than twice as long as they hold winners.”¹¹⁰ In short, loss aversion and the endowment effect often prevent people from doing what is in their best interests.

4. Confirmation Bias

Individuals search for, remember, and interpret information in a manner that confirms their preconceptions.¹¹¹ This cognitive limitation is known as the confirmation bias.¹¹² When individuals favor a certain selection, be it a stock pick, political candidate, or public policy,¹¹³ they

106. Korobkin, *supra* note 105. See generally Jennifer Arlen et al., *Endowment Effects Within Corporate Agency Relationships*, 31 J. LEGAL STUD. 1 (2002).

107. See Korobkin, *supra* note 105 (stating that a person might prefer a house in the city, but when the person moves from a city house to a country house, that person begins to value the country house a lot more than when that person lived in the city); see also Issacharoff, *supra* note 102, at 1276–77 (finding that people are reluctant to sell their houses in a declining market because they do not want to suffer a loss that is greater than what they perceive they should lose on the house).

108. See Choi & Pritchard, *supra* note 70, at 13; Ronald J. Gilson & Reinier Kraakman, *The Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias*, 28 IOWA J. CORP. L. 715, 732 (2003) (“If one imagines the endowment effect is at work on target shareholders, then they may require too high a price for their stock, and mistakenly let a good offer pass.”); Hoffman, *supra* note 87, at 553 (finding that people “hold ‘under water’ stocks for longer [than they should], in the hope of reversing the tide”); Issacharoff, *supra* note 102 (“[P]eople tend to hold losing stocks too long and sell winners too quickly. . .”).

109. ZWEIG, *supra* note 69, at 197. The study that Zweig discusses is Mark Grinblatt & Matti Keloharju, *What Makes Investors Trade?*, 56 J. FIN. 589, 600 (2001).

110. ZWEIG, *supra* note 69, at 197.

111. See generally Margit E. Oswald & Stefan Grosjean, *Confirmation Bias*, in COGNITIVE ILLUSIONS: A HANDBOOK ON FALLACIES AND BIASES IN THINKING, JUDGMENT AND MEMORY 79 (Rüdiger F. Pohl ed., 2004); Jane Risen & Thomas Gilovich, *Informal Logical Fallacies*, in CRITICAL THINKING IN PSYCHOLOGY 110 (Robert J. Sternberg ed., 2007).

112. See Jason Zweig, *How To Ignore the Yes-Man In Your Head*, WALL ST. J., Nov. 13, 2009, at A13 (describing a study that found “people are twice as likely to seek information that confirms what they already believe as they are to consider evidence that would challenge those beliefs.”).

113. Commentators have suggested that the confirmation bias contributed to the Iraq War because key decision makers selectively searched for and interpreted information to support their premise that Iraq posed an imminent security threat, and that they acted upon that bias, while ignoring contrary evidence. See Seymour M. Hersh, *Selective Intelligence*, THE NEW YORKER, May 12,

tend to search for and find characteristics that validate their positions and undervalue those that are contrary.¹¹⁴

Confirmation bias can lead to suboptimal decisions in the investment context. It can also influence investors to invest more money in a bad asset because they selectively see only those signs that affirm their initial selection of that asset.¹¹⁵ For example, if you believe that bank stocks are going to rise in the near term, suddenly it seems like most of the financial press is filled with similar sentiments.¹¹⁶

B. Heuristics

Heuristics are mental shortcuts or “rules of thumb” that require little information and allow individuals to make swift decisions and judgments.¹¹⁷ While heuristics can be helpful in aiding individuals to simplify complex circumstances and make timely decisions,¹¹⁸ they can also mislead individuals because mental shortcuts may prevent people from making optimal decisions. Four prominent types of heuristics are discussed here: anchoring, availability, representativeness, and herd behavior.

2003, http://www.newyorker.com/archive/2003/05/12/030512fa_fact; see also BOB WOODWARD, STATE OF DENIAL: BUSH AT WAR PART III 231 (2008) (“The controversy over the president’s reference to the discredited Iraq-Niger uranium deal was gaining steam, and fast becoming a symbol of both the failure to find WMD, and the suspicion that the president had cherry-picked intelligence to make the case for war.”).

114. See Hoffman, *supra* note 87, at 555 (stating that investors validate their beliefs through “privately acquired information” and believe that the companies they invest in are better than other companies in the same field); see also Langevoort, *supra* note 87, at 146 (“[Investors] put too much weight on their privately acquired information or inference, and calibrate poorly even when they realize the presence of some uncertainty.”).

115. See Zweig, *supra* note 112 (“[A person’s mind acts] like a compulsive yes-man [that] echoes whatever [that person wants] to believe.”).

116. See LEHRER, *supra* note 86, at 67 (“The danger of the stock market, however, is that sometimes its erratic fluctuations can actually look predictable, at least in the short term. . . . Instead of seeing randomness, we come up with imagined systems and see meaningful trends where there are only meaningless streaks.”).

117. ROY F. BAUMEISTER & BRAD J. BUSHMAN, SOCIAL PSYCHOLOGY AND HUMAN NATURE 161 (2007) (“Heuristics [are] mental shortcuts [that] provide quick estimates (though sometimes inaccurate ones) for decisions about uncertain events.”); James H. Kuklinski & Paul Quirk, *Reconsidering the Rational Public: Cognition, Heuristics, and Mass Opinion*, in ELEMENTS OF REASON: COGNITION, CHOICE, AND BOUNDS OF RATIONALITY 153 (Arthur Lupia et al. eds., 2000).

118. GERD GIGERENZER, GUT FEELINGS, 16–19 (2007) (explaining the benefits of unconscious intelligence such as “gut feelings” and heuristics).

1. Anchoring

Anchoring describes the process of interpreting information through the lens of information that was received immediately prior.¹¹⁹ Suppose you were planning to give money to a political candidate but were unsure about how much to give. Brochure A suggests a range of options: \$100, \$300, \$500, and “other amount.” Brochure B suggests a range of options: \$25, \$50, \$75, and “other amount.” Evidence shows that the more money asked for, within reason, the more you are likely to receive.¹²⁰ This result is due to “anchoring and adjustment,”¹²¹ where individuals start with some baseline reference point and then adjust in the direction they believe is appropriate.¹²²

Anchoring can mislead people because their adjustments are often insufficient or because they are influenced by irrelevant anchors.¹²³ For example, the high price of a dress in one store can affect a consumer’s valuation and willingness to pay for a music CD in an adjacent store, even though the items are completely unrelated.¹²⁴ Moreover, anchoring can cause people to make initial judgments that “prove remarkably resistant to further information, alternative modes of reasoning, and even logical or evidential challenges.”¹²⁵ In the investment context, investors may hold on to losing positions because they are anchored to either the initial purchase price or their initial favorable impression.

2. Availability

Individuals assess the likelihood of a particular risk based on how readily examples come to mind rather than the risk’s actual probability.¹²⁶ The more accessible and salient the example, the more weight that example is given.¹²⁷ “If people can easily think of relevant examples,

119. Amos Tversky & Daniel Kahneman, *Judgments of and by Representativeness*, 185 SCI. 1124, 1128 (1974).

120. See SUNSTEIN & THALER, *supra* note 87, at 24.

121. See *id.* at 23.

122. *Id.*

123. See *id.* at 23–24; see also Tversky & Kahneman, *supra* note 119, at 1128 (describing how anchors have the potential to mislead people).

124. See generally Rashmi Adaval & Kent B. Monroe, *Automatic Construction and Use of Contextual Information for Product and Price Evaluations*, 28 J. OF CONSUMER RES. 572 (2002); Joseph C. Nunes & Peter Boatwright, *Incidental Prices and Their Effect on Willingness to Pay*, 41 J. OF MARKETING RES. 457, 458 (2004) (describing studies showing that irrelevant anchors influence the amount that people are willing to pay for certain goods).

125. RICHARD NISBETT & LEE ROSS, HUMAN INFERENCE: STRATEGIES AND SHORTCOMINGS OF SOCIAL JUDGMENT 41 (James J. Jenkins et al. eds., 1980).

126. See SUNSTEIN & THALER, *supra* note 87, at 25.

127. See *id.*

they are far more likely [to be] frightened and concerned than if they cannot,” regardless of what the empirical evidence suggests.¹²⁸

The availability heuristic can lead to an availability cascade, where popular perceptions and misperceptions are trapped in a self-reinforcing cycle that results in an erroneous collective belief.¹²⁹ In the investment context, the availability heuristic can lead to bubbles and crashes, as bad information becomes amplified in a vicious informational cycle.¹³⁰

In sum, the availability heuristic can lead us to overreact to risks that are not as likely as we perceive them to be and underreact to risks that are likely but less salient.¹³¹

3. Representativeness

The representativeness heuristic makes us judge objects and events as similar based on relatively artificial, “representative” characteristics, regardless of their actual similarity.¹³² This heuristic results in individuals inferring a great deal of information “about an object, a being, a pattern of behavior, or a set of results based on their similarities to other

128. Alan Schwartz & Louis L. Wilde, *Imperfect Information in Markets for Contract Terms: The Examples of Warranties and Security Interests*, 69 VA. L. REV. 1387, 1437 (1983) (“The ‘availability heuristic’ can cause persons to make mistakes about the frequency with which events occur. One making inferential judgments by use of this heuristic tends to ignore statistical data in favor of evidence that seems germane and is ‘in awareness’—is available.”); see also Jolls et al., *supra* note 4, at 1537 (“[V]ivid and personal information will often be more effective than statistical evidence [because] of the availability heuristic, people will tend to respond to it by attaching a higher probability to the event in question.”).

129. See Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683, 713 (1999) (“[I]nsofar as people lack independent means of judging a claim’s validity, there is a danger that the beliefs generated by a cascade will be factually incorrect. Millions of individuals may develop erroneous beliefs simply by giving each other reasons to adopt and preserve them.”).

130. See, e.g., ROBERT SHILLER, *IRRATIONAL EXUBERANCE* 171–90 (2000) (analyzing the origins of stock market bubbles); Huang, *supra* note 60, at 121 (“Overall, the availability heuristic suggests that whatever piece of information becomes uppermost in the minds of an audience, whether due to primacy, recency, typicality, or some other such effect, is perceived disproportionately and comes to carry more weight than less activated pieces of information.”).

131. The availability heuristic also causes individuals to exaggerate the predictability of an event after it happens, a cognitive deficiency known as hindsight bias. This bias further stunts an individual’s ability to make optimal decisions as they rationalize previous bad decisions. See John C. Anderson et al., *Evaluation of Auditor Decisions: Hindsight Bias Effects and the Expectation Gap*, 14 J. ECON. PSYCHOL. 711, 722 (1993) (finding that peer reviewers are more likely to evaluate a particular audit procedure negatively if they are told of allegations that the auditor lacked independence); Baruch Fischhoff, *Hindsight Is Not Equal to Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty*, 1 J. EXPERIMENTAL PSYCHOL.: HUM. PERCEPTION & PERFORMANCE 288, 288 (1975); Erik Holzl et al., *Hindsight Bias in Economic Expectations: I Knew All Along What I Want to Hear*, 87 J. APPLIED PSYCHOL. 437, 440–42 (2002).

132. MICHAEL KAPLAN & ELLEN KAPLAN, *BOZO SAPIENS* 42 (2009); Tversky & Kahneman, *supra* note 119, at 1124.

such objects, beings, patterns, and sets.”¹³³ This heuristic can cause individuals to see patterns in randomness and assign similarities to things that are actually different. A gambler playing roulette may think that the table is “due for red” because the previous ten spins were all black.¹³⁴ An investor may think that a firm named Typewriters.com is a growth stock because it has “dot.com” in its name.¹³⁵ The gambler and the investor are both wrong because they have been misled by the representativeness heuristic.

4. Herd Behavior

Herd behavior is the notion that people tend to behave in a certain way because others are acting and thinking similarly.¹³⁶ In the political context, herd behavior can lead to a bandwagon effect for candidates who are perceived to be winning, even if they are not.¹³⁷ In the consumer context, herd behavior can lead to trends and fads that cause people to purchase items that they do not want or need.¹³⁸ In the investment context, herd behavior can lead to stock market bubbles.¹³⁹ This heuristic

133. BELSKY & GILOVICH, *supra* note 77, at 13.

134. NISBETT & ROSS, *supra* note 125, at 25 (stating that an example of the representativeness heuristic is the “gamblers’ fallacy” where, “[a]fter observing a long run of ‘red’ on a roulette wheel, people believe that ‘black’ is now due, because the occurrence of black would make the overall sequence of events more representative of the generating process than would the occurrence of another red.”).

135. See ZWEIG, *supra* note 69, at 8 (“In 1999, the stock of Computer Literacy Inc. shot up 33% in a single day, purely because the company changed its name to the more hip-sounding fat-brain.com. During 1998 and 1999, one group of stocks outperformed the rest of the technology industry by a scorching 63 percentage points—merely by changing their corporate names to include .com, .net, or internet.”).

