Disclosure Universes and Modes of Information: Banks, Innovation, and Divergent Regulatory Quests*

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In 2013, a new system for mandatory public disclosure came into effect, the first since the creation of the Securities and Exchange Commission (SEC) in 1934. Today, major banks and certain other entities must make disclosures mandated not only by the SEC, but also by a new system developed by the Federal Reserve Board and other U.S. bank regulators acting in the shadow of the Basel Committee on Banking Supervision and the Dodd-Frank Act. Already, this parallel system, which stemmed in large part from a belief that disclosures as to the complex risks flowing from modern financial innovation were manifestly inadequate, dwarfs the SEC system in sophistication as to the quantitative aspects of market risk and the impact of economic stress.

The overall morphology of mandatory public information has changed in elemental ways, spanning two parallel regulatory universes with divergent ends and means. The SEC system is directed at the interests of investors and market efficiency, while the bank regulator system is directed at the well-being of the entities themselves and the stability of the financial system. The regulatory means diverge as well, not only as to specific risk-related disclosures, but even

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as to overarching concepts like "materiality" and the availability of private enforcement.

This Article is the first academic work to consider the new morphology of public information. Refining the conceptual framework for "information" introduced in a prior (2012) work ("Too Complex to Depict?"), I set out three approaches to information. First, the longstanding approach to information is termed the "descriptive mode," one that relies on "intermediary depictions" of objective reality. An intermediary—such as a corporation issuing shares—stands between objective reality and the investor. The corporation observes and analyzes the objective reality, crafts a depiction of the pertinent aspects, and transmits its depiction to investors. With revolutionary advances in computer- and web-related technologies, investors need no longer rely exclusively on the descriptive mode and its intermediary depictions. The "transfer mode" allows "pure information" about the objective reality to be transmitted directly to investors. The "hybrid mode" draws on elements of both of the other modes, and investors rely on "moderately pure information."

This Article also offers pathways for reform. In terms of modes, the most incremental step would be to improve the implementation of the descriptive mode, especially at the SEC. The key SEC disclosure requirements have been substantially frozen even as banking and financial innovation have undergone epochal changes. More fundamentally, regulators have invested almost entirely in the descriptive mode. Giving full consideration to all three modes—modal "informational neutrality"—would lead to a more diversified portfolio of informational strategies, one better suited to the informational challenges of financial innovation. The Article outlines examples of transfer and hybrid mode strategies and the need to address longstanding issues associated with confidential treatment requests and the Freedom of Information Act.

Reforms are also necessary at the level of the morphology. In the long run, the existence of parallel universes with divergent regulatory quests is unsustainable. The regulatory objectives of the two systems not only diverge, but sometimes conflict. A disclosure the SEC system deems essential for investor protection and market efficiency can be contrary to the bank well-being and financial system stability goals of the bank regulator system (and of the new Financial Stability Oversight Council). In the short run, boundary-setting and a modest form of "informational neutrality" across regulatory systems (including as to judicial review of rule-making) can promote coordination.

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I. Introduction: Parallel Universes, Innovation, and Modes of Information

A. Overview

In 2013, a new system for mandatory public disclosure came into effect in the United States, the first such system since the creation of the Securities and Exchange Commission (SEC) in 1934.1 Today, major banks and certain other entities must publicly disclose information mandated not only by the SEC, but also by a new system developed by bank regulators. Motivated in significant part by the risks posed by financial innovations that began to emerge in the 1980s and severe deficiencies in the associated risk disclosures, the new system’s ends and means differ in manifold respects from classic

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understandings. The new system is directed not at the regulatory ends of investor protection and market efficiency but, instead, at the well-being of individual banks and the stability of the financial system. The informational mandate of the new system is focused on a single, critically important, subject: the risks faced by major banks, especially the complex risks that now arise from derivatives and other financial innovations.

Already, the new bank regulator system dwarfs the SEC system in sophistication and granularity as to the quantitative aspects of two key subjects: market risk and the impact of economic stress. The SEC’s guide for statistical disclosure by bank holding companies remains substantially as adopted in 1976 and the SEC’s market risk disclosure rule remains exactly as adopted in 1997. Major banks today are not the traditional loan-centered businesses of the sort still prevailing in 1976 and the modeling of market risk today is substantially more advanced than in 1997. As to the quantitative impact of economic stress, there is nothing to compare: the SEC system has no corresponding requirements. The SEC regime does not address in a material way the nature, characteristics, or effectiveness of the models a bank relies on, whether under the bank industry guide, the market risk rule, or the SEC’s overarching risk disclosure item, the “Management’s Discussion and Analysis” (MD&A). The new bank regulator system reflects modern learning as to the modeling of market risk and the impact of economic stress as well as an appreciation of the idiosyncrasies of modeling.

Over the next few years, the new bank regulator system will expand beyond the subjects of market risk and the impact of economic stress to comprehend essentially all risk-related matters. As to these risk-related matters, one distinct possibility is that the SEC disclosure system might become increasingly peripheral and, with this, the primacy of investors and market efficiency that the SEC has always championed.

The overall morphology of mandatory public information has become a curious one. The morphology spans parallel regulatory universes that emerged independently and that are animated by divergent regulatory quests. All the while, both of the disclosure systems rely almost exclusively on a traditional approach to information that is structurally insufficient to address the informational challenges posed by modern financial innovation.

This Article is the first academic work to analyze either the new disclosure system or the overall morphology. Fundamental questions arise as to coherence, effectiveness, and robustness. This Article suggests pathways for reform both at the level of the two disclosure systems and at the level of the overall morphology. These suggestions for reforms are compelled by the divergences between the disclosure systems with respect to ends and means and by the insufficiency of the traditional approach to information used in both systems. As to the latter reforms, the Article refines, extends, and uses a conceptual framework for the nature of “information” published in 2012, a framework suggesting that, in an era of unprecedented financial and
technological innovation, a portfolio of approaches to information has become both essential and possible.

This context—risk disclosures of major banks, especially disclosures relating to financial innovations—and related issues are critical for at least three reasons. First, major banks and such activities are crucially important. Just four banks hold 93% of the $233.9 trillion notional amount of derivatives held by insured U.S. commercial banks and savings associations. The largest eight U.S. financial institutions hold $16 trillion of assets under GAAP accounting (when including the gross fair value of derivatives), an amount equal to the entire U.S. GDP. The September 15, 2008 bankruptcy of Lehman Brothers was the largest bankruptcy in U.S. history. The September 16, 2008 Federal Reserve rescue of American International Group (AIG), the other seminal event in the near-collapse of the global financial system, proved necessary in the wake of AIG’s credit derivatives-related exposures.

Second, the actual state of risk disclosures is worrisome. In April 2008, a report prepared at the request of the Group of Seven Ministers and Central Bank Governors concluded that weakness in public disclosures by financial institutions was one of the main causes of the global financial crisis then unfolding. Disclosures as to the institutions’ market risk and credit risk exposures related to structured products were a special problem. In late 2008, when the crisis peaked, the interbank lending market “froze.” Major banks were reluctant to lend to each other as they became unsure about the composition and true value of their would-be counterparties’ portfolios. Academics looking at this development have suggested that the relative transparency of banks appears to decrease during periods of financial crisis and can lead to runs. Banks with difficult-to-value assets, such as more exotic financial instruments, are especially vulnerable.