136. See generally ROBERT PRECHTER, *THE WAVE PRINCIPLE OF HUMAN SOCIAL BEHAVIOR* 152–53 (1999); Abhijit V. Banerjee, *A Simple Model of Herd Behavior*, 107 Q. J. ECON. 797 (1992); Laurens Rook, *An Economic Psychological Approach to Herd Behavior*, 40 J. ECON. ISSUES 75 (2006).

137. See generally Robert K. Goidel & Todd G. Shields, *The Vanishing Marginals, the Bandwagon, and the Mass Media*, 56 J. POL. 802 (1994); Albert Mehrabian, *Effects of Poll Reports on Voter Preferences*, 28 J. APPLIED SOC. PSYCHOL. 2119 (1998); Richard Nadeau et al., *New Evidence About the Existence of a Bandwagon Effect in the Opinion Formation Process*, 14 INT’L POL. SCI. REV. 203 (1993).

138. See generally Sushil Bikhchandani et al., *A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascade*, 100 J. POL. ECON. 992 (1992); Harvey Leibenstein, *Bandwagon, Snob, and Veblen Effects in the Theory of Consumers’ Demand*, 64 Q. J. ECON. 183 (1950); Vicki G. Morvitz & Carol Pluzinski, *Do Polls Reflect Opinions or Do Opinions Reflect Polls?*, 23 J. CONSUMER RES. 53 (1996).

139. See, e.g., SHILLER, *supra* note 130, at 149–53 (describing how crowd behavior can potentially have an effect on market dynamics).

can lead people astray and cause them to make harmful, irrational decisions.¹⁴⁰

C. Framing Effects

Framing refers to the constructs of context and presentation,¹⁴¹ which can affect how people process information and make decisions. Framing, although superficial in nature, can have substantive implications on serious matters like presidential elections, consumer habits, and retirement investments. Advertisers, political strategists, and linguists have long known about the effects of framing¹⁴² The “estate tax” has become the “death tax.”¹⁴³ The Association of Trial Lawyers of America is now known as the American Association of Justice.¹⁴⁴ Gambling is now marketed as gaming.¹⁴⁵

While framing can be used for improper purposes, it can also be used to augment choice architectures, change the circumstances in which people make decisions,¹⁴⁶ and enhance the presentation and context of information, which helps people make decisions that are in their best interests.¹⁴⁷ Consider the *San Marcos Power Experiment*, where researchers used framing to increase energy conservation.¹⁴⁸ In the experiment, not only did researchers inform households about the level of their energy consumption, but also the average energy consumption levels of their

140. See generally Sanford J. Grossman & Joseph E. Stiglitz, *Information and Competitive Price Systems*, 66 AM. ECON. REV. 246 (1976); John D. Hey & Andrea Morone, *Do Markets Drive out Lemmings—or vice versa?*, 71 ECONOMICA 637 (2004).

141. See Amos Tversky & Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 SCI. 453 (1981) (describing the concept of “framing”).

142. See Hoffman, *supra* note 87, at 558 (“Perceptions of risks and benefits are subject to manipulation by corporations because of the existence of the so-called ‘framing effect.’”); Matt Bai, *The Framing Wars*, N.Y. TIMES MAG., July 15, 2005, <http://www.nytimes.com/2005/07/17/magazine/17DEMOCRATS.html> (showing how framing has been applied in the political context).

143. See Jayne W. Barnard, *Corporate Boards and the New Environmentalism*, 31 WM. & MARY ENVTL. L. & POL’Y REV. 291, 302 n.82 (2007) (“[P]oliticians often utilize phrases and evocative words to shape new attitudes about old ideas. [After such framing takes hold, the] estate tax becomes the ‘death tax.’”).

144. See Aziz Rana, *Statesman or Scribe? Legal Independence and the Problem of Democratic Citizenship*, 77 FORDHAM L. REV. 1665, 1667 (2009) (“In an effort to improve its public image, the Association of Trial Lawyers of America (ATLA) recently changed its name to the far vaguer American Association of Justice.”).

145. See James H. Frey, *Gambling: Socioeconomic Impacts and Public Policy*, 556 ANNALS 8, 10 (1998) (“Corporate marketing efforts have created an image of gambling, or ‘gaming’ as the industry now prefers, as a desirable recreational activity that is most enjoyed in settings that remind one of Disneyland rather than a backroom bar.”).

146. SUNSTEIN & THALER, *supra* note 87, at 3.

147. See *id.* at 83–102.

148. P. Wesley Schultz et al., *The Constructive, Destructive, and Reconstructive Power of Social Norms*, 18 PSYCHOL. SCI. 429 (2007).

neighbors.¹⁴⁹ The households that found themselves using relatively less energy started to use more energy, and vice versa.¹⁵⁰ Next, the researchers added happy faces, ☺, to the bills of low-energy-consumption households, and sad faces, ☹, to bills of high-consumption households. The above-average households decreased their consumption dramatically, and the below-average households continued to conserve energy.¹⁵¹ This experiment shows that the way information is framed can lead to significant changes in behavior without any real change to the information itself.¹⁵²

In the investment context, prospectuses for securities can be framed to enhance the presentation to make it more meaningful and helpful for investors.¹⁵³ For example, comparable benchmarks presented in a standardized format make it easier for investors to compare companies based on a single metric, such as credit ratings risk.

Because of these cognitive limitations, real people—real investors—are inherently not good at assessing risks.¹⁵⁴ The next section critiques the effectiveness of the current risk-disclosure framework in light of the cognitive limitations discussed here.

III. CRITIQUES & SHORTCOMINGS

The current disclosure framework is an unfinished and imperfect one. It needs constant review and change to account for the evolving marketplace.¹⁵⁵ The recent financial crisis exposed many of the unaddressed risks of certain financial instruments and the financial system.¹⁵⁶

149. *Id.* at 430–31.

150. *Id.* at 432–33.

151. *Id.*

152. *Id.*

153. See *infra* Part III for a critique of the current risk-disclosure framework.

154. See Hoffman, *supra* note 87, at 549 (“Individuals are exceptionally poor at evaluating risk and uncertainty.”); Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, in CHOICES, VALUES, AND FRAMES 17, 20 (Daniel Kahneman & Amos Tversky eds., 2000); Cass R. Sunstein, *The Laws of Fear*, 115 HARV. L. REV. 1119, 1128–29 (2002) (reviewing PAUL SLOVIC, *THE PERCEPTION OF RISK* (2000)) (“[M]any people appear to believe that risk is an ‘all or nothing’ matter; something is either safe or dangerous, and there is no middle ground.”); Viscusi, *supra* note 86, at 630–36.

155. See Rock, *supra* note 39, at 686. See generally Lowenstein, *supra* note 13.

156. President Barack Obama, Remarks by the President on 21st Century Financial Regulatory Reform (June 17, 2009) (“In recent years, financial innovators, seeking an edge in the marketplace, produced a huge variety of new and complex financial instruments. And these products, such as asset-based securities, were designed to spread risk, but unfortunately ended up concentrating risk.”); Ben S. Bernanke, Chairman, Fed. Reserve, Lessons of the Financial Crisis for Banking Su-

Over the last few decades, public firms, financial instruments, and the financial system have grown more complex, and the investor base has grown larger and less sophisticated, yet the system has not reacted to these changes in a timely manner.¹⁵⁷ This problem is exacerbated by the fact that these disclosure rules were founded upon economic theories that new research suggests are not descriptively accurate of actual market behavior.¹⁵⁸

Building upon the discussion about investors' cognitive limitations, this Part discusses four key shortcomings and critiques of the current framework. The framework is (1) nebulous in presentation, (2) silent on likelihood and impact, (3) opaque on risk dynamics, and (4) vague in substance.

A. *Nebulous in Presentation*

The current Risk Factors framework lacks clarity in its presentation format. While Regulation S-K requires that Risk Factors be "concise and organized logically,"¹⁵⁹ Risk Factors often lack organizational uniformity and are uninformative on key aspects of disclosed risks. The current presentation lacks a uniform standard and frequently amounts to a "data

pervision (May 7, 2009) ("The crisis exposed the inadequacy of the risk-management systems of many financial institutions."); Timothy F. Geithner, U.S. Sec'y of the Treasury, *The Current Financial Challenges: Policy and Regulatory Implications* (Mar. 6, 2008) ("The crisis exposed a range of weaknesses in risk management practices within financial institutions in the United States and throughout the world.").

157. See SHILLER, *supra* note 130, at 25–28 (discussing the impact of the post-World War II baby boom on the stock market); Geithner, *supra* note 156 ("The typical arsenal of risk management tools relies, by necessity, on history and experience, and as a result has only limited value in assessing the scale of potential future losses. These limitations were particularly damaging in a period in which significant innovation in financial instruments and market structure was coupled with relatively stable macroeconomic and financial conditions. Uncertainty about the future, and the greater complexity of leveraged structured products, created a dense fog around estimates of potential loss, making institutions and markets more vulnerable to an adverse surprise when conditions changed, and making it harder to manage the many principal agent problems inherent in the financial business."); Lin, *supra* note 55, at 389–92 (describing the system's lack of reaction to the complexities of the evolving financial system).

158. See Ken Gregory & Steve Savage, *Why We Prefer Funds*, KPLINGER'S PERS. FIN. MAG., Aug. 2002, at 59 ("Behavioral Finance demonstrates that all investors are hard-wired in certain ways that greatly increase the probability they will make poor investment decisions."); O'Hare, *supra* note 86, at 526 ("Behavioral finance scholars have shown that retail investors who do trade behave irrationally."). See generally ADVANCES IN BEHAVIORAL FINANCE VOLUME II (Richard H. Thaler ed. 2005); INTRODUCTION TO BEHAVIORAL FINANCE (2000); ANDREI SHLEIFER, INEFFICIENT MARKETS: AN INTRODUCTION TO BEHAVIORAL FINANCE (Richard H. Thaler ed. 1993); SHILLER, *supra* note 130; Burton G. Malkiel, *The Efficient Market Hypothesis and Its Critics*, 17 J. ECON. PERSPECTIVES 59 (2003).

159. 503(c), *supra* note 4.

dump.”¹⁶⁰ While some firms attempt to organize their Risk Factors by categories, those categories are ad hoc because the rules do not encourage or require specific categories. Alternatively, some firms simply enumerate their risks without any rhyme or reason.¹⁶¹

Presentation frames matter a great deal in affecting how we assess risks and make decisions.¹⁶² Numerous studies have shown the impact of framing effects on how we invest, consume, and vote.¹⁶³ In the securities context, many commentators, including SEC Commissioner Troy Paredes, have suggested that greater emphasis needs to be placed on the presentation and end-user utility of securities disclosure.¹⁶⁴ For example, uniformity in disclosure formats makes it easier for investors to compare companies based on one or more benchmarks.¹⁶⁵

B. Silent on Likelihood and Impact

The current Risk Factors framework is silent on two key issues regarding articulated risks: relative likelihood and relative impact. Relative likelihood compares the probability of an articulated risk to other risks. Relative impact compares the severity of the impact when an arti-

160. Michael R. Siebecker, *Trust & Transparency: Promoting Efficient Corporate Disclosure Through Fiduciary-Based Disclosure*, 87 WASH. U. L. REV. 115, 132 (2009) (“It is no secret to corporations that producing enormous amounts of information in response to consumer and investor demands can undermine adequate understanding. As one multi-national corporation recently reported, ‘you can’t call it transparency if you simply spew information out into the marketplace, or unleash what is effectively a data dump on your customers.’”); see Rachel Emma Silverman, *GE to Change Its Practices of Disclosure*, WALL ST. J., Feb. 20, 2002, at A3 (giving an example of how a company can have ineffective disclosure). See generally Paredes, *supra* note 2.

161. See Susanna K. Ripken, *The Dangers and Drawbacks of the Disclosure Antidote: Toward a More Substantive Approach to Securities Regulation*, 58 BAYLOR L. REV. 139, 146–47 (2006) (“[D]isclosure that is too long or complex to be comprehensible to the average person floods the individual with too much nonessential data and overloads the person with information that inhibits optimal decision-making.”).

162. See, e.g., Jolls et al., *supra* note 5, at 1533–34 (discussing the substantive implications of presentation); Viscusi, *supra* note 86, at 630–36.

163. See Christopher P. Puto, *The Framing of Buying Decisions*, 14 J. CONSUMER RES. 301 (1987) (documenting that buyers show strong framing effects because they base their price targets in large part on gain or loss framing; their willingness to take on risk varies greatly, depending on the experimental frame); see also Joseph N. Cappella & Kathleen Hall Jamieson, *News Frames, Political Cynicism, and Media Cynicism*, 546 ANNALS AM. ACAD. POL. & SOC. SCI. 71, 75–82 (1996) (citing studies relating to framing effects).

164. Paredes, *supra* note 2, at 418 (“Relatively little attention is paid to how the information is used—namely, how investors and securities market professionals search and process information and make decisions based on the information the federal securities laws make available. In short, if the users do not process information effectively, it is not clear what good mandating disclosure does.”).

165. See, e.g., THOMAS TULLIS & WILLIAM ALBERT, *MEASURING THE USER EXPERIENCE* 8–10 (2008) (describing the value of comparative metrics for users). See generally YOUNGME MOON, *DIFFERENT: ESCAPING THE COMPETITIVE HERD* (2010) (explaining the importance of comparative metrics as a means for product differentiation).

culated risk materializes compared to other risks. This silence makes investing difficult for individuals to properly assess a firm's risk profile, which often exaggerates cognitive implications that, in turn, lead investors to underestimate (or overestimate) a firm's risk exposure. Current risk-disclosure practices result in an enumeration of foreseeable risks without conveying the relative likelihood and impact of those risks. The omission of likelihood and impact can artificially inflate (or deflate) a firm's market capitalization, as investors cannot properly value the firm.¹⁶⁶

This inability to properly evaluate a firm and its risks has played itself out in recent years. For example, Bear Stearns included the following Risk Factor in its 2007 annual report: "Liquidity risk could impair our ability to fund operations and jeopardize our financial condition."¹⁶⁷ How likely was this impairment? How serious was this impairment? Was this the type of impairment that could cause the firm to shut its doors? (This impairment did occur in 2008 and, in fact, caused the federal government to force Bear Stearns to sell itself to J.P. Morgan.)¹⁶⁸

Similarly, Lehman Brothers stated in its 2007 Risk Factors section:

To the extent that a liquidity event lasts for more than one year, or our expectations concerning the market conditions that exist during a liquidity event, or our access to funds, prove to be inaccurate . . . our ability to repay maturing indebtedness and fund operations could be significantly impaired.¹⁶⁹

Again, investors could have greatly benefited from a good-faith assessment by Lehman Brothers of the likelihood and severity of this type of event. In September 2008, this risk occurred in dramatic fashion: Lehman was forced to file for bankruptcy, and the financial system was pushed to the brink of collapse.¹⁷⁰

166. See S.P. Kothari et al., *Do Managers Withhold Bad News?* (Mass. Inst. of Tech., Sloan Sch. Mgmt., Working Paper No. 4556-05, 2005), available at <http://ssrn.com/abstract=803865> (suggesting that "management, on average, delays the release of bad news to investors," but immediately releases good news).

167. Bear Stearns Inc., Annual Report (Form 10-K), at 17 (Jan. 29, 2008) [hereinafter 2007 Bear Stearns Annual Report].

168. See WILLIAM D. COHAN, *HOUSE OF CARDS: A TALE OF HUBRIS AND WRETCHED EXCESS ON WALL STREET* 89-110 (2009) (chronicling the frantic purchase of Bear Stearns by J.P. Morgan with the support of the federal government).

169. Lehman Bros. Inc., Annual Report (Form 10-K), at 16 (Jan. 29, 2008) [hereinafter 2007 Lehman Bros. Annual Report].

170. Ben White & Jenny Anderson, *A Frantic Weekend That Wall Street Won't Forget*, N.Y. TIMES, Sept. 15, 2008, at C1 (describing the weekend Lehman Brothers filed for bankruptcy and the resulting panic on Wall Street).

Merck, the giant pharmaceutical manufacturer, disclosed in the Risk Factors section of its 2009 annual report:

Pharmaceutical products can develop unexpected safety or efficacy concerns.

Unexpected safety or efficacy concerns can arise with respect to marketed products, whether or not scientifically justified, leading to product recalls, withdrawals, or declining sales, as well as product liability, consumer fraud and/or other claims.¹⁷¹

Given Merck's troubles with the drug Vioxx, a painkiller that allegedly posed an increased danger for heart attacks and strokes,¹⁷² investors could have benefited from a more detailed assessment of this type of risk. For example, Merck could disclose whether one or more of its blockbuster drugs were specifically raising safety or efficacy concerns.

Investors' understandings of a firm's risk exposure would be substantially enhanced if a firm were to assess and articulate its risk profile in terms of relative likelihood.

Additionally, current risk-disclosure practices result in an enumeration of foreseeable risks without articulating the relative severity of the impact if an articulated risk materializes. Firms often couch the potential impact of a risk materializing with terms such as "material," "significant," or "meaningful," without fully explaining the consequences with greater specificity. For example:

171. Merck & Co., Inc., Annual Report (Form 10-K), at 30 (Mar. 1, 2010) [hereinafter 2009 Merck Annual Report].

172. See Alex Berenson, *Plaintiffs Find Payday Elusive in Vioxx Cases*, N.Y. TIMES, Aug. 21, 2007, at A1; Natasha Singer, *Trial Puts Spotlight on Merck*, N.Y. TIMES, May 14, 2009, at B1; Alex Berenson et al., *Despite Warnings, Drug Giant Took Long Path to Vioxx Recall*, N.Y. TIMES, Nov. 14, 2004, <http://www.nytimes.com/2004/11/14/business/14merck.html>.

We [Tesla Motors] began production of our Tesla Roadster only in 2008, and our second planned vehicle, our Model S, is not expected to be in production until 2012, requires *significant* investment prior to commercial introduction, and may never be successfully developed or commercially successful. There can be no assurance . . . that our future models, including the Model S, will become commercially viable.¹⁷³

Our [Bear Stearns's] businesses could be adversely affected by market fluctuations. Our businesses are *materially* affected by conditions in the financial markets and economic conditions generally, both in the U.S. and elsewhere.¹⁷⁴

Not all material risks have the same impact. Although it is difficult to project the consequences of future events, firms are in the best position to analyze and articulate these risks with greater specificity.

Absent enhanced Risk Factors, resource-constrained investors, with their cognitive limitations, try (without great success) to assess for themselves the likelihood and severity of various risks of public firms.¹⁷⁵ Given their resources and access to information, firms are often in a much better position than the investing public to make a good faith assessment of the relative likelihood and severity of their risks. Where a firm is unable to make a good faith assessment, it could simply inform investors that it is unable to do so, and such uncertainty can be priced into a firm's valuation.

C. Opaque on Risk Dynamics

The current Risk Factor framework is also opaque regarding changes to a firm's risk exposure. Firms generally update their Risk Factors on an annual basis, often replicating disclosures from the previous year without making any meaningful changes. Yet, when changes occur, those changes are not readily apparent to investors. Such changes are

173. Tesla Motor, Inc., Initial Public Offering (Form S-1), at 19 (June 29, 2010) [hereinafter 2009 Tesla Initial Public Offering] (emphasis added).

174. 2007 Bear Stearns Annual Report, *supra* note 167, at 2 (emphasis added).

175. See BARUCH FISCHHOFF ET AL., ACCEPTABLE RISK (1981) (finding that people overestimate low-probability risks while they underestimate high-probability risks); Chris Guthrie, *A New Social Scientific Assessment of Law and Human Behavior: Prospect Theory, Risk Preference, and the Law*, 97 NW. U. L. REV. 1115, 1119 (2003) ("People 'overweigh outcomes that are considered certain, relative to outcomes which are merely probable.'") (quoting Kahneman & Tversky, *supra* note 100, at 265).

often a reflection of new information or new assessments of prior information. In either instance, changes are the result of meaningful recalibrations of a firm's risk exposure. The failure to highlight these changes makes it harder for investors to examine the change in a firm's risk exposure. Investors would only be aware of the new or changed disclosures if they manually compared one periodic filing to a prior version. This process is incredibly cumbersome and performed by few investors.

Moreover, the confirmation bias, the status quo bias, and the anchoring heuristic can make it difficult for investors to reassess a firm's risk profile after previously having a favorable initial impression of a firm.¹⁷⁶ Therefore, changes in a firm's risk profile need to be highlighted so that they are more salient to the investor.¹⁷⁷

D. Vague in Substance

The SEC requires Risk Factors to be drafted in "plain English,"¹⁷⁸ but much of the disclosure in the public filings cannot be properly described using the adjectives plain and English.¹⁷⁹ Disclosures are overly general, vague in content, and lacking in meaningful detail for the read-

176. See Ripken, *supra* note 7, at 968 ("[T]he confirmation bias and the anchoring heuristic may lead investors who have already formed a favorable impression of a company to interpret managers' cautionary language in a manner that conforms to investors' own previously held optimistic views.").

177. See *id.* ("Risk Factor warnings that are not particularly salient or given primary consideration may not enter into investors' initial risk perceptions at all.").

178. 503(c), *supra* note 4.

179. See McFarland, *supra* note 26, at 321–22 ("Plain English is particularly important as investors rely less on intermediaries to make their investment decisions. . . . Applying the Plain English rules to . . . disclosure would help alleviate the potential for investors to misunderstand the disclosure, or simply tune it out because of information overload."); Ripken, *supra* note 161, at 186 ("[D]isclosure documents today are written by corporate lawyers in formalized language to protect the corporation from liability rather than to provide the investor with meaningful information. The document is, consequently, often presented in technical language and unreadable 'legalese.'") (quoting Alan B. Levenson, *The Role of the SEC as a Consumer Protection Agency*, 27 BUS. LAW. 61, 68 (1971) (citing H.R. REP. NO. 73–85, at 2 (1933), reprinted in 2 LEGISLATIVE HISTORY OF THE SECURITIES ACT OF 1933 AND SECURITIES EXCHANGE ACT OF 1934 (J.S. Ellenberger & Ellen P. Mahar eds., 1973))); John Schwartz, *Transparency, Lost in the Fog*, N.Y. TIMES, Apr. 8, 2007, at C1 (discussing the lack of understandable disclosure regarding executive compensation).

er.¹⁸⁰ These shortcomings result in disclosures that often fail to properly convey, with ample specificity, the gravity of a firm's risks.¹⁸¹

Vague risk disclosures can amplify and play into certain investors' cognitive limitations. The lack of specificity makes it more likely that existing investors of a firm interpret the disclosure to confirm their initial positive perceptions about a firm.¹⁸²

The current risk-disclosure framework has serious shortcomings, many of which are exacerbated by the cognitive limitations of real investors. The next Part addresses those shortcomings by proposing a behavioral framework for securities risk disclosure.

IV. A BEHAVIORAL FRAMEWORK: KEY ELEMENTS

A. A New Default

Under the proposed framework, the SEC would amend existing rules to set a new default framework for Risk Factors. This new framework will work within the current disclosure apparatus to minimize

180. See, e.g., Donald C. Langevoort, *Organized Illusions: A Behavioral Theory of Why Corporations Mislead Stock Market Investors (and Cause Other Social Harms)*, 146 U. PA. L. REV. 101, 106–09 (1997) (describing some of the problems with the current disclosure system); Alan R. Palmiter, *Toward Disclosure Choice in Securities Offerings*, 1999 COLUM. BUS. L. REV. 1, 26 (1999) (“[S]tudies indicate that even under mandatory constraints managers systematically avoid releasing unfavorable forecasts . . .”). See generally Merritt B. Fox et al., *Law, Share Price Accuracy, and Economic Performance: The New Evidence*, 102 MICH. L. REV. 331 (2003).

181. Consider the vagueness of the following examples from Bear Stearns and Lehman Brothers, two firms that played roles in the recent financial crisis, and Eli Lilly and Company, a major pharmaceutical company:

- “Our risk management policies and procedures may leave us exposed to unidentified or unanticipated risk.” 2007 Bear Stearns Annual Report, *supra* note 167, at 16.
- “As a global investment bank, risk is an inherent part of our business. Our businesses are materially affected by conditions in the financial markets and economic conditions generally around the world.” 2007 Lehman Bros. Annual Report, *supra* note 169, at 13.
- “We face many product liability claims today, and future claims will be largely self-insured. We are subject to a substantial number of product liability claims involving primarily Zyprexa, diethylstilbestrol (‘DES’), thimerosal, and Byetta, and because of the nature of pharmaceutical products, it is possible that we could become subject to large numbers of product liability claims for other products in the future.” Eli Lilly & Co., Annual Report (Form 10-K), at 13 (Feb. 22, 2010).