5. Id.

6. FIN. STABILITY FORUM, REPORT OF THE FINANCIAL STABILITY FORUM ON ENHANCING MARKET AND INSTITUTIONAL RESILIENCE 1, 8 (2008).


8. Id. at 82-83.

9. Transparency issues were also important in connection with the second phase of the global financial crisis, that relating to European sovereign debt. In December 2011, the General Manager of the Bank for International Settlements attributed the disruptions to bank funding markets in part to informational asymmetries. Investors and other market participants were skeptical as to the banks’ true exposures to “troubled sovereigns through bond holdings and derivatives.” Jaime Caruana, General Manager of the BIS, Keynote address to the FSB Roundtable on Risk Disclosure: Financial
Many market participants share these concerns over bank opaqueness. In December 2012, Paul Singer, a prominent hedge fund manager, was reported to have said that even with 110 investment professionals, he “cannot . . . understand the financial condition of any bank [or other] major financial institution” and that “[investment professionals] have no idea what that derivatives section means.” Some money managers avoid bank stocks because of difficulties in understanding how banks will fare under different economic scenarios, especially banks heavily exposed to derivatives. Some bankers themselves admit to a major transparency problem.

Third and most important from the standpoint of the basic engineering of disclosure systems, there is a pattern that is troubling and perhaps puzzling: beliefs about the opaqueness of major banks persist even as the banks provide careful, voluminous information to the public. The Form 10-K for 2012 for the Bank of America Corporation is 288 pages; Citigroup Inc.’s, 299 pages; The Goldman Sachs Group, Inc.’s, 246 pages; and JPMorgan Chase & Co.’s, 352 pages—not counting exhibits and information incorporated by reference from proxy statements. The English-language 2012 annual report of Credit Suisse Group AG is 400 pages, excluding the Appendix. This, despite the liberal use of microscopic font.

These financial institutions’ disclosure documents dwarf those of non-financial companies. The 2012 Form 10-Ks for the two largest U.S. companies by market capitalization, Apple Inc. and Exxon Mobil Corporation, are 81 pages and 115 pages—roughly one-third and one-half, respectively, of the above U.S. financial institutions.


12. In September 2013, Sandy Weill, the former Chief Executive Officer of Citigroup, stated that “[t]he problem with the financial industry is you need more transparency” and that “[i]f you don’t have transparency, people aren’t going to understand.” Squawk Box (CNBC television broadcast Sept. 10, 2013), http://video.cnbc.com/gallery/?video=3000197127&play=1.


for Nestlé, the world’s largest food company, is 56 pages—roughly one-seventh that of Credit Suisse.\textsuperscript{16}

In short, the public disclosures of banks have been approaching some obesity limit. Yet both regulators and market participants believe that inadequate information is being provided to the public. This unlikely pattern has even animated light-hearted banter at Davos.\textsuperscript{17}

In part, this pattern can be attributed to the greater complexities of major financial institutions and of their activities relative to non-financial companies. Simplification of reality itself, whether at the bank level or at the financial product level, would make disclosure easier. Simpler realities are simpler to observe, analyze, and describe.\textsuperscript{18} Simplification would offer an end-run around the informational challenges posed by complex realities. However, there can sometimes be major, unacceptable costs in doing so.\textsuperscript{19} In this Article, I will leave aside consideration of the simplification of reality or other strategies directed at the substantive nature of financial institutions or the products and activities that the institutions are involved in.\textsuperscript{20} Instead, I will deal with matters more directly related to the informational side.


\textsuperscript{17} At the Davos gathering in January 2013, Paul Singer complained that global banks made “completely opaque” disclosures and that the unfathomable nature of banks’ public accounts made it impossible to know which were “actually risky or sound.” He noted that derivatives positions, in particular, were difficult for outside investors to parse. Tom Braithwaite & Patrick Jenkins, JPMorgan and Elliott Chiefs Clash in Davos, FIN. TIMES, Jan. 23, 2013, http://www.ft.com/cms/s/0/9977e38c-6553-11e2-8b03-00144feab49a.html.

Jamie Dimon, the CEO of JPMorgan Chase, replied, “[o]ur 10K is 400 pages long . . . w[hat would you like to know?” Davos Dispatches: Apologizing—to a Point, WALL ST. J., Jan. 24, 2013, at A7.


\textsuperscript{19} Some radical simplifications of reality, such as forcing a break-up of too-big-to-fail banks, involve extremely large costs not only for banks and their stakeholders but also for the country and for the overall financial and economic system. It is wholly unclear whether the benefits of breaking up such banks could be conclusively shown to outweigh such fearsome costs. I continue to refrain from taking a position on such break-ups. In Too Complex to Depict?, I stated that:

\begin{quote}
If . . . a major bank is indeed “too complex to depict” and pure information-type models are insufficient, should we consider the question of whether it is also “too complex to exist”? Naturally, any consideration of this and related “too big to fail” matters must appropriately reflect the full range of social and private benefits (and costs) of major banks, and of financial innovation as to which they play such an important role.
\end{quote}

Id. at 1612; cf. Gillian Tett, The Banks that are Too Complex to Exist, FIN. TIMES, June 7, 2012, http://www.ft.com/intl/cms/s/0/65281562-b0e1-11e1-a2a6-00144feabde0.html#axzz2xkvsuCDY (the then-U.S. Managing Editor of the Financial Times stating that “if some banks today are ‘too complex to depict,’ then perhaps it is time to recognise that they are also ‘too complex to exist,’ as Prof Hu says”).

\textsuperscript{20} Although not motivated by concerns over opaqueness, simplification both at the level of banks and at the level of financial products is already occurring. At the level of banks, this is occurring in part because of the impact of the Volcker Rule preventing banks from engaging in proprietary trading. See, e.g., Editorial, Finally, the Volcker Rule, N.Y. TIMES, Dec. 12, 2013, http://www.nytimes.com/2013/12/13/opinion/finally-the-volcker-rule.html. At the level of financial
A June 2012 article, *Too Complex to Depict?*,\(^{21}\) suggested that this unlikely pattern is also the result of the core approach to information that the SEC has implicitly relied on since its creation. This approach may be called the "descriptive mode of information." An intermediary—such as a corporation issuing shares—stands between the investor and an objective reality. The intermediary observes that reality, analyzes it, crafts a depiction of the reality's pertinent aspects, and transmits that depiction to investors. Securities rules direct that the "intermediary depictions" be accurate and complete, and private lawsuits and public enforcement efforts seek to ensure compliance with the rules. "Information" is thought of as, if not equated to, such depictions.

For structural reasons, the descriptive mode of information on which the SEC disclosure system substantially relies is insufficient to meet the informational challenges of financial innovation. Under the prior work's conceptual framework, advances in computer- and web-related technologies now make possible promising new modes of information. The SEC disclosure system should move beyond the traditional reliance on the descriptive mode and begin to also use new modes of information, including a "transfer mode" rooted in "pure information" about objective reality. A portfolio of informational approaches is needed to help investors triangulate the truth, one that relies on both the descriptive mode and the transfer mode—and the full spectrum of approaches between these opposite extremes. To show the structural inadequacies of the descriptive mode, and the potential of new modes of information, the June 2012 work relied in part on the evidence as to the credit derivatives-related debacle involving JPMorgan Chase (JPM) that had started coming to light in May 2012.

The new bank regulator system also largely relies on the descriptive mode of information, and is thus subject to that approach's structural inadequacies. As a foundational matter, the current Article refines and extends the prior work's conceptual framework. In connection with this framework, this Article also considers newly available information as to the JPM derivatives debacle to determine the viability of the prior work's initial analysis.

This Article is structured as follows. Section I.B offers a brief introduction to some of the essential terminology of the 2012 conceptual framework, relying in part on schematic diagrams. In this Article, I set out three "modes" of information: (1) the "descriptive mode," relying on "intermediary depictions"; (2) the "transfer mode," relying on "pure information"; and (3) the "hybrid mode," a mode drawing on elements of both of the other modes, and relying on "moderately pure information." In Section I.B, I refrain from discussing the respective advantages and disadvantages of the three modes.

Parts II and III examine the core ends and means of the two disclosure systems, especially as they relate to risk- and financial innovation-related products, this is occurring in part because of the Dodd-Frank Act requiring the centralized clearing of most swaps.

\(^{21}\) Hu, *Too Complex to Depict?*, supra note 18.
information pertinent to major banks. Part II covers the SEC disclosure universe, starting with the SEC’s regulatory ends of investor protection and market efficiency. It then proceeds to discuss the SEC’s regulatory means. First, there are general elements such as the quantum of information and the nature of enforcement. As to the quantum of information, the essential test is an investor-oriented notion of “materiality.” As to enforcement, public enforcement is supplemented by private lawsuits, including class actions. Second, there are specific requirements flowing from the SEC’s disclosure guide for bank holding companies, the MD&A, and the market risk rule.

Part III covers the bank regulator disclosure universe, and starts by discussing its origins and its regulatory ends of bank well-being and financial system stability. Part III then proceeds to the regulatory means. The general quantum of information required in this system is different: the materiality touchstone here is less focused on the well-being of investors and more on the well-being of banks. And, in contrast to the SEC system, no private enforcement is likely to be possible. Currently, the specific requirements flow from market risk-related mandates set out in the U.S. Basel 2.5 Adopting Release and the company-run stress test-related mandates set out in the Dodd-Frank Stress Testing Rule.

Part IV analyzes how the descriptive mode, the approach to information primarily relied on by both the SEC and the bank regulators, is structurally inadequate in the face of financial innovation. Newly available evidence on the JPM derivatives debacle is consistent with the preliminary analysis of the debacle offered in the 2012 article and confirms the presence of such structural inadequacies.

Part V suggests some pathways for reform. The first set of pathways relates to modes of information, considered independently of the overall morphology of public information. Here, I begin with an analysis of how to improve the existing implementations of the descriptive mode, especially with respect to the SEC (Section V.A). The analysis will be relatively brief, since many of the changes flow directly from the characteristics of the two disclosure systems discussed in Parts II and III, and from the structural roadblocks inherent to the descriptive mode discussed in Part IV. I then set out two new modes of information, the transfer mode and the hybrid mode, and suggest systematic efforts to incorporate such new modes in public disclosure systems (Sections V.B and V.C). Resolving uncertainties flowing from the administrative aspects of confidential treatment requests and the underlying Freedom of Information Act exemptions is essential to fully realizing the potential of the transfer mode. Each of the three modes of information has virtues and faults: I conclude discussion of this first pathway by urging informational portfolio diversification (Section V.D). Regulators should not stake their entire disclosure strategy on the descriptive mode of information. “Informational neutrality” across modes is needed, one in which full
consideration is given to each of the three modes as a candidate for inclusion in the regulatory portfolio.

The second set of pathways relates to the multiplicity of disclosure universes with divergent ends and different resources and expertise. Section V.D begins by showing the unsustainability of the current morphology of public information. Section V.E proceeds to show the need for harmonization of the two disclosure systems. This harmonization would be furthered through boundary-setting, taking account of the respective strengths of the two sets of regulators and using a modest form of "informational neutrality" across disclosure systems.

B. The Conceptual Framework as to Modes of Information: Essential Terminology and Schematics

The conceptual framework as to modes of information centers on the multiple means a mandatory public disclosure system can rely on to help market participants become informed about the objective reality of business entities. This Section I.B is meant only to introduce some of the essential terminology and does not discuss the respective merits of the different modes.

Under this framework, a public disclosure system can rely on one or more of three basic approaches to information—what can be termed "modes of information": the "descriptive mode," the "transfer mode," and the "hybrid mode." These modes are simplified ways of referring to points along a spectrum of approaches: the most extreme version of the descriptive mode at one of ends of the spectrum, and the most extreme version of the transfer mode at the opposite end. The descriptive mode starts shading into the hybrid mode from one direction while the transfer mode starts shading into the hybrid mode from the other.

Figure 1 diagrams the descriptive mode, the traditional approach. "Objective reality" is set out as the rectangle at the left. By "objective reality," I am referring loosely to the entire universe of virtually infinite, random, disorganized facts that exist irrespective of the presence of any observer—whether or not the facts are perceptible by anyone. The loose boundaries of the rectangle and the binary digits in the rectangle are intended to suggest the entropy, the "messiness," of objective reality.
In the context of a major bank, the bank-specific aspects of objective reality would include such matters as each existing or prospective financial asset a bank might hold, the debt, tax, or other liabilities the bank might have, the investment projects it has or might be considering, the human capital it has or might have, the litigation it is involved in or might be involved in, and so forth—and the risk-return characteristics of each of the foregoing and all of the foregoing considered as a whole. Facts that are less bank-specific in nature might include such matters as industry-wide regulatory, tax, and intellectual property issues.

A fact need not be perceptible by any observer to be considered part of objective reality: the fact would be analogous to a sub-atomic particle that exists but, at least with current technology, cannot yet be seen. Similarly, if a bank’s portfolio of exotic financial products creates exotic risks that are not detected, much less quantified, by current financial models, those exotic risks nevertheless exist and are part of objective reality.

In some contexts involving financial innovation, “objective reality” may be subject to multiple meanings. In Too Complex to Depict?, I showed this in the context of asset-backed securities, specifically the waterfalls that define what the respective tranche-holders receive from the total cash flow available for distribution. Figure 1 assumes that objective reality is not subject to multiple meanings.

The business entity is represented by the oval at the center of Figure 1, situated between objective reality at the left and the market participants at the right. Staff at the business entity must observe, analyze, and then describe what it believes to be the pertinent aspects of the objective reality. The result of this “observe-analyze-describe” process at the business entity—the description, or “intermediary depiction”—is diagrammed as a book labeled as “Disclosure Document” in Figure 1. In place of the entropy of objective reality is an organized description—a “story” with a beginning, middle, and end, based on words, graphs, accounting and risk numbers, and other “depiction tools.” The objective reality has been distilled and organized by the business entity, at much expense and based on the entity’s judgment and expertise. Market participants are relieved of this costly and demanding task.