182. See Langevoort, *supra* note 42, at 639–40 (finding that investors who have previously made good investing decisions overvalue their successes based on a perceived level of skill that they possess); Philip E. Tetlock, *Theory-Driven Reasoning About Plausible Pasts and Probable Futures in World Politics: Are We Prisoners of Our Preconceptions?*, 43 AM. J. POL. SCI. 335 (1999) (showing that individuals whose predictions wind up materializing tend to take credit for being right, and as a result, exude confidence in their abilities); Whyte et al., *supra* note 93 (showing that investors with a higher view of self-efficacy built upon past success irrationally escalate commitment).

adoption costs for public firms. An important feature of the proposed framework is that firms will be able to opt out if they believe that the existing Risk Factor requirements are more appropriate for them. Firms that opt out, however, would have to disclose why they are unable or unwilling to comply with the new, enhanced rules.¹⁸³ This feature is a departure from the one-size-fits-all mandates of most securities regulation.¹⁸⁴ Companies in various industries and of various sophistication have different levels of certainty and knowledge concerning their risk exposure. An emerging biotechnology firm with one potential marketable product may not have the same grasp of its risks as a bookseller like Barnes & Noble. A path-breaking startup electric-car manufacturer may not have the same handle on its risks as the well-established Ford Motor Company.¹⁸⁵

Further, numerous behavioral studies suggest that defaults with opt-out provisions tend to result in more compliance than defaults with opt-in provisions.¹⁸⁶ These studies suggest that compliance by many firms may, in the long run, lead to a “race to the top,” leaving firms that opt out in the minority.¹⁸⁷ This could cause harm to the reputations of firms who refuse to, or are unable to comply with, the new more investor-friendly risk-disclosure rules.¹⁸⁸ Alternatively, the opt-out provision can serve as

183. See Troy A. Paredes, *On the Decision to Regulate Hedge Funds: The SEC's Regulatory Philosophy, Style, and Mission*, 2006 U. ILL. L. REV. 975, 1026 (2006) (“The virtue of default rules is that they allow parties to contract around the law to order their affairs to fit their particular needs and preferences. The ability to opt out also provides an important safety valve against the risk of overregulation.”).

184. See *id.* (“When the SEC chooses to regulate, instead of imposing mandatory one-size-fits-all requirements as it almost always does, the Commission should increasingly consider default rules.”).

185. See, e.g., 2009 Tesla Initial Public Offering, *supra* note 173, at 13 (discussing the plethora of risks faced by a modern electric car company).

186. See, e.g., SUNSTEIN & THALER, *supra* note 87, at 35 (“In many contexts defaults have some extra nudging power because consumers may feel, rightly or wrongly, that default options come with an implicit endorsement from the default setter [the SEC].”); see also Steven Bellman et al., *To Opt-In or Opt-Out? It Depends on the Question*, 44 COMM. OF THE ACM 25 (2001) (finding that in regards to wireless-access point configuration, default settings dominated user behavior); Eric J. Johnson & Daniel Goldstein, *Do Defaults Save Lives?*, 302 SCI. 1338 (2003) (showing how default rules lead to wide compliance in the area of organ donation).

187. See Edward K. Cheng, *Structural Laws and the Puzzle of Regulating Behavior*, 100 NW. U. L. REV. 655, 665 (2006) (“Higher compliance rates lead to a virtuous cycle. Over time, the structurally preferred default behaviors give rise to accompanying social norms, further enforcing the desired conduct.”); see also Choi & Pritchard, *supra* note 70, at 44–46 (showing there will be a presumption of doing something that leads to compliance because the alternative is to drive investors away in the context of regulation).

188. See Cheng, *supra* note 187, at 665; see also Choi & Pritchard, *supra* note 70, at 44–46.

a pricing signal and risk indicator to investors about management's grasp of a firm's risks.¹⁸⁹

B. New Risk Framing

1. A New Anchor

Under the behavioral framework, Regulation S-K will be amended to make Risk Factors the "anchor." Risk Factors will be the first substantive item after the cover page or table of contents of any prospectus, quarterly report on Form 10-Q, or annual report on Form 10-K. Taking into account the heuristic of "anchoring," the Risk Factors¹⁹⁰ will serve as an anchor in the minds of investors as they read a firm's later rosier disclosures.¹⁹¹

This new placement will also help confront the overoptimism bias.¹⁹² Moreover, the new framework would require firms to restate in full their latest Risk Factors immediately after the cover page or table of contents when they incorporate their Risk Factors in a prospectus by reference to their annual and quarterly reports. Restating this information allows it to be readily viewed.¹⁹³ Absent this restatement, investors need to search for the Risk Factors in other filings, which discourages investors from becoming fully educated and leaves them with a more positive perception of a firm.

2. New Risk Taxonomy

Whereas the current rules require only that Risk Factors "be concise and organized logically," the new framework would specify how to accomplish this goal. It would require Risk Factors to be organized in terms of relative likelihood and relative impact.¹⁹⁴ The framework would

189. See, e.g., Choi & Pritchard, *supra* note 70, at 3 ("[I]f companies do not give credible assurances that they will disclose truthfully the information that investors rely upon to value securities, those companies will pay substantial risk premia (thereby compensating investors for the risk of fraud) or be unable to sell their securities altogether.").

190. See discussion *supra* Part II.B.1.

191. See also Ripken, *supra* note 7, at 986 ("Cautionary language that is sufficient in form and content to catch the market's attention, maintain that attention, and turn it toward a serious consideration of the risks provides a much-needed check on the market's collective inclination to accept overly rosy forward-looking information."). See generally Henson, *supra* note 7; Frensch, *supra* note 7.

192. See discussion *supra* Part II.A.1.

193. See Hoffman, *supra* note 87, at 557 (according to behavioral law and economics research, "new information is processed against the background of what came before").

194. 503(c), *supra* note 4.

be based on three tiers for each metric.¹⁹⁵ It would offer the investing public a more comprehensible form of disclosure by disclosing risks in a more salient, menu-like framework with accessible comparative metrics.¹⁹⁶

Relative likelihood would be categorized based on levels corresponding to each risk's probable occurrence: *Level A: Very Likely*, *Level B: Likely*, and *Level C: Unlikely*. This type of classification is similar to that used by meteorologists to measure typhoon conditions of readiness, where "Condition 1" indicates that destructive winds are probable within twelve hours, and each additional level indicates a longer period of time until impact.¹⁹⁷

Relative impact would be categorized based on the relative seriousness of the consequences should an articulated risk materialize. A Category 1 risk, for example, would be a risk that would have a *significant effect* on the firm if it were to materialize; a Category 2 risk would have a *material effect* on the firm; and a Category 3 risk would have a *catastrophic effect* on the firm. This type of classification is akin to the classification used by meteorologists to warn people about a hurricane's intensity, where a Category 1 hurricane is expected to have damaging winds and a Category 5 hurricane is expected to cause catastrophic damage.¹⁹⁸

For example, under the current framework, a risk factor would be entitled "Credit Risk." Under the behavioral framework, the same factor would be entitled "A1—Credit Risk." This designation means that the credit risk is *very likely* to occur and will have a *significant effect* on the firm.

195. See *Basic Inc. v. Levinson*, 485 U.S. 224, 238 (1988) (quoting *S.E.C. v. Tex. Gulf Sulphur Co.*, 401 F.2d 833, 849 (2d Cir. 1968) ("[M]ateriality 'will depend at any given time upon a balancing of both the indicated probability that the event will occur and the anticipated magnitude of the event in light of the totality of the company activity.'")); *United States v. Carroll Towing Co.*, 159 F.2d 169, 173–74 (2d Cir. 1947).

196. Many state securities regulators already require Risk Factors for small companies that use the Small Co. Offering Registration Form (Form U-7) to "[l]ist in the order of importance the factors that the Company considers to be the most significant risks to an investor." See SMALL CO. OFFERINGS REGISTRATION FORM (FORM U-7), NASAA Rep. (CCH) P 5057, at 5197 (Dec. 1999); Hanson & Kysar, *supra* note 9, at 635 ("[W]e believe that market outcomes frequently will be heavily influenced, if not determined, by the ability of one actor to control the format of information, the presentation of choices, and, in general, the setting within which market transactions occur."). See generally Tversky & Fox, *supra* note 9; Tykocinski et al., *supra* note 9.

197. See Dave Puckett, Responder's Forum: *Typhoon Conditions Warrant Preparation* (Apr. 13, 2005), http://www.navy.mil/search/displaybbs.asp?bbs_id=1326 (defining the Tropical Cyclone Conditions of Readiness).

198. NAT'L OCEANIC & ATMOSPHERIC ADMIN., NAT'L WEATHER SERV., NAT'L HURRICANE CTR., THE SAFFIR-SIMPSON HURRICANE SCALE, <http://www.nhc.noaa.gov/aboutsshs.shtml> (last modified Feb. 17, 2010).

Below is an illustration that compares Risk Factors under the existing and behavioral frameworks:

Existing Framework	Behavioral Framework
<i>Credit Risk</i> <hr/> <hr/>	<i>A1—Credit Risk</i> <hr/> <hr/>
<i>Key Persons Risk</i> <hr/> <hr/>	<i>B1—Counterparty Risk</i> <hr/> <hr/>
<i>Counterparty Risk</i> <hr/> <hr/>	<i>C3—Key Persons Risk</i> <hr/> <hr/>

The new framework makes Risk Factors more meaningful to the investing public in three ways. First, investors can readily see which risks are most likely to occur and are most serious. Many studies have suggested that people have difficulty assessing probability and impact.¹⁹⁹ Therefore, disclosures that state the firm's assessments increase the meaningfulness of the disclosures.

Second, the behavioral framework allows investors to better calibrate their investment calculus. For example, an investor is interested in buying stock in Firm A because of its high credit ratings and senior management. That investor would be able to assess the likelihood and seriousness of risks regarding those key issues of concern, thereby allowing the investor to make a more informed investment decision.

Third, the behavioral framework allows investors to better compare the risk profiles of similar firms. For example, if an investor is debating between investing in Bank A or Bank B, that investor can readily compare the risk profiles of both banks before making an investment decision. The tiered, menu-like format creates inherent, accessible comparative metrics for investors. Additionally, recent developments at the SEC regarding disclosures are similarly driven towards giving ordinary investors enhanced information.²⁰⁰

199. See, e.g., Guthrie, *supra* note 175; FISCHHOFF ET AL., *supra* note 175 (finding that people overestimate low probability risks while underestimate high probability risks). See generally Kahneman & Tversky, *supra* note 100.

200. See U.S. SEC. & EXCH. COMM'N., 21ST CENTURY DISCLOSURE INITIATIVE, TOWARD GREATER TRANSPARENCY: MODERNIZING THE SECURITIES AND EXCHANGE COMMISSION'S DISCLOSURE SYSTEM 3 (2009), <http://www.sec.gov/spotlight/disclosureinitiative/report.pdf> [herei-

Although this new risk taxonomy may appear similar to the much-maligned credit ratings of the recent financial crisis, significant differences exist.²⁰¹ Unlike ratings agencies that generate ratings using modeling that is based on limited information samples provided by firms,²⁰² the proposed rankings will be conducted by the firms themselves, using all of the information available to them. Therefore firms would not be able to “shop” for better risk rankings like they do with credit ratings.²⁰³ A serious onus would also be on the firm to generate accurate risk rankings so as to avoid liability-generating defective disclosures and financially consequential reputational harms.²⁰⁴

Admittedly, forecasting uncertain future events is difficult, but firms are in a better position than most investors to assess the probabilities and seriousness of the firms’ articulated risks. Many public firms already make such risk assessments internally.²⁰⁵ If a firm is unable to

nafter DISCLOSURE INITIATIVE] (“Modernizing the disclosure system [is geared towards improving] transparency by making disclosure information more accessible and easier to use.”).

201. See MICHAEL LEWIS, *THE BIG SHORT* 98 (2010) (“Like pretty much everything else that was happening between subprime mortgage borrowers and lenders, it followed from the defects of the models used to evaluate subprime mortgage bonds by the two major rating agencies, Moody’s and Standard & Poor’s.”); ROGER LOWENSTEIN, *THE END OF WALL STREET* 39–46 (2010) (critiquing the role of the credit rating agencies in the recent financial crisis); Gretchen Morgenson & Louise Story, *Rating Agency Data Aided Wall Street in Deals*, N.Y. TIMES, Apr. 23, 2010, at A1, available at http://www.nytimes.com/2010/04/24/business/24rating.html?_r=1&emc=eta1 (“But by routinely sharing their models, the agencies in effect gave bankers the tools to tinker with their complicated mortgage deals until the models produced the desired ratings.”); Frank Partnoy, *Overdependence on Credit Ratings was a Primary Cause of the Crisis* (Fondazione Eni Enrico Mattei, Working Paper No. 288, 2009), available at <http://www.bepress.com/cgi/viewcontent.cgi?article=1299&context=feem>.

202. See, e.g., LEWIS, *supra* note 201; Morgenson & Story, *supra* note 201 (critiquing the sampling-based model of rating agencies).

203. See LOWENSTEIN, *supra* note 201, at 40–41 (commenting on the pay-to-rate business model of ratings agencies); Louise Story, *Prosecutors Ask if 8 Banks Duped Rating Agencies*, N.Y. TIMES, May 13, 2010, at A1, available at <http://www.nytimes.com/2010/05/13/business/13street.html> (“The New York attorney general has started an investigation of eight banks to determine whether they provided misleading information to rating agencies in order to inflate the grades of certain mortgage securities.”).

204. Admittedly, the lack of rating-agency-like conflicts in the proposed risk rankings does not mean a complete absence of conflicts. Firms may be conflicted by different motivations in ranking and disclosing risks, but generally such conflicts already exist in terms of securities disclosures.

205. Many firms forecast with great accuracy on quarterly and annual earnings and other financial metrics for the marketplace. So, if their crystal balls can work for potential good news, then those same crystal balls should work for potential bad news. See John S. Poole, *Management Forecasts: Do They Have a Future in Corporate Takeovers?*, 42 SW. L.J. 765, 803 (1988) (arguing that management forecasts are more accurate, empirically, than analyst forecasts); see also Curt Cutting, *Turning Point for Rule 10b-5: Will Congressional Reforms Protect Small Corporations?*, 56 OHIO ST. L.J. 555, 571 (1995) (noting that the “reticence to issue forward-looking statements undermines the adequacy and accuracy of corporate disclosure.”); Ripken, *supra* note 7, at 986 (“[C]orporate managers . . . should view meaningful risk disclosure as an opportunity to encourage . . . deliberation

make such projections, it should say so. Then, investors can properly “price” that information into a firm’s valuation.²⁰⁶

C. Highlighting Risk Dynamics

1. Highlighting Changes & Omissions

The current Risk Factors framework fails to highlight the changes in a firm’s risk exposures. In reading a firm’s Risk Factors from quarter to quarter, from year to year, an investor cannot readily discern changes in a firm’s Risk Factors. For example, the online computer merchant, Dell Inc., included new language, underlined below, in its 2007 Annual Report. Dell Inc. added the new language to an existing Risk Factor to reflect important changes in the company’s risk profile related to laptop battery shortages:

Because we maintain minimal levels of component and product inventories a disruption in component or product availability such as the current industry shortage of laptop batteries could harm our financial performance and our ability to satisfy customer needs.²⁰⁷

Under the current regulations, investors reading the annual report would likely miss the new language about the material concerns relating to lap-top-battery shortages.

Under the proposed framework, Item 503(c) of Regulation S-K, would be amended to require firms to highlight changes in Risk Factors by underlining the caption of disclosures with new language or omissions to call attention to those changed or new risk assessments.

This simple change lowers the information costs and leads to a better framing effect by calling attention to new and changed risks. A limited number of sophisticated investors at hedge funds and investment banks already have tools to highlight these changes, so the behavioral

from investors who must confront the fact that there may be very good reasons not to purchase the shares of a company, notwithstanding its favorable predictions for the future.”)

206. For example, Merck’s Risk Factors state an inability to forecast certain legal liabilities. See 2009 Merck Annual Report, *supra* note 171, at 27 (“[Merck] is not currently able to estimate any additional amounts that it may be required to pay in connection with the *Vioxx* Lawsuits or *Vioxx* Investigations. These proceedings are still expected to continue for years and the Company cannot predict the course the proceedings will take. In view of the inherent difficulty of predicting the outcome of litigation, particularly where there are many claimants and the claimants seek unspecified damages, the Company is unable to predict the outcome of these matters, and at this time cannot reasonably estimate the possible loss or range of loss with respect to the *Vioxx* Lawsuits.”).

207. 2007 Dell Inc., Annual Report (Form 10-K), at 12–13 (Mar. 31, 2008) (emphasis added).

framework essentially democratizes this critical information for all investors.²⁰⁸

2. Executive Risk Attestations

Similar to highlighting changes in Risk Factors, the behavioral framework would amend the chief executive officer's certification. Pursuant to Rules 13a-14(a) and 15d-14(a) of the Exchange Act, the chief executive officer's certification is attached as an exhibit to a firm's quarterly and annual reports.²⁰⁹ The behavioral framework would require the following language to be inserted into the certificate for attestation: "Based on my knowledge, the Risk Factors, and other risk-related information included in this report, fairly present in all material respects the risk profile of the registrant as of this report."

This language is substantially similar to, and based on, existing language in the certification concerning the disclosures and the financial information contained in a quarterly or annual report for a public firm, so it should not be unduly cumbersome. In effect, this additional provision in the certificate, which senior executives personally attest to, will serve as a critical reminder for a firm's highest officers to monitor the staleness (or freshness) of their Risk Factors for investors.²¹⁰

The behavioral framework for securities risk disclosure is a practicable way of enhancing information for investors and improving risk management for firms. The next Part explores some key implications of the behavioral framework.

V. KEY IMPLICATIONS

The behavioral framework has a number of profound implications, five of which are discussed here. The behavioral framework would (1) lead to a better capture of securities disclosure; (2) create a more balanced appeal to the underlying rationales for Risk Factors; (3) simplify

208. See Zweig, *supra* note 112 (reporting on tools used by hedge funds to combat confirmation bias).

209. 17 C.F.R. § 229.601(b)(31) (2009) (Regulation S-K).

210. See Robert A. Prentice & David B. Spence, *Sarbanes-Oxley as Quack Corporate Governance: How Wise is the Received Wisdom?*, 95 GEO. L.J. 1843, 1901 (2007) ("Clearly, today a strong empirical case indicates that section 302 certifications not only warn CEOs and CFOs to take their responsibilities seriously, but also provide valuable information to the capital markets."); see also Paul A. Griffin & David H. Lont, *Taking the Oath: Investor Response to SEC Certification Under Sarbanes-Oxley*, 1 J. CONTEMP. ACCT. & ECON. 27 (2005) ("[I]nvestors d[o], in fact, respond to the events associated with SEC certification.").

transparency and increase financial literacy; (4) lower information costs for investors by requiring companies to enhance their publicly available risk disclosures; and (5) improve financial arbitrage.

A. A Better Capture of Securities Disclosure

In recent years, many financial regulations concerning securities risk have often taken on the form of statutory prohibitions and penalties and overlooked disclosure as a powerful, complementary regulatory tool.²¹¹ Worried about ordinary investors partaking in risky private unregistered offerings? Pass a rule banning ordinary investors from investing in such offerings.²¹² Concerned about stock-option granting practices? Levy large penalties on the offending parties.²¹³ While prohibitions and penalties are more satisfying politically and can have some deterrent effect, they are—standing alone—flawed and ineffective approaches to risk regulation.²¹⁴

After the economic crisis, many politicians, regulators, investor advocates, and some regulated entities called for corrective mechanisms to fix risk-management vulnerabilities that the recent crisis exposed.²¹⁵ Many post-crisis proposals and actions are solely in the form of enhanced penalties for financial misconduct and additional enforcement tools to deter potential bad acts.²¹⁶ These “sell-side” regulations include

211. See, e.g., Sarbanes–Oxley Act of 2002, Pub. L. No. 107-204 § 906, 2002 U.S.C.C.A.N. (116 Stat.) 743 (codified at 18 U.S.C. §§ 1350(a)–(b)); Thomas Lee Hazen, *Disparate Regulatory Schemes for Parallel Activities: Securities Regulation, Derivatives Regulation, Gambling, and Insurance*, 24 ANN. REV. BANKING & FIN. L. 375, 384 (2005) (“In the first instance, the Sarbanes–Oxley Act provides heightened criminal penalties for securities law violations.”).

212. 17 C.F.R. § 230.144A (2009).

213. See generally NIXON PEABODY, THE STOCK OPTIONS PROBE: CONSIDERATIONS FOR BOARD OF DIRECTORS AND AUDIT COMMITTEE, May 25, 2006, available at http://www.nixonpeabody.com/publications_detail3.asp?ID=1381; *Perfect Payday: Options Scorecard*, WALL ST. J. ONLINE, <http://online.wsj.com/public/resources/documents/info-optionscore06-full.html> (last modified Sept. 4, 2007); Press Release, U.S. Sec. & Exch. Comm’n, SEC Settles Options Backdating Case Against Ryan Ashley Brant, Former Chief Executive Officer and Chairman of the Board of Take-Two Interactive Software, Inc. (Feb. 14, 2007), available at <http://www.sec.gov/litigation/litreleases/2007/lr20003.htm>; Press Release, U.S. Sec. & Exch. Comm’n, SEC Files Actions Against Former CFO and Former Controller of Engineered Support Systems, Inc. Relating to Options Backdating Scheme (Feb. 6, 2007), available at <http://www.sec.gov/litigation/litreleases/2007/lr19990.htm>.

214. See, e.g., Jolls et al., *supra* note 5, at 1510–17 (critiquing the ineffectiveness of bans on market transactions).

215. See, e.g., Cooper, *supra* note 1; Wyatt & Herszenhorn, *supra* note 1.

216. See John C. Coates IV, *The Goals and Promise of the Sarbanes–Oxley Act*, 21 J. ECON. PERS. 91, 110 (2007) (“The Sarbanes–Oxley legislation increased maximum criminal sentences for fraud, consistent with Congress’s penchant over the last 50 years to criminalize more conduct and increase criminal penalties.”); Ripken, *supra* note 161, at 142–43 (discussing new bans and penalties in the Sarbanes–Oxley Act of 2002); see also 148 CONG. REC. S6516, 6524–25 (daily ed. July 10,

litigation and investigations from state attorneys general,²¹⁷ legislation aimed at clawing back and curbing compensation in the industry,²¹⁸ and proposals for new regulatory agencies and additional powers for existing regulators.²¹⁹

While these regulations can have a meaningful impact on the financial industry, they are, at best, a half measure because they fail to adequately address the risk vulnerabilities of the purchasing actor or the system at large.²²⁰ Every transaction has two sides. For every defaulted subprime mortgage, there is, perhaps, an unscrupulously aggressive mortgage lender, but also an uninformed, overly optimistic homeowner.²²¹ For every failed publicly traded bank, not only are there highly

2002) (statement of Sen. Wellstone) (“This bill . . . holds bad actors accountable for their fraud and deception.”); Press Release, White House Office of the Press Sec’y, President Bush Signs Corporate Corruption Bill (July 30, 2002), available at <http://georgewbush-whitehouse.archives.gov/news/releases/2002/07/20020730.html>.

217. See FIN. CRISIS INQUIRY COMM’N, ENFORCEMENT MEASURES RELATED TO THE FINANCIAL CRISIS (2010), available at <http://fcic.gov/reports/pdfs/2010-0114-EnforcementMeasures.pdf> (highlighting the various enforcement actions taken by state attorneys general); Jonathan R. Macey, *Wall Street in Turmoil: Who is Protecting the Investor?: State-Federal Relations Post-Eliot Spitzer*, 70 BROOK. L. REV. 117, 118 (2004) (“[Eliot] Spitzer, the most successful of what might best be described as an emerging generation of ‘Enronian Policy Entrepreneurs,’ saw the collapse of Enron as opening what political scientists describe as a ‘policy window’—a window in time during which the political environment is unusually welcoming of new regulations and policy proposals.”); Paredes, *supra* note 2, at 429 (“[S]tate attorneys general, most notably New York Attorney General Eliot Spitzer, have been active to an unprecedented degree in bringing or threatening charges for fraud or corporate corruption against corporate executives, financial firms on Wall Street, and securities market professionals.”).

218. See U.S. DEP’T OF TREASURY, FINANCIAL REGULATORY REFORM: A NEW FOUNDATION 12 (2009), http://www.financialstability.gov/docs/regs/FinalReport_web.pdf [hereinafter FINANCIAL REGULATORY REFORM] (“Federal regulators should issue standards and guidelines to better align executive compensation practices of financial firms with long-term shareholder value and to prevent compensation practices from providing incentives that could threaten the safety and soundness of supervised institutions.”); Andrea Fuller, *House Approves Limits on Executive Pay*, N.Y. TIMES, July 31, 2009, <http://www.nytimes.com/2009/08/01/business/01pay.html> (describing legislation aimed at reducing executive pay); Stephen Labaton, *U.S. to Order Pay Cuts at Firms That Got Most Aid*, N.Y. TIMES, Oct. 21, 2009, <http://www.nytimes.com/2009/10/22/business/22pay.html> (describing efforts to reduce compensation at companies that received government assistance).

219. See generally FINANCIAL REGULATORY REFORM, *supra* note 218.

220. See Richard A. Posner, Op-Ed., *Treating Financial Consumers as Consenting Adults*, WALL ST. J., July 22, 2009, <http://online.wsj.com/article/SB10001424052970203946904574302213213148166.html> (opining that consumers must bear some responsibility for their financial choices).

221. See John Carney, *20 Year Old Buys Home With \$183,000 FHA Loan And Just 3.5% Down*, BUS. INSIDER, Oct. 18, 2009 (giving an example of an overly optimistic homeowner); Bianna Golodryga, *Do Homeowners Share Blame for Mortgage Mess?*, ABC NEWS, Oct. 7, 2008, <http://abcnews.go.com/GMA/SmartHome/story?id=5973820> (“More Americans than ever have become first-time homeowners in the last decade. It’s become increasingly clear, however, that many of them couldn’t keep up with home payments.”); Posner, *supra* note 220 (“It cannot just be assumed that most people who during the housing boom bought homes with adjustable-rate mortgages, or mortgages with prepayment penalties, or mortgages that required a low or even no down

aggressive executives, but also millions of investors who were ignorant of the risks inherent in their investments. Therefore, in addition to enhanced sell-side regulation, improved buy-side regulation is also needed to better protect investors.