Market participants observe and analyze the intermediary depiction. Some market participants may do so on their own; others, such as the bottom two

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22. See Hu, Too Complex to Depict?, supra note 18, at 1636-42 (setting out alternate conceptions of the pertinent reality as to the waterfalls). At the October 18, 2012 Public Company Accounting Oversight Board hearing at which the 2012 article was presented, Chairman James Doty characterized the article as “absolutely terrifying,” pointing to, among other things, this concept that even objective reality can sometimes be subject to alternative meanings. See Public Company Accounting Oversight Board, Auditor Independence and Audit Firm Rotation, PCAOB Rulgemaking Docket Matter No. 37, Public Meeting (Oct. 18, 2012), at 127-28 (statement by James R. Doty, chairman) (unofficial transcript by Neal R. Gross), http://pcaobus.org/Rules/Rulemaking/Docket037/2012-10-18_Transcript_Houston.pdf.
market participants, may do so on a collaborative basis. Market participants cannot, however, see for themselves all of the pertinent aspects of the objective reality that the business entity relied on in generating the depiction. The business entity’s depiction will have to suffice, apart from whatever information that market participants may have from other sources.

Advances in computer- and web-related technologies now facilitate an approach more focused on the “transfer” of objective reality itself—or, more precisely, information that is highly mimetic of objective reality and exists independently from any observer. This approach can be called the “transfer mode” and such information can be called “pure information.”

As illustrated in Figure 2, with the transfer mode, the business entity no longer stands between objective reality (on the left) and the market participants (on the right). The entity is not engaged in the observe-analyze-describe process that leads to an intermediary depiction for which the entity is legally responsible. With the transfer mode, the entity is involved only with respect to the mechanical task of, in effect, transmitting pertinent aspects of objective reality in the form of pure information. This information can be downloaded, observed, and analyzed by market participants.
To illustrate the concept of "pure information," consider Mount Everest as the objective reality. While Mount Everest itself cannot be transferred to a person sitting at his computer in Manhattan, pure information in the form of, for instance, a photo of Mount Everest can be. Such pure information flows largely from the inherent characteristics of Mount Everest itself and modestly from the process used to generate that information (e.g., the camera and the image processing software used by the photographer). So long as the person at the computer is aware of the full particulars of the specific process used and the distortions and other limitations of that process, that person can isolate Mount Everest's inherent characteristics from the artifacts that the process introduces.

In Figure 2, pure information is diagrammed as a photo set in a picture frame. The differences between the binary digits set out in the picture frame and those set out in the rectangle representing objective reality are meant to suggest the distortions and limitations of the process used to generate the pure information. The rectangle is also a large one, suggesting that the breadth of information that is captured by the wide angle lens on the camera, only some of which information might be interesting to market participants.

With the transfer mode, the task of observing and analyzing objective reality no longer falls on the business entity, but instead on the market participants themselves. Many of the market participants may have neither sufficient incentives nor expertise to do so. In Figure 2, this kind of market participant is shown as an "observe only" market participant. Other market participants will observe and analyze on their own while yet others may do so on some form of collaborative basis. These other types of market participants also appear in Figure 2.

The "hybrid mode" of information draws on elements of the descriptive mode and the transfer mode, and results in "moderately pure information" being provided to market participants. There are a number of different ways in which this can occur.

One example of the hybrid mode advanced in Too Complex to Depict? was the "common bank models" approach. This example is illustrated in Figure 3.

Under this common bank models approach, a regulator comes up with a set of mathematical models intended to gauge the risk-return characteristics of a variety of trading and derivatives positions and a variety of other assets. These models are publicly disclosed. With respect to each bank, models developed by the regulator are applied to the bank's own, idiosyncratic, assets. The risk numbers that result from using these regulator-developed models are provided to market participants. Use of the regulator-provided models is mandatory, irrespective of whether the bank believes the regulator's models are any good and irrespective of whether the regulator's models are in any way consistent with the bank's own models.

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Here, in contrast to the descriptive mode, the business entity is not required, or even permitted, to rely on its own judgment and expertise to analyze and then describe the pertinent aspects of objective reality. As illustrated in Figure 3, with this common bank models approach, the regulator is intervening at the "analyze" stage of the normal observe-analyze-describe process.

The regulator is insisting that the analysis not be based on the bank’s own judgment (i.e., the bank’s own models) but the regulator’s (i.e., the regulator-developed models). Thus what the market participants see is not a "description" or "intermediary depiction" of the normal sort. The market participants instead see risk-related numbers that flow mechanically from the regulator-developed models.
The common bank models’ approach also stands in contrast to the transfer mode. With the transfer mode, the entity’s role is limited to transmitting pure information to market participants. Here, the entity is not transmitting such information.

This processed information is neither a “description” in the normal sense, nor is it pure information. For convenience, I have termed it “moderately pure” information.

Whatever mode or modes of information a public disclosure system uses, the system has two essential components. The first component relates to general requirements governing all mandatory disclosures. Key aspects include the general quantum of information required (e.g., what information should be considered “material”) and the enforcement mechanisms (e.g., whether private enforcement, especially class actions, should be allowed). The second component relates to the specific requirements as to what subjects must be covered (e.g., market risk), how those subjects are to be covered (e.g., the types of information and their granularity), and the periodicity of disclosure (e.g., quarterly, semi-annually, or annually).

The choice of mode of information, when more than one is available, can have a disparate impact on a disclosure system’s effective characteristics. Assume, for instance, that both descriptive mode information (i.e., intermediary depictions) and transfer mode information (i.e., pure information) are generally subject to private enforcement through class actions.

With descriptive mode information, the business entity is responsible for the depiction’s accuracy and completeness. With the transfer mode, the entity’s role would be limited to one of transmission: the entity must transmit the pure information that is supposed to be transmitted. This transmittal task is more mechanical than the observe-analyze-describe process leading to the intermediary depiction. Moreover, deficiencies in transmission might be easier to detect than misstatements and omissions in a depiction. The likelihood of liability for the entity is probably reduced under the transfer mode. The availability of private enforcement will thus have less of an impact on the provision of pure information.

II. The SEC Disclosure Universe

A. Regulatory Ends: Investor Protection and Market Efficiency

From the SEC’s creation in the 1930s, the agency has spearheaded federal efforts to ensure that corporations provide fulsome information to the public. Indeed, the SEC’s activities have been largely animated by its views on the
roles that public information can play, views embodied in what is commonly referred to as its "disclosure philosophy."  

The SEC's philosophy was grounded not in social science, but in popular writings of Louis Brandeis published decades prior to the SEC's creation, one of which famously proclaimed, "[p]ublicity is justly commended as a remedy for social and industrial diseases. Sunlight is said to be the best of disinfectants; electric light the most efficient policeman."  

Brandeis contemplated that disclosure would not only help deter abusive insider behavior (such as excessive underwriting fees) but also help investors in their decision-making. He explicitly rejected the idea that law should go beyond the informational realm and into substantive decision-making.  

The disclosure philosophy contemplated that the SEC would generally limit itself to promoting a robust informational predicate. Relying on this predicate, investors would make their own decisions and market forces would determine whether corporations undertake securities offerings, what form the securities would take, and what the offering and trading prices would be. By 1961, one observer stated matter-of-factly that the Securities Act of 1933 (the "Securities Act") "is essentially a legislative device to obtain certain basic information essential to an investment analysis."  

Four decades after the creation of the SEC, a theoretical construct emerged into general public consciousness: the efficient markets hypothesis (EMH). The EMH offered a social science gloss to both components of the disclosure philosophy. The EMH emphasized the importance of publicly available information to decisions by market participants and also suggested how well the market seemed to process that information, providing additional rationales for the SEC to refrain from moving beyond its modest informational confines.  