A more effective regulatory approach is one that could supplement the enforcement paradigm with an enhanced disclosure framework based on what I term an “informational theory of regulation.”²²² The theory, in this context, focuses on enhancing information for investors and other buy-side actors in order to allow them to maintain their sovereignty and make better decisions.²²³ A behavioral-framework approach to risk disclosure is one such approach that can lead to a better capture of the utility of disclosure.

1. Increased Effectiveness

A behavioral framework for risk disclosure, while not fail-safe, has inherent advantages over a purely enforcement-based approach.²²⁴ First, a structural, disclosure-based approach lowers monitoring costs in a world where securities regulators, such as the SEC, have serious resource constraints.²²⁵ A purely enforcement-based approach would require constant monitoring, policing, and punishment, which is impractical and ineffective in the face of limited resources. Moreover, underenforcement

payment, were fools or victims of fraud.”); Ruth Simon & James R. Hagerty, *One in Four Borrowers is Underwater*, WALL ST. J., Nov. 24, 2009, <http://online.wsj.com/article/SB125903489722661849.html> (“The proportion of U.S. homeowners who owe more on their mortgages than the properties are worth has swelled to about 23%, threatening prospects for a sustained housing recovery.”).

222. An “informational theory of regulation and law,” as I have termed it, departs from historical conceptions of the law, which were often rooted in power relations, social justice, control, and command. While those conceptions have been constructive, our understanding of the law can be expanded through an information-based conception—a view of the law as a source of information aggregation and information enhancement towards better policies and choices. The shift to this new theory would work in conjunction with, while not actually replacing, existing legal theories. As initially conceptualized, an information theory of law would favor transparency over secrecy, collaboration over control, and incentives over mandates.

223. See, e.g., Richard H. Thaler & Cass R. Sunstein, Op-Ed., *Disclosure Is the Best Kind Of Credit Regulation*, WALL ST. J., Aug. 13, 2008, at A17 (advocating for transparency and electronic disclosure as the superior mode of credit regulation).

224. See generally Louis Lowenstein, *Corporate Governance and the Voice of the Paparazzi* (Columbia Law Sch., Working Paper No. 132, 1999), available at http://www.law.columbia.edu/null/Working+Paper+No?exclusive=filemgr.download&file_id=64160&showthumb=0.

225. See Troy A. Paredes, Comm’r, Sec. & Exch. Comm’n, Remarks at The SEC Speaks in 2009 (Feb. 6, 2009), available at <http://www.sec.gov/news/speech/2009/spch020609tap.htm> (“[A]s an agency, the SEC has limited resources. Even if the agency’s budget increases, we still will be faced with the challenge of allocating a finite number of people and funds. It is critical to recognize that there is an opportunity cost when we dedicate resources to administer particular regulations, undertake certain examinations and inspections, and pursue specific enforcement actions.”).

would likely lead to ad hoc, dilutive compliance.²²⁶ The inability of the SEC to regularly review and monitor existing Risk Factors has resulted in disclosures of varying forms and utility for investors under the current framework.²²⁷ In contrast, a structural approach would push firms to make more meaningful disclosures by configuring the rules to require more substantive disclosures, and making vague disclosures undesirable and troublesome.²²⁸

As an example of the advantages of a structural approach over an enforcement-based approach, consider the collection of federal income tax. Federal law requires that income taxes for wages be withheld from the earner at the source of payment, rather than having a self-reporting, self-paying system that would require constant monitoring and collection by a resource-constrained Internal Revenue Service.²²⁹ Non-compliance with the current structural-based system is less likely because it requires affirmative fraudulent actions by the wage payer and payee. The structural-regulatory approach of withholding is widely considered to be a great success in law.²³⁰

Second, a structural, disclosure-based approach would lead to increased effectiveness because once a regulatory apparatus geared towards the desired outcome is constructed, that apparatus would be self-executing. The proposed framework will set a new default for public firms, which will likely lead to wide compliance.²³¹ Wide compliance, in turn, will lead to a “virtuous cycle” of more compliance by other public firms and private firms going public.²³² Wide compliance will also result in the positive externality of more uniformity in risk disclosures, which

226. See Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968) (highlighting how sporadic enforcement dilutes the deterrent effect of law).

227. See Cheng, *supra* note 187, at 660 (“Underenforced laws create what might be (adventurously) called ‘vague’ness in practice.”).

228. See *supra* Part IV for a more detailed discussion regarding the specific mechanisms under the proposed behavioral framework.

229. See 26 U.S.C. § 3402 (2006).

230. See Cheng, *supra* note 187, at 677 (“The use of structure to encourage tax compliance has been an unqualified success.”); Leandra Lederman, *Statutory Speed Bumps: The Roles Third Parties Play in Tax Compliance*, 60 STAN. L. REV. 695, 698 (2007).

231. See SUNSTEIN & THALER, *supra* note 87, at 35 (“The combination of loss aversion and mindless choosing implies that if an option is designated as the ‘default,’ it will attract a large market share. Default options act as powerful nudges.”); see also Eric J. Johnson & Daniel Goldstein, *Do Defaults Save Lives?*, 302 SCI. 1338 (2003) (showing how default rules lead to wide compliance in the area of organ donation).

232. See Cheng, *supra* note 187, at 665 (“Higher compliance rates lead to a virtuous cycle. Over time, the structurally preferred default behaviors give rise to accompanying social norms, further enforcing the desired conduct.”).

will lend itself to easier “comparison shopping,” as uniformity will create inherent comparative metrics for investors.²³³

2. Increased Market Confidence

Enhanced Risk Factors can lead to increased market confidence.²³⁴ The recent financial crisis has eroded the public’s trust in the market and the market regulators.²³⁵ Trust is a crucial component to success of individual firms and the economy at large.²³⁶ Enhanced Risk Factors create a greater sense of fairness for investors, both procedurally and expressively, which will likely help restore and increase market confidence.

On a procedural level, the behavioral framework creates a greater sense of procedural justice, the idea that fairness in processes engenders greater faith in those processes.²³⁷ The new framework will signal investors that market regulators heard investors’ calls for better protections and are responding to their desires, which will generate more confidence in the system.²³⁸ Additionally, the behavioral framework gives notice to investors of the risks of their investments. Notice is an important part of procedural justice.²³⁹ Both the signaling and notice effects of better dis-

233. See, e.g., THOMAS TULLIS & WILLIAM ALBERT, MEASURING THE USER EXPERIENCE 8–10 (2008) (describing the value of comparative metrics for users). See generally YOUNGME MOON, DIFFERENT: ESCAPING THE COMPETITIVE HERD (2010) (explicating the importance of comparative metrics as a means for product differentiation).

234. See EASTERBROOK & FISHEL, *supra* note 37, at 692 (“The justification most commonly offered for mandatory disclosure rules is that they are necessary to ‘preserve confidence’ in the capital markets Disclosure rules both deter fraud and equalize ‘access’ to information, restoring the necessary confidence.”); Ripken, *supra* note 161, at 155 (“Investor trust is therefore critical for the securities markets to work, and disclosure helps to facilitate that trust.”).

235. See Robert J. Shiller, *Animal Spirits Depend on Trust*, WALL ST. J., Jan. 27, 2009, at A15, available at <http://online.wsj.com/article/SB123302080925418107.html> (“The trust in the innovative lending practices was excessive; now that trust is replaced by deep mistrust.”).

236. See ARIELY, *supra* note 70, at 195–230 (discussing the importance of honesty and trust in economic transactions); ANNA BERNASEK, THE ECONOMICS OF INTEGRITY (2009) (discussing the critical role of integrity in the success and failure of company and states); Thorold Barker, *Wall Street’s Trust Busters*, WALL ST. J., Jan. 23, 2009, at C10 (“But beyond the power struggles, huge losses and increased regulation, there is a more fundamental threat to the industry: the destruction of trust.”); Philippe Aghion et al., *Regulation and Distrust* (Nat’l Bureau of Econ. Research, Working Paper No. 14,648, 2009), available at <http://www.nber.org/papers/w14648>; Laura Bottazzi et al., *The Importance of Trust for Investment: Evidence from Venture Capital* (Innocenzo Gasparini Inst. for Econ. Research, Working Paper No. 325, 2010), available at <ftp://ftp.igier.unibocconi.it/wp/2007/325.pdf> (“[W]e find a positive effect of trust on investments.”).

237. See generally Tom R. Tyler & E. Allan Lind, *Procedural Justice*, in HANDBOOK OF JUSTICE RESEARCH IN LAW 65 (Joseph Sanders & V. Lee Hamilton eds., 2000).

238. See Tom R. Tyler & Hulda Thorisdottir, *A Psychological Perspective on Compensation for Harm: Examining the September 11th Victim Compensation Fund*, 53 DEPAUL L. REV. 355, 380–82 (2003) (finding that when people get to state their case to an authority, they are more likely to accept the decision that the authority makes than when their opinions are not taken into account).

239. See Lawrence B. Solum, *Procedural Justice*, 78 S. CAL. L. REV. 181, 305 (2004) (highlighting notice as a principle of procedural justice); see also Mathews v. Eldridge, 424 U.S. 319, 348

closures will likely result in a greater sense of procedural justice for investors leading to more trust in the marketplace.²⁴⁰ Mechanisms that are procedurally more just engender greater confidence in those mechanisms.²⁴¹

A greater sense of procedural justice may reduce the success rates of meritless private litigation against public firms. Evidence from the medical malpractice and tort contexts suggests that a greater sense of procedural justice can reduce litigation.²⁴²

On an expressive level, the rulemaking process of creating the behavioral framework can also increase confidence and change norms in the marketplace. The rulemaking process would aggregate information about improving Risk Factors and bring greater focus to the benefits of the behavioral framework, which would generally create additional confidence in risk disclosures.²⁴³ Furthermore, the behavioral framework would better inform investors about the risks of public firms, thereby changing their attitudes about the utility of risk disclosure and the trust-

(1976) (finding that due process requires that when a person is in serious jeopardy of serious loss, he should be given notice of the case against him and an opportunity to respond); *Eash v. Riggins Trucking Co.*, 757 F.2d 557, 579 (3d Cir. 1985) (en banc) (Sloviter, J., dissenting) (“[T]he principles of procedural fairness embedded in the Constitution . . . require adversary proceedings including notice.”); *Am. Motor Inns, Inc. v. Holiday Inns, Inc.*, 521 F.2d 1230, 1244 (3d Cir. 1975) (“One of the basic tenets of American jurisprudence is that procedural fairness requires that each party have notice of the issues involved and an opportunity to be heard at a meaningful time and in a meaningful manner.”).

240. See Tyler & Thorisdottir, *supra* note 238, at 380–83 (showing that people whose views are considered in the decision making process will emerge from the process with a belief that the process was fair). See generally JOHN THIBAUT & LAURENS WALKER, *PROCEDURAL JUSTICE: A PSYCHOLOGICAL ANALYSIS* (Lawrence Erlbaum Assocs. 1975); Tyler & Lind, *supra* note 237, at 65.

241. See, e.g., E. ALLAN LIND & TOM R. TYLER, *THE SOCIAL PSYCHOLOGY OF PROCEDURAL JUSTICE* (Plenum Press 1988); THIBAUT & WALKER, *supra* note 240; Edith Barrett-Howard & Tom R. Tyler, *Procedural Justice as a Criterion in Allocation Decisions*, 50 J. PERSONALITY & SOC. PSYCHOL. 296, 300 (1986); Tom R. Tyler, *The Psychological Consequences of Judicial Procedures: Implications for Civil Commitment Hearings*, 46 SMU L. REV. 433 (1992).

242. See, e.g., Rick Boothman, *Apologies and a Strong Defense at the University of Michigan Health System*, 32 PHYSICIAN EXEC. 7, 10 (2006) (showing how a doctor’s honesty with a patient can reduce a patient’s willingness to litigate); Steve S. Kraman & Ginny Hamm, *Risk Management: Extreme Honesty May Be the Best Policy*, 131 ANNALS OF INTERNAL MED. 963 (1999) (showing how a doctor’s honesty with a patient can lead to a lower chance of litigation); E. Allan Lind et al., *In the Eye of the Beholder: Tort Litigants’ Evaluations of Their Experiences in the Civil Justice System*, 24 LAW & SOC’Y REV. 953, 967–68 (1990) (showing the effect of procedural justice on the filing of lawsuits); Liz Kowalczyk, *Hospitals Study When to Apologize to Patients*, BOSTON GLOBE, June 24, 2005, at A1 (“[T]here . . . is growing belief among malpractice insurers that . . . disclosure and open expression of sympathy and remorse could head off malpractice lawsuits in a system reeling from skyrocketing premiums.”).