In January 1976, the SEC established an advisory committee of prominent outside experts for a comprehensive review of the corporate disclosure system and the role of the SEC, partly in response to EMH scholarship. The

25. LOUIS D. BRANDEIS, What Publicity Can Do, in OTHER PEOPLE'S MONEY AND HOW THE BANKERS USE IT 92, 92 (1914).
26. Id. at 103-04.
30. DISCLOSURE ADVISORY COMMITTEE REPORT, supra note 29, at 1-11.
Advisory Committee on Corporate Disclosure ("Disclosure Advisory Committee") was composed of eight prominent outside experts and chaired by an SEC Commissioner. With the help of a full-time staff of eight to ten people, it issued a report after about two years of study. The Disclosure Advisory Committee found the SEC's disclosure system to be sound and, without explicitly endorsing the EMH, clearly used it as an intellectual cornerstone. The EMH has subsequently influenced federal securities regulation in manifold ways, including the streamlining of procedural requirements as to corporate disclosures and, more controversially, as to private securities class actions. (This is notwithstanding the subsequent research challenging the EMH and real world developments like the stock market crash of 1987, the dot-com bubble of the late 1990s, the "flash crash" of May 6, 2010, and the easy-money-driven distortions in asset pricing of today.)

The EMH and associated corporate governance developments emphasized how a robust informational predicate could further proper market pricing and protect investors—especially shareholders. From a market pricing standpoint, the SEC, by promoting a robust informational predicate, satisfies one of the essential conditions to securities prices bearing at least some proximate relationship to their intrinsic values. Economy-wide, well-informed market efficiency can contribute to the proper allocation of real resources across firms and industries.

From an investor protection standpoint, all investors are automatically protected from absurd bargains as they trade. And those investors who aspire to outwit the market have readily available much of the informational raw material necessary for their efforts.

Investors who are shareholders particularly benefit: market efficiency helps ensure that corporate managements adhere to longstanding state law fiduciary principles that generally require that corporations be run primarily for the benefit of shareholders, not bondholders. Consistent with such principles,
boards of directors routinely use stock prices in monitoring executive performance and use compensation structures rooted in stock prices to align the interests of executives and shareholders. The market for corporate control is facilitated by market efficiency: where incumbent management is unable or unwilling to further the interests of stockholders, stock prices that reflect this pattern may encourage outsiders to attempt to oust the incumbents. In the normal corporate governance context, "market discipline" is used to refer to such market forces pressuring management to act in the best interests of the shareholders.\(^{35}\)

In short, the SEC's disclosure system seeks to promote a robust informational predicate for the purposes of market efficiency and the protection of investors (and perhaps especially, shareholders). Under the SEC's disclosure philosophy, what the market or investors do on the basis of the informational predicate is outside of the SEC's purview. Such substantive matters as the well-being of a corporation or its stock price fall in the province of market participants, not that of the SEC.

B. Regulatory Means: The Descriptive Mode and the SEC's Intermediary Depiction Model

From the beginning, the SEC has substantially relied on the descriptive mode of information. At the enactment of the Securities Act, the core provisions required that the issuer disclose in the registration statement filed with the Federal Trade Commission\(^{36}\) and in prospectuses available to investors, the items of data set forth in Schedule A.\(^{37}\) Schedule A required not only disclosure of the issuer's financial records, but also "disclosure of information about the firm's business, need for capital, officers, and the costs of the securities issuance."\(^{38}\)

The substantial reliance on the descriptive mode has continued to this day. As will be discussed shortly, the "Management's Discussion and Analysis" ("MD&A"), the central item of the SEC's disclosure toolkit, is expressly "intended to give the investor an opportunity to look at the company through the eyes of management."\(^{39}\) Changes to the SEC's disclosure system over the

\(^{35}\) As to the distinction between the welfare of the (diversified) shareholder and the welfare of the business entity, see Section III.B and the sources in supra note 34.

\(^{36}\) U.S. SEC. & EXCH. COMM'N, SECOND ANNUAL REPORT OF THE SECURITIES AND EXCHANGE COMMISSION: FISCAL YEAR ENDED JUNE 30, 1936, at 1 (1936) (detailing that the SEC was not created until 1934, with the enactment of the Securities Exchange Act of 1934). Prior to September 1, 1934, the Securities Act was administered by the Federal Trade Commission. Id.

\(^{37}\) SELIGMAN, supra note 24, at 70.

\(^{38}\) Id.

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past eight decades have been at the periphery and have not involved departures from the descriptive mode. These changes include efforts to encourage business entities to make their disclosures more comprehensible (most notably former SEC Chairman Arthur Levitt's efforts at requiring the use of "plain English" in disclosures⁴⁰), accessible to investors (e.g., by EDGAR-izing filings to facilitate easy downloading by investors⁴¹), and not unduly burdensome (e.g., by integrating the Securities Act of 1933 and the Securities Exchange Act of 1934 (the "Exchange Act") disclosures⁴² in situations likely to be justified by the EMH).

Past and present, the nature of the information generated under the SEC's disclosure system flowed primarily from the company's depictions. The longstanding, omnipresent reliance on the descriptive mode has had the consequence of "information" being commonly conceived of as, if not equated to, these intermediary depictions. The SEC's system of mandated public information is commonly referred to as the SEC "disclosure" system. Information is implicitly conceptualized as requiring the company's active involvement in offering a description of the pertinent objective reality.

With respect to banks and the subject matter of risk, the SEC's intermediary depiction model has two sets of functional elements. The first set is general in nature (i.e., not industry or subject matter specific) and is discussed in Subsection II.B.1. The second set relates to banks and the subject matter of risk and is discussed in Subsection II.B.2. Therein I discuss the bank holding company "industry guide," the "MD&A" requirements, and the market risk rule.

1. General Elements: An Investor-Oriented "Materiality" Quantum and Public and Private Enforcement

As a legal matter, what a business entity needs to disclose depends heavily on the specific context, most notably the particularities of the pertinent SEC form. Thus, a company issuing securities to the public would make disclosures required by the pertinent Securities Act registration statement form (e.g., Form S-1 in the case of an initial public offering). Similarly, the topics covered in the company's ongoing Exchange Act filings would depend on the specifications of the pertinent Exchange Act form (e.g., Forms 10-K, 10-Q, 8-K, or Schedule 14A).

As a general matter, the intent of these various forms considered as a whole is to ensure that all "material" information about a corporation is provided to the public. "Materiality" is generally to be determined under standards prescribed in *TSC Industries v. Northway*, a 1976 Supreme Court case addressing an allegedly misleading proxy statement used in connection with a merger. *TSC Industries* offered three formulations of materiality that the Court intended to be synonymous, one formulation being that "there must be a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of the information made available."\(^{44}\)

Thus, in connection with the SEC's 1996 reexamination of some of the fundamental concepts of the regulatory framework for public offerings, securities market trading, and corporate reporting, the SEC issued a concept release stating that "[t]he [Securities Act] and the issuer disclosure provisions of the [Exchange Act] are premised on the view that investors are best protected in making investment decisions if they are presented with *full and fair disclosure of all material information about the investments*."\(^{45}\) Two decades earlier, the Disclosure Advisory Committee, in justifying the SEC disclosure system, had also concluded that "[m]arket forces alone are insufficient to cause *all material information* to be disclosed."\(^{46}\)

While materiality does not automatically impose a duty to disclose under anti-fraud provisions of the federal securities laws,\(^{47}\) the law comes very close. Thus, the SEC rules pertaining both to the Securities Act registration statements and the Exchange Act reports explicitly require that filers provide not only the information specifically prescribed to be included but also "*further material information, if any, as may be necessary to make the required statements, in the light of the circumstances under which they are made, not misleading*."\(^{48}\) Moreover, all provisions of federal securities laws imposing liability for misrepresentations or omissions require that the misrepresentation or omission be material.\(^{49}\)

The SEC informational mandate is not merely a matter of "law on the books." Failures to provide the requisite quantum of information can result in

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44. *Id.* at 449.
49. See, e.g., the Securities Act § 11 and the Exchange Act § 10(b).
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public enforcement that has generally been more aggressive than in other countries, at least prior to the global financial crisis, as well as private enforcement.\textsuperscript{50} Although the SEC has authority to initiate only civil proceedings, the U.S. Attorneys have the authority to bring criminal proceedings and, beginning with the insider trading scandals of the 1980s and the Enron scandal of 2001, such prosecutions have become increasingly common.\textsuperscript{51}

The contrast in overall enforcement of securities laws is understated by simply looking at differences in public enforcement. In the United States, private enforcement supplements public enforcement and results in greater financial sanctions; in Europe, on the other hand, private securities class actions are unknown and contingency fees are not permitted.\textsuperscript{52} Although private securities lawsuits as practiced in the United States unquestionably raise a number of troubling issues and the U.S. Supreme Court is soon to decide whether to curtail such lawsuits,\textsuperscript{53} even harsh critics of such lawsuits concede that such actions help deter fraud.\textsuperscript{54}

2. Specific Elements: Banks and Risk

The elements of the SEC disclosure system most pertinent to banks and the subject matter of risk arise from three sources, set out below in chronological order:\textsuperscript{55}


\textsuperscript{53} See Transcript of Oral Argument, Halliburton Co. v. Erica P. John Fund, Inc., No. 13-317 (2014), http://www.supremecourt.gov/oral_arguments/argument_transcripts/13-317_e18f.pdf. The case centers on whether to limit plaintiffs' ability to rely on a presumption that class members in a securities fraud class action relied on misstatements. Without this "fraud-on-the-market" presumption of reliance, it would be difficult for plaintiffs to maintain securities class actions.

\textsuperscript{54} See, e.g., William W. Bratton & Michael J. Wachter, The Political Economy of Fraud on the Market, 160 U. PA. L. REV. 69, 73 (2011) (stating that the fraud-on-the-market cause of action, the primary class action vehicle under federal securities laws, "is thought to deliver" on the promise of deterrence against future fraud, but "only a little").

\textsuperscript{55} I leave aside two other requirements. First, Item 503(c) of Regulation S-K requires a registrant to provide "where appropriate . . . a discussion of the most significant factors that make the offering speculative or risky." Regulation S-K, 17 C.F.R. § 229.503(c) (2013). I omit discussion of this because, if included, this discussion is largely subsumed by "MD&A" disclosures. Second, Section 956 of the Dodd-Frank Act requires the SEC and other financial regulators to jointly adopt rules mandating disclosure of the structures of incentive-based compensation arrangements and prohibiting arrangements that encourage inappropriate risk-taking. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 956, 124 Stat. 1376, 1903-04 (2010) (codified as amended in scattered sections
(1) an industry guide, the "Guides for Statistical Disclosure by Bank Holding Companies" ("Bank Industry Guide") (adopted by the SEC in 1976);56

(2) Item 303 of Regulation S-K, the "Management’s Discussion and Analysis of Financial Condition and Results of Operations" (MD&A), an extremely comprehensive set of disclosure requirements applicable to all companies, with a special focus on a company’s future prospects (adopted in its current framework in 1980 and substantially refined later that decade);57 and

(3) Item 305 of Regulation S-K, a set of disclosure requirements on market risk inherent in financial instruments, including derivatives, held by companies ("Market Risk Rule") (adopted in 1997).58

i. Bank Industry Guide

In 1976, the SEC authorized for publication a guide intended to provide bank holding companies with a convenient reference to the statistical disclosures sought by the Division of Corporation Finance in the Securities Act registration statements and the Exchange Act reports.59 This represents the only effort the SEC has ever taken to comprehensively address the specific context of banks.

The SEC explicitly premised the creation of the guide on the increasing difficulty investors had in assessing the prospects of such companies without “detailed information concerning the company’s sources of income and exposure to risks,” in view of the increasingly diverse nature of such banking


entities. "[M]any of the disclosures . . . are intended to provide information to facilitate analysis and comparison of sources of income and exposure to risks," which would help investors assess the ability of the entity to move into or out of situations "with favorable or unfavorable risk/return characteristics." In particular, the focus was on the loans the banks extended and the risks and uncertainties associated with such loans. The guide called for straightforward information on such matters as the types of loans, their maturities, interest rate characteristics (fixed or floating), loan loss experience, and breakdowns of loans into nonaccrual, past due, and restructured nonperforming categories. The required information was to be reported in terms of dollars and percentages. Only simple algebra, not formal mathematical modeling, was called for.

It has been nearly four decades since the adoption of the Bank Industry Guide. At its adoption, Apple was operating in a garage, the last U.S. troops had just left Thailand, and the first Rocky movie was about to be released in New York.

The guide has remained largely unchanged even as epochal changes in the nature of banking have occurred. The focus on loans remains even as the role of loans at major banks has declined precipitously. There has been no effort to update the guide to reflect the financial innovations and related issues that did not exist in 1976.

At the time the Bank Industry Guide was adopted, the traditional role of banks as financial intermediaries prevailed: "to make long-term loans and to fund them by issuing short-term deposits." Commercial banks now are a far less important source of funds for borrowers, and their assets only accounted for 18% of total financial intermediary assets at the end of 2008, compared to

60. Id. at 39,008.
61. Id.
40% in the 1960-1980 period. Trading and fee income as a percentage of assets has nearly doubled since 1980.

The Bank Industry Guide has failed to consider the modern process of financial innovation that began around the time of its adoption and that has come to pose the most risk challenges for banks. This process began with the Fischer Black and Myron Scholes option pricing papers of 1972 and 1973. Banks created the first over-the-counter (OTC) derivatives in the late 1970s, apparently in secret. By the 1980s, OTC derivatives had become an important feature of corporate and international finance, and the risks they were perceived to have created for banks led to the first attempt at the international coordination of bank capital adequacy levels—the 1988 Basel agreement that will be discussed in Section III.A. As of June 30, 2013, the world market for over-the-counter derivatives amounted to $20 trillion in gross market value and $668 trillion in notional value.

The Bank Industry Guide, apart from failing to recognize the drastically different asset-liability structures of banks, also fails to recognize that in the late 1970s and 1980s, some financial institutions had already started working on sophisticated mathematical models for institutional risk management. With such models, including Value-at-Risk (VaR) models, banks could better allocate their capital when facing trade-offs between reward and risk.