243. See generally Richard H. McAdams, *A Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649 (2000).

worthiness of the disclosing firms.²⁴⁴ This change would lead to a greater collective confidence in the marketplace.²⁴⁵ This expectation is consistent with market studies suggesting that “companies voluntarily disclosing more in their annual reports than is required may command a higher stock price.”²⁴⁶

B. A More Balanced Appeal to Underlying Rationales

In Part I, I articulated three underlying rationales for Risk Factors: information, compliance, and litigation avoidance.²⁴⁷ Given the evolution of securities litigation and regulation, much of the current risk-disclosure practice appears to be driven by the litigation-avoidance and compliance rationales.²⁴⁸ Due to the expensive nature and proliferation of securities litigation, firms and their attorneys often imagine plaintiffs’ lawyers as their intended readers in drafting Risk Factors.²⁴⁹ As a result, disclosures are obfuscated and muddled with overly large qualifiers and legalese despite requirements for “plain English.”²⁵⁰ This heavy emphasis on the litigation-avoidance and compliance rationales comes at the expense of the information rationale. This leads to a disclosure regime that is technically compliant with the rules but unfaithful to the SEC’s historical, core principle of receiving high-quality information to protect investors.²⁵¹

The proposed framework leads to a more balanced approach to the underlying, cross-cutting rationales and shifts emphasis back to the information rationale. Classifying risks based on relative likelihood and relative impact creates a more accessible presentation format that allows readers to better understand the information. The new framework could

244. See generally Richard H. McAdams, *An Attitudinal Theory of Expressive Law*, 79 OR. L. REV. 339 (2000); McAdams, *supra* note 243 (suggesting that the expressive function of law can lead to more cooperation).

245. See generally McAdams, *supra* note 244; McAdams, *supra* note 243.

246. *Meet S&P’s Corporate-Disclosure Rankings*, BUSINESSWEEK ONLINE, Oct. 15, 2002, http://www.businessweek.com/investor/content/oct2002/pi20021015_6208.htm.

247. See *supra* Part I.B.

248. See Siebecker, *supra* note 160, at 132 (“Why would corporations engage in a ‘data dump’ that impedes understanding? The securities regulation regime that governs mandatory reporting of public companies, as well as most state corporate laws, provide significant immunity from fraud liability for comprehensive disclosure, even if the amount of disclosure arguably renders adequate understanding all but impossible.”).

249. See Ripken, *supra* note 161, at 186 (“[D]isclosure documents today are written by corporate lawyers in formalized language to protect the corporation from liability rather than to provide the investor with meaningful information.”).

250. See generally Ripken, *supra* note 161, at 186 (“[D]isclosure documents [are] ‘often presented in technical language and unreadable ‘legalese.’”); Schwartz, *supra* note 179 (discussing the lack of understandable disclosure regarding executive compensation).

251. See Siebecker, *supra* note 160.

also lead to a shift in a firm's perspective when drafting disclosures. Firms under the new framework would have to consider their risks more carefully because they would have to rank their vulnerabilities. This ranking would shift the drafting posture from a litigation-avoidance posture to an informational posture, thereby creating disclosure that is more meaningful to the investor. Disclosure then becomes more than a regulatory chore to be completed; it becomes a meaningful risk-management tool for firms.²⁵² Additionally, this disclosure may also lead managers to rethink or avoid actions that will generate highly negative disclosures or riskier classifications.²⁵³ If done appropriately, the behavioral framework can lead to better information for investors and better risk management for firms.²⁵⁴

C. Simplified Transparency & Financial Literacy

The behavioral framework can lead towards more simplified transparency that increases financial literacy and readership of securities filings. For much of the SEC's history, regulatory emphasis has been placed on more disclosure rather than better disclosure.²⁵⁵ That focus, perhaps, has been unduly tied to quantity rather than quality.²⁵⁶ In this instance, Hebert Simon may have said it best: "A wealth of information creates a poverty of attention."²⁵⁷ As a result, a popular perception (or misperception) exists that all securities disclosure is incomprehensible and unhelpful.²⁵⁸ Many investors cannot understand the disclosed infor-

252. See Fox, *supra* note 11, at 123 ("When managers have the legal obligation to disclose certain information, they may have to gather and analyze information they would otherwise ignore.").

253. See *id.* at 125 ("Required disclosure, therefore, will make [management] try harder to avoid actions that will generate negative information.").

254. See Cary, *supra* note 13, at 410–11; Schmidt, *supra* note 13, at 91–92 ("[R]isk management framework can improve the transparency of disclosures to help investors and customers better understand the operations of the firm [E]ach entity should disclose the information its stakeholders need to best evaluate the entity's risk profile."). See generally STEINBERG, *supra* note 13; Lowenstein, *supra* note 13; Pinto, *supra* note 13.

255. See Ripken, *supra* note 161, at 161 ("Corporations have become accustomed to disclosing more and more information to investors without accounting for the drawbacks of information overload. As one large public corporation put it: 'If [our] annual report or quarterly report has to be the size of the New York City phone book, that's life.'"); Siebecker, *supra* note 160, at 131 ("Some corporations attempt to satisfy disclosure obligations through massive 'data dumping.'").

256. See JONATHON BARON, THINKING AND DECIDING 260, 272 (3d ed. 2000) (suggesting that more information does not necessarily lead to better judgment); Paredes, *supra* note 2, at 418 (suggesting that more mandated disclosure does not result in better use of the disclosure by investors).

257. Herbert A. Simon, *Designing Organizations for an Information-Rich World*, in COMPUTERS, COMMUNICATIONS, AND THE PUBLIC INTEREST 37, 40–41 (Martin Greenberger ed., 1971).

258. See McFarland, *supra* note 26, at 321–22 ("Plain English is particularly important as investors rely less on intermediaries to make their investment decisions Applying the Plain

mation and many more simply do not read it.²⁵⁹ Thus, despite a rise in the population of investors and a rise in complex financial instruments, financial literacy is in decline.²⁶⁰

Changing how public firms disclose their risks can ultimately alter how firms draft their disclosure documents and how investors respond to them. Because the new framework accounts for cognitive limitations and framing effects, the substance and presentation of the information will be more accessible and user-friendly.²⁶¹ This accessibility, in turn, will change norms and expectations about the utility of securities disclosures. Behavioral studies indicate that expectations alone can change the utility of a product.²⁶² Therefore, once investors, like consumers, become reacquainted with the new and improved product, they will likely utilize disclosure more to educate themselves.²⁶³ Moreover, a renewed awareness in its utility will lead to a rise in its consumption because mandated disclosure imposes few direct monetary costs on investors thus

English rules to . . . disclosure would help alleviate the potential for investors to misunderstand the disclosure, or simply tune it out because of information overload.”); Paredes, *supra* note 2, at 418 (stating that the goal of disclosure is aimed at providing investors with more information without considering how investors actually use that information); Ripken, *supra* note 161, at 185 (“Disclosure cannot fulfill its communicative purpose if investors find it impenetrable and therefore ignore it.”).

259. See Fanto, *supra* note 26, at 170 (“[Investors] do not read lengthy disclosure documents, no matter how plainly written, and it makes no sense to encourage them to do so.”); Langevoort, *supra* note 42, at 682 (“[A]necdotal evidence, supported by many people’s assumptions about investment practices, indicates that most nonprofessional investors do not read the prospectuses and other legal disclosure documents they are given.”); Baruch Lev & Meiring de Villiers, *Stock Price Crashes and 10b-5 Damages: A Legal, Economic, and Policy Analysis*, 47 STAN. L. REV. 7, 19 (1994) (“[M]ost investors do not read, let alone thoroughly analyze, financial statements, prospectuses, or other corporate disclosures . . .”).

260. See Steven J. Dubner, *Suze Orman Answers Your Money Questions*, N.Y. TIMES, FREAKONOMICS BLOG, Sept. 19, 2008, <http://freakonomics.blogs.nytimes.com/2008/09/19/suze-orman-answers-your-money-questions/> (“[Financial literacy] is woefully low.”); Matt Taibbi, *The Big Takeover*, ROLLING STONE, Mar. 19, 2009, http://www.rollingstone.com/politics/story/26793903/the_big_takeover (“Literacy is power. In the age of the CDS and CDO, most of us are financial illiterates.”).

261. See, e.g., Schmidt, *supra* note 13 (“[R]isk management framework can improve the transparency of disclosures to help investors and customers better understand the operations of the firm . . . [E]ach entity should disclose the information its stakeholders need to best evaluate the entity’s risk profile.”). See generally Lowenstein, *supra* note 13.

262. See, e.g., ARIELY, *supra* note 70, at 155–72 (discussing the cognitive effects of expectation).

263. See EASTERBROOK & FISHEL, *supra* note 37, at 693–94 (“Some say that uninformed investors are exploited investors; whoever knows less will get a raw deal. Others maintain that fear of such exploitation erodes confidence whether or not these investors lose out. Disclosure rules equalizing access and simplifying the presentation of information, so all can understand it, overcome the problem, whichever way it is put.”).

increasing readership and elevating financial literacy.²⁶⁴ Improved disclosures will create a positive feedback cycle where increased demand by investors for more meaningful, simplified disclosure will lead firms to become more transparent.²⁶⁵

D. Information-Technology Leverage

Increased transparency and financial literacy would attract more investors to use technology to inform and educate themselves.²⁶⁶ This use would be consistent with the SEC's recent initiatives to modernize the disclosure system.²⁶⁷ Beginning with the tenure of SEC Chairman Christopher Cox in 2005, there has been a significant movement for the agency to leverage new information technology to enhance disclosure for investors.²⁶⁸

In terms of the behavioral framework, the categorizations of risks lend themselves to easy comparison for investors. For example, if an investor wanted to compare the catastrophic risks that are most likely for two investment banks, the investor can pull the disclosure of those firms from the SEC's website and make an educated assessment. Under the current ad hoc disclosure system, that type of comparison is not readily practicable.

More importantly, once informational costs are reduced by enhanced disclosures, entrepreneurs will have more incentive to create pro-

264. See ARIELY, *supra* note 70, at 49–65 (discussing the psychological impact of “free” as a price and how it leads to overconsumption). See generally CHRIS ANDERSON, *FREE: THE FUTURE OF A RADICAL PRICE* (2009).

265. Admittedly, there may initially be a wide gap between disclosure and comprehension, but that gap will narrow as firms respond to investor demands for more accessible Risk Factors and investors become more capable of understanding them. See Cheng, *supra* note 187, at 665 (“Higher compliance rates lead to a virtuous cycle. Over time, the structurally preferred default behaviors give rise to accompanying social norms, further enforcing the desired conduct.”).

266. See generally Goshen & Parchomovsky, *supra* note 42.

267. John Coffee, the renowned securities law scholar, foresaw this development. See Coffee, *supra* note 37, at 752 (“In the computerized securities marketplace of the future, individual investor review of corporate disclosures will be the exception, rather [than] the rule, and clients will increasingly rely on professional advice, both to select individual securities and to diversify their portfolios efficiently. In this world, collectivization of financial data within the SEC is best justified as a strategy for making more efficient use of securities analysts and other market professionals, both by eliminating duplication and by making it feasible for them, at the margin, to cover smaller firms.”); see also THOMAS L. FRIEDMAN, *THE WORLD IS FLAT 3.0: A BRIEF HISTORY OF THE TWENTY-FIRST CENTURY 177–78* (2007) (discussing the equalizing role of internet search engines); Lowenstein, *supra* note 13; McFarland, *supra* note 26, at 321–22 (“Plain English is particularly important as investors rely less on intermediaries to make their investment decisions Applying the Plain English rules to . . . disclosure would help alleviate the potential for investors to misunderstand the disclosure, or simply tune it out because of information overload.”).

268. For example, in 2007, the SEC proposed using the markup language XBRL (eXtensible Business Reporting Language) for financial disclosures to allow investors to readily compare and disaggregate financial information. See DISCLOSURE INITIATIVE, *supra* note 200.

grams that summarize and repackage the information for wider consumption.²⁶⁹ Enhanced mandatory disclosure can act as an open-source platform for investors and entrepreneurs. It is not hard to imagine an iPhone application or web-based tool that gives updates to people about changed Risk Factors or new catastrophic Risk Factors once informational costs are reduced significantly.²⁷⁰ Such informational advances will make financial information more palatable to more investors.²⁷¹ Therefore, enhancing the risk-disclosure framework can be a step towards democratizing and demystifying financial information for more investors.²⁷²

E. Enhancing Arbitrage

Critiques of behavioral approaches to securities regulation have suggested that such approaches are futile and unnecessary because arbitrage and efficient markets can adequately protect investors.²⁷³ The contention is that regulators and firm managers²⁷⁴ also suffer from cognitive

269. See FRIEDMAN, *supra* note 267, at 93–94 (discussing the power of open-source software and online communities); Charles Homan, *The Geekdom of Crowds: The Obama Administration Experiments with Data-Driven Democracy*, WASH. MONTHLY, July/Aug. 2009, <http://www.washingtonmonthly.com/features/2009/0907.homans.html> (“It used to be that if you wanted financial intelligence, you had to pay for the services of a ratings agency like Moody’s, where analysts made sense of the data tapes gathered in person from the Securities and Exchange Commission. Now you can get a comparable analysis at Freerisk.org, a site launched by a pair of amateur programmers.”).