Rip Van Winkle slept through the American Revolution and, when he woke up, was surprised about the reactions when he proclaimed himself a loyal subject of King George III. A revolution has occurred in banking and financial science: according to Merton Miller, the spate of financial innovation that occurred from 1970 to 1990 is unprecedented.

The Bank Industry Guide has not woken up to the new realities. Far more useful information flows from the MD&A and the Market Risk Rule next discussed, both of which rely overwhelmingly on the descriptive mode.

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66. Id.
67. Id. at 247.
68. See Fischer Black and Myron Scholes, The Valuation of Option Contracts and a Test of Market Efficiency, 27 J. Fin. 399 (1972); Fischer Black and Myron Scholes, The Pricing of Options and Corporate Liabilities, 81 J. Pol. Econ. 637 (1973). As to the significance of these papers, see, for example, Bernstein, supra note 28, at 203-30.
70. Id. at 377-79.
ii. MD&A

Until the 1970s, the SEC largely limited corporate disclosure in filings to historical or "hard" information. Disclosure of projections, opinions, analyses, and other "soft" information was prohibited. Such information could be extremely useful to investors, and corporate management would be in a stronger position to dissect historical patterns and assess future prospects, as Homer Kripke and other critics of the traditional approach noted. But concerns that such information would receive undue credence from investors or be vulnerable to manipulation by companies prevailed.

The SEC moved slowly from precluding soft information, to permitting it, and then to mandating it. Most importantly, in 1987, the SEC moved to enhance the "Management's Discussion and Analysis of Financial Condition and Results of Operations" (MD&A) disclosure required in both the Securities Act registration statements and the Exchange Act Forms 10-Q and 10-K. Thus, corporations would be required to offer an MD&A at least quarterly.

In a 1987 concept release, the SEC stated the purpose of the enhanced MD&A as follows:

The Commission has long recognized the need for a narrative explanation of the financial statements, because a numerical presentation and brief accompanying footnotes alone may be insufficient for an investor to judge the quality of earnings and the likelihood that past performance is indicative of future performance. MD&A is intended to give the investor an opportunity to look at the company through the eyes of management by providing both a short and long-term analysis of the business of the company. The Item [Regulation S-K, Item 303] asks management to discuss the dynamics of the business and to analyze the financials.

The MD&A embodies three features emphasizing the use of the descriptive mode of information. First, the MD&A calls for the business entity to observe and analyze objective reality and then offer its description of that reality to investors. As noted in the concept release, the MD&A seeks to "give the investor an opportunity to look at the company through the eyes of management." "It is the responsibility of management to identify and address

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75. Id.
76. See, e.g., Homer Kripke, The Myth of the Informed Layman, 28 Bus. Law. 631, 637 (1973); Homer Kripke, The SEC, the Accountants, Some Myths and Some Realities, 45 N.Y.U. L. Rev. 1151, 1198 (1970) (claiming that management is in a better position to make forecasts about their own companies than the general public).
77. Seligman, supra note 24, at 610.
78. MD&A Release, supra note 57, at 22,427 (May 24, 1989). See, e.g., Form S-1, SEC 870 (02-08), at Part I, Item 11(h); Form 10-Q, SEC 1296 (01-12), at Part I, Item 2; Form 10-K, SEC 1673 (01-12), at Part II, Item 7.
79. MD&A Concept Release, supra note 39, at 3,717 (emphasis added).
80. Id.
those key variables and other qualitative and quantitative factors which are peculiar to and necessary for an understanding and evaluation of the individual company.\(^{81}\)

Second, the entirety of the objective reality, including the prospective aspects, must be the foundation of any such descriptions by the business entity. In a 1989 interpretive release, the SEC stated:

The MD&A requirements are intended to provide, in one section of a filing, material historical and prospective textual disclosure enabling investors and other users to assess the financial condition and results of operations of the registrant, with particular emphasis on the registrant’s prospects for the future.\(^{82}\)

Noting the comprehensiveness of the MD&A and the focus on the company’s crafting of a description, a leading securities law treatise summarized the MD&A as follows: “In short, Item 303 disclosures provide management’s view of the company.”\(^{83}\) One lawyer offers a more colloquial summary: “Disclose . . . all material information, historical or prospective, that has impacted or might foreseeably impact on the financial affairs of the registrant.”\(^{84}\) Today, the MD&A is widely considered to be the primary form of narrative disclosure that is reviewed, together with financial statements, for investment decision making.\(^{85}\)

Third, the business entity’s description of the objective reality must include the entity’s views on the variety of possible future objective realities, including qualitative information on the associated risks and uncertainties. Company financial statements are historical in nature, and show the company’s past performance. But the past is not necessarily prologue, and the MD&A requirements help fill the gap by requiring the business entity to outline its view on the possible future scenarios.

The MD&A thus requires disclosure of, for instance, “known trends or any known demands, commitments, events or uncertainties” relating to any material change in the company’s liquidity and “known trends or uncertainties that have had or that the registrant reasonably expect will have” a material impact on net sales or revenues or income from continuing operations.\(^{86}\) More generally, the Instructions provide that the MD&A “shall focus specifically on

82. MD&A Release, supra note 57, at 22,428.
85. See Orie E. Barron et al., MD&A Quality as Measured by the SEC and Analysts’ Earnings Forecasts, 16 CONTEMP. ACCT. REG. 75, 80 (1999) (“We focus on MD&A because a growing body of evidence suggests that the SEC and users of financial reports view MD&A as particularly important, despite the fact that MD&A is only a small part of each firm’s total disclosure.”).
material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition.\textsuperscript{87} In February 2003, in the wake of Enron’s collapse amidst a raft of bizarre off-balance-sheet arrangements, the SEC adopted changes to the MD&A explicitly requiring specified disclosures about such arrangements.\textsuperscript{88}

From the beginning, the MD&A’s focus has been on qualitative information. This has begun to change. However, efforts to use the MD&A as a vehicle for requiring quantitative information have not been comprehensive in nature. Moreover, efforts roughly coinciding with the global financial crisis have been spasmodic and targeted at specific issues of the moment, relatively informal in nature, and innocent of modern financial science.

The underlying premise appears to be that numbers are to be handled in financial statements: as the 1987 concept release noted, the MD&A was designed to be a “narrative explanation of the financial statements,” and was to be distinguished from the “numerical presentation and brief accompanying footnotes.”\textsuperscript{89} Similarly, the 1989 interpretive release stated that the MD&A requirements are intended to provide “historical and prospective textual disclosure . . . .”\textsuperscript{90}

Subsequently, the SEC moved slightly away from this exclusively qualitative focus; in a 2003 interpretive release, the SEC stated, almost grudgingly, “[q]uantification of the material effects of known material trends and uncertainties can promote understanding. Quantitative disclosure should be considered and may be required to the extent material if quantitative disclosure is reasonably available.”\textsuperscript{91}

From the onset of the global financial crisis, efforts of varying degrees of formality and legal import were undertaken at the SEC to use the MD&A as a vehicle for encouraging more disclosure of risk-related quantitative information. At the most informal level, beginning in 2008, staff at the SEC’s Division of Corporation Finance (“Corp Fin”) began sending selected companies so-called “Dear CFO” letters, illustrative versions of which were posted on the web. In these letters, Corp Fin reminded addressees of their obligations under the MD&A requirements with respect to matters as diverse as the application of “fair value” measurements of difficult-to-value financial

\textsuperscript{87} Regulation S-K, 17 C.F.R. § 229.303(a) (Instruction 3 to paragraph 303(a)) (2013)).
\textsuperscript{89} Because the MD&A uses a test of a materiality that is different from that under governing U.S. Supreme Court precedent, some courts have resisted private antifraud actions grounded on asserted violations of the MD&A requirements. COFFEE & SALE, supra note 51, at 198.
\textsuperscript{90} MD&A Release, supra note 57, at 22,438 (emphasis added).
instruments, allowances for loan losses, and potential risks associated with mortgage and foreclosure-related activities or exposures.92

Acting somewhat more formally, Corp Fin issued “CF Disclosure Guidance: Topic 4” with the onset of the European sovereign debt phase of the global financial crisis.93 This guidance offered Corp Fin’s views as to how financial institutions should make pertinent disclosures under the MD&A requirements and the Bank Industry Guide on matters relating to the crisis. This guidance specifically acknowledged that the statements therein “represent the views of the Division of Corporation Finance” and that it “is not a rule, regulation or statement of the Securities and Exchange Commission,” and that the SEC has “neither approved nor disapproved its content.”94

In September 2010, partly in response to Lehman Brothers’ window-dressing activities to mask liquidity problems before its collapse, the SEC acted to enhance the MD&A disclosures relating to liquidity and capital resources. First and most importantly, the SEC issued an “Interpretive Guidance.” The guidance stated that, for instance, where an entity includes leverage ratios in its filings, the ratio must meet certain standards and must be accompanied by a “clear explanation of the calculation methodology.”95 Second, simultaneously with issuance of the “Interpretive Guidance,” the SEC proposed a formal rule with respect to short-term borrowings,96 a rule that would require some fairly straightforward quantitative information. However, the SEC has yet to move beyond the proposal stage.

iii. Market Risk Rule

In 1997, the SEC began recognizing the derivatives revolution in its informational mandates. These mandates also implicitly recognized the work of financial institutions in developing formal models for assessing risk. This development was reflected not in the Bank Industry Guide or the MD&A, but instead in a Regulation S-K disclosure item applicable to all companies.

94. Id. at “Supplementary Information.”
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Several years earlier, the SEC had reviewed the annual reports of about 500 companies and found, among other things, that "it often is difficult to determine the impact of derivatives on . . . [the companies'] statements of financial position, cash flows, and results of operations."\(^{97}\)

In adopting Item 305, the Market Risk Rule, the SEC stated:

> During the last several years, the use of derivative financial instruments, other financial instruments, and derivative commodity instruments increased substantially. The Commission recognizes that these instruments can be effective tools for managing exposures to market risk. However, in using market risk sensitive instruments some registrants experienced significant, and sometimes unexpected, losses. Those losses resulted from changes in interest rates, foreign currency exchange rates, and commodity prices, among other things. In light of those losses and the substantial growth in the use of market risk sensitive instruments, the adequacy of existing disclosures about market risk emerged as an important financial reporting issue.\(^{98}\)

Both the qualitative and quantitative risk information about the business entity's market risk sensitive instruments would be disclosed outside the financial statements and related notes, in both the Securities Act registration statements and the Exchange Act Form 10-Q and Form 10-K.\(^{99}\) The Market Risk Rule disclosures thus have to be made at least quarterly.

In the Market Risk Rule Adopting Release, the SEC noted, "[a] primary objective of the quantitative disclosure requirements is to provide investors with forward looking information about a registrant's potential exposures to market risk."\(^{100}\) The qualitative information would focus on such matters as the business entity's primary market risk exposures and how those exposures are managed.

In preparing the quantitative information, companies would categorize market risk sensitive instruments as those for trading purposes and those for other purposes.\(^{101}\) The quantitative information could be provided using one or more of the following three methods:

i. Tabular presentation of fair value information and contract terms relevant to determining future cash flows, categorized by expected maturity dates;

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99. See, e.g., Form S-1, SEC 870 (02-08), at Item 11(j); Form 10-Q, SEC 1296 (01-12), at Part I, Item 2; Form 10-K, SEC 1673 (01-12), at Part I, Item 7A.

100. Market Risk Rule Adopting Release, supra note 58, at 6048.

101. Id. at 6045.
ii. Sensitivity analysis expressing the potential loss in future earnings, fair values, or cash flows from selected hypothetical changes in market rates and prices; or

iii. Value-at-Risk disclosures expressing the potential loss in future earnings, fair values, or cash flows of market risk-sensitive instruments over a selected period of time, with a selected likelihood of occurrence, from changes in market rates or prices.\footnote{Regulation S-K, 17 C.F.R. § 229.305(a) (2013).}

The Value-at-Risk (VaR) alternative is the most sophisticated of the three. Before turning to the SEC’s requirements in this respect, some brief background on VaR may be helpful.

VaR is a method often used to gauge the possible losses on a portfolio of financial assets under relatively normal circumstances.\footnote{For introductions to VaR, see, for example, JOEL BESSIS, RISK MANAGEMENT IN BANKING 200-17 (3d ed. 2010); PHILIPPE JORION, FINANCIAL RISK MANAGER HANDBOOK 250-64 (5th ed. 2009); ROBERT L. MCDONALD, DERIVATIVES MARKETS 813-40 (2d ed. 2006).} A bank may have a portfolio of stocks, bonds, derivatives, and other assets, each of which will fluctuate in price over time. Under various assumptions and using various parameters, a mathematical model could be developed to ask what sum might be lost on the portfolio over a specified time horizon at a given probability. That is, VaR is the “maximum loss over a target horizon such that there is a low, prespecified probability that the actual loss will be larger.”\footnote{JORION, supra note 103, at 250.} Thus, if the model used asserts that the VaR is $100 million over a horizon of one day using a 95% confidence level—and the model happens to have perfect foresight—then the actual losses can be expected to exceed $100 million only five days out of a hundred (i.e., 5% of the time). Not surprisingly, if the identical model is asked to specify the VaR at a higher confidence level (e.g., 99% instead of 95%), the VaR number generated will be higher. Similarly, if the identical model is asked to specify the VaR over a longer time horizon (e.g., 10 days instead of 1 day), the VaR number generated will also be higher. And, of course, no model has perfect foresight: the assumptions used or the model design itself may be flawed—or the world may have changed in ways that have made the model obsolete.

There are three basic problems with the quantitative aspects of the SEC’s Market Risk Rule. I will discuss them briefly here and return to these issues when I discuss the bank regulator’s public disclosure requirements in relation to the bank regulators’ analogue to the market risk rule (Subsection III.C.2.i) and company-run “stress test” results (Subsection III.C.2.ii).

First, regarding VaRs, the SEC gives reporting entities very wide latitude as to (a) the models, assumptions, and parameters used, as well as (b) the confidence level and time horizon they choose to report at. Second, the SEC does not require the reporting entity to provide any evidence as to the quality of
the bank’s VaR modeling, such as results reflecting how their models have historically performed. Third, the VaR is not even intended to gauge possible losses in times of high economic stress.

With respect to the first problem, the SEC does not set out any specific mathematical model or models that reporting entities may use. Since there is no uniform way of measuring VaR, cross-entity comparisons can be difficult. The entity is free to use any model, assumptions, or parameters that it wishes so long as it provides