270. See, e.g., Thaler & Sunstein, *supra* note 223 (expounding the potential of disclosure-based regulation given modern information technology); Jeff Howe, *The Rise of Crowdsourcing*, WIRED, June 2006, at 176 (“The open source software movement proved that a network of passionate, geeky volunteers could write code just as well as the highly paid developers at Microsoft or Sun Microsystems. Wikipedia showed that the model could be used to create a sprawling and surprisingly comprehensive online encyclopedia.”).

271. See Fanto, *supra* note 26, at 170 (explaining that while investors do not read lengthy disclosure documents, they are more inclined to read and benefit from summaries of such documents).

272. See Homan, *supra* note 269 (“[G]reater computing power, better software tools, and the ever-extending reach of the Internet have all democratized the once-rarified field of data use. Making sense of huge piles of raw information used to require a degree in computer science, a university lab mainframe’s worth of circuits, and an awful lot of time. Now all it takes is an Internet connection and the ability to type in ‘Google.’”).

273. See, e.g., Mark Seidenfeld, *Cognitive Loafing, Social Conformity, and Judicial Review of Agency Rulemaking*, 87 CORNELL L. REV. 486 (2002); see also Choi & Pritchard, *supra* note 70, at 5 (“If cognitive defects are pervasive, will intervention help?”); Stephen J. Choi, *The Globalization of Corporate and Securities Law in the Twenty-First Century: Channeling Competition in the Global Securities Market*, 16 TRANSNAT’L LAW. 111, 117 (2002) (“Even well intentioned regulators may face decision-making problems.”).

274. See Choi, *supra* note 273, at 117 (“Commentators have identified a great number of behavioral biases under which all people labor. Expertise may help alleviate some of these biases. Certainly, many SEC staffers can claim a large degree of expertise in the functioning of the financial markets (as well as the various guises of fraud). However, with expertise often comes several behavioral illusions.”). See generally Choi & Pritchard, *supra* note 70, at 5 (“If cognitive defects are pervasive, will intervention help?”); Posner, *supra* note 220 (“Behavioral economists are right to

limitations like investors; therefore, we should defer to the efficient-market hypothesis²⁷⁵ and let a few sophisticated market players correct and signal the rest of the market through arbitrage and pricing.²⁷⁶ This line of argument, however, places too much faith in efficient markets and too little faith in individuals.

In theory, arbitrage is the “process of earning riskless profits by taking advantage of differential pricing for the same physical asset or security.”²⁷⁷ Theoretical or textbook arbitrage requires no real capital, assumes no real risk, and operates in a realm of infinitely patient actors.²⁷⁸ In reality, arbitrage requires much capital and an assumption of significant risk.²⁷⁹ Mispricing of an asset allows an investor to arbitrage that asset. In the short run, the investor may lose money until the differential prices converge and the investor will need additional capital and ample tolerance to maintain that position.²⁸⁰ Depending on how long the markets stay “irrational” or “inefficient,” this position could require substantial capital and risk assumption, and markets, as John Maynard Keynes famously noted, “can stay irrational longer than you can stay solvent.”²⁸¹

Additionally, arbitrage by a few select investors in a supposedly efficient market is not an optimal corrective tool because even the most sophisticated and well-resourced investors suffer from cognitive biases; and price is not always a good corrective signal in the short term.²⁸² Arbitrage by sophisticated investors can, in the near term, lead to a widening of mispricing and send erroneous signals to the market. These circumstances lead to cascades of misinformation that cause a magnifica-

point to the limitations of human cognition. But if they have the same cognitive limitations as consumers, should they be designing systems of consumer protection?”); Seidenfeld, *supra* note 273 (discussing how regulators can also be influenced by cognitive limitations).

275. See generally Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1970).

276. See Choi & Pritchard, *supra* note 70, at 3 (“Under the Efficient Capital Market Hypothesis, the ‘smart’ money will set prices and through the process of arbitrage will swamp the influence of the poorly informed or foolish. Even the unsophisticated therefore can rely on market efficiency to ensure that the price he pays for a security will be ‘fair.’”). See generally Eugene F. Fama & Kenneth R. French, *Disagreement, Tastes, and Asset Pricing*, 83 J. FIN. ECON. 667 (2007); Edward Glaeser, *Paternalism and Psychology*, 73 U. CHI. L. REV. 133 (2006).

277. WILLIAM F. SHARPE ET AL., INVESTMENTS 284 (1999).

278. See Andrei Shleifer & Robert Vishny, *The Limits to Arbitrage*, 52 J. FIN. 35, 36 (1997) (exhibiting how real-world arbitrage involves risk and requires capital).

279. *Id.*

280. See, e.g., Owen A. Lamont & Richard H. Thaler, *Can the Market Add and Subtract? Mispricing in Tech Stock Carve-Outs*, 111 J. POL. ECON. 227 (2003) (studying mispricing in U.S. technology stocks).

281. POSNER, *supra* note 71, at 92.

282. See, e.g., Fama & French, *supra* note 276; Lamont & Thaler, *supra* note 280; Shleifer & Vishny, *supra* note 278.

tion of individual and systemic risks.²⁸³ Therefore, arbitrage alone cannot fully address securities risk.²⁸⁴

This behavioral approach to disclosure does not seek to undermine arbitrage but to refine and enhance it, to make it work more efficiently by better informing investors. While the regulator and regulated may both suffer from cognitive limitations, collective self-awareness of these shortcomings enables self-correction.²⁸⁵ Because cognitive limitations are easier to see in others, collective recognition makes redress more probable.²⁸⁶ This collective awareness is the nature of human collaboration and human progress, and it can also be the nature of regulatory progress.

CONCLUSION

In the wake of the most recent economic crisis, many questioned whether ominous forewarnings about the crash existed.²⁸⁷ If so, why were they ignored?²⁸⁸ Why were disclosures concerning serious risks

283. See, e.g., Lamont & Thaler, *supra* note 280 (challenging the presumption that mispricing can be corrected by arbitrage alone). See generally Sushil Bikhchandani et al., *Learning from the Behavior of Others: Conformity, Fads, and Informational Cascades*, 12 J. ECON. PERSP. 151 (1998); Péter Kondor, *Risk in Dynamic Arbitrage: Price Effects of Convergence Trading*, 64 J. FIN. 631 (2009); Barney Frank Interview, *supra* note 82 (“[The rich and sophisticated] need protection . . . They are not just playing with their own money, they are playing with other people’s money and the societal impact of their error can be very great, so I think it reinforces the view that no, you can’t just leave the rich to their vices.”).

284. See Kondor, *supra* note 283; Shleifer & Vishny, *supra* note 278 (expounding the limits of arbitrage in practice).

285. See BELSKY & GILOVICH, *supra* note 77, at 199–211 (discussing various methodologies for individuals to overcome their cognitive biases); SUNSTEIN & THALER, *supra* note 87, at 83–102 (expounding choice architecture that accounts for cognitive biases).

286. See Jeffrey J. Rachlinski, *Heuristics and Biases in the Courts: Ignorance or Adaptation?*, 79 OR. L. REV. 61, 65–66 (“[C]ognitive biases are easier to spot in others than in oneself.”); see also Justin Kruger & Thomas Gilovich, “*Naïve Cynicism*” in *Everyday Theories on Responsibility Assessment: On Biased Assumptions of Bias*, 76 J. PERSONALITY & SOC. PSYCHOL. 743, 744 (1999) (finding that it is easier to spot cognitive limitations in other people).

287. Many commentators have pointed to the public filings of major financial firms like Lehman Brothers and Bear Stearns as documents that contained forewarnings of a looming crash. See, e.g., 2007 Lehman Bros. Annual Report, *supra* note 169, at 14 (“Recently, the residential real estate market in the U.S. has experienced a significant downturn due to declining real estate values, substantially reducing mortgage loan originations and securitizations, and precipitating more generalized credit market dislocations and a significant contraction in available liquidity globally, which negatively impacted our revenues.”); *id.* at 16 (“To the extent that a liquidity event lasts for more than one year, or our expectations concerning the market conditions that exist during a liquidity event, or our access to funds, prove to be inaccurate . . . our ability to repay maturing indebtedness and fund operations could be significantly impaired.”); *id.* at 17 (“Liquidity risk could impair our ability to fund operations and jeopardize our financial condition.”).

288. There are numerous accounts about the recent financial crisis detailing how regulators and key industry players failed to see the forewarnings of an economic meltdown. See, e.g., COHAN, *supra* note 168; PAUL KRUGMAN, *THE RETURN OF DEPRESSION ECONOMICS AND THE CRISIS OF*

disregarded? What can firms do better to avoid being cast as Cassandras?²⁸⁹ How can Risk Factors be amended to better communicate serious risks facing public firms and the public at large?

In an attempt to answer those questions, this Article critiqued the current securities risk-disclosure framework and demonstrated that its ineffectiveness is rooted primarily in the faulty fundamental assumption of the rational person as the reasonable investor. Recognizing this shortcoming, this Article proposed a behavioral framework built on relative likelihood and relative impact of dynamic risks that accounts for the behavioral tendencies of real investors, not the unrealistic rational person of neoclassical economics.

Furthermore, the proposed behavioral framework has several important implications for securities regulation. First, this Article suggested that the framework can lead to a better capture of securities regulation. Second, this Article contended that the framework can better appeal to the underlying rationales of securities disclosure. Third, this Article demonstrated that the proposed framework can reverse the decline in financial literacy and readership in a marketplace that is growing more complex. Fourth, this Article discussed the opportunities under the proposed framework to leverage information technology to proliferate enhanced financial information to more investors. Lastly, this Article argued that the behavioral framework seeks not to undermine arbitrage but to enhance it.

Ultimately, no securities regulatory framework is perfect, but the current framework can be greatly advanced by a framework that accounts for the behavioral tendencies of real investors. A behavioral framework for securities risk would improve risk awareness, reduce information costs, increase financial literacy, and refine arbitrage. Before this new framework and similar regulatory approaches can materialize, people must recognize the limitations of the current system. Securities regulation is founded on an elegant, but faulty, assumption—that investors act

2008 (2008); LOWENSTEIN, *supra* note 201; LAWRENCE G. McDONALD & PATRICK ROBINSON, A COLOSSAL FAILURE OF COMMON SENSE: THE INSIDE STORY OF THE COLLAPSE OF LEHMAN BROTHERS (2009); HENRY M. PAULSON, ON THE BRINK: INSIDE THE RACE TO STOP THE COLLAPSE OF THE GLOBAL FINANCIAL SYSTEM (2010); ANDREW ROSS SORKIN, TOO BIG TO FAIL (2009); GILLIAN TETT, FOOL'S GOLD: HOW THE BOLD DREAM OF A SMALL TRIBE AT J.P. MORGAN WAS CORRUPTED BY WALL STREET GREED AND UNLEASHED A CATASTROPHE (2009).

289. See SORKIN, *supra* note 288, at 5 (“There were, of course, Cassandras in both business and academia who warned that all this financial engineering would end badly.”); see, e.g., EDITH HAMILTON, TIMELESS TALES OF GODS AND HEROES 211 (1999) (“Cassandra was the Greek mythological figure who had the gift of prophecy, but the curse that no one would believe her predictions.”).

entirely rationally.²⁹⁰ This faulty assumption has resulted in a good, but flawed, disclosure-based regulatory framework that needs continual perfecting. In order for disclosure to become a more powerful complementary regulatory tool, we must accept the need to address this faulty assumption as an incompletely theorized agreement, meaning that while there may be disagreements about how best to address it, there should be a consensus about the need to address it.²⁹¹ In a marketplace where investors, regulators, and managers all suffer from cognitive limitations, if we collectively recognize our shortcomings and construct mechanisms to mitigate their effects, regulatory progress becomes more achievable.

290. See ARIELY, *supra* note 70, at 239 (“We are really far less rational than standard economic theory assumes. Moreover, these irrational behaviors of ours are neither random nor senseless. They are systemic, and since we repeat them again and again, predictable.”); Hanson & Kysar, *supra* note 9, at 669 (holding that decisions are made through both a rational system and an emotionally driven experiential system); Ripken, *supra* note 161, at 146 (“[S]ubstantial evidence indicates that . . . assumptions [about investor] rationality and efficiency in information processing are faulty.”); Paul Krugman, *How Did Economists Get It So Wrong?*, N.Y. TIMES MAG., Sept. 6, 2009, <http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html?pagewanted=all> (“[E]conomists need to abandon the neat but wrong solution that everyone is rational and markets work perfectly. The vision that emerges as the profession rethinks its foundations may not be all that clear; it certainly won’t be neat; but we can hope that it will have the virtue of being at least partly right.”).

291. See Cass R. Sunstein, *Incompletely Theorized Agreements*, 108 HARV. L. REV. 1733, 1739 (1995) (“[P]eople often reach incompletely theorized agreements on a general principle. Such agreements are incompletely theorized in the sense that people who accept the principle need not agree on what it entails in particular cases.”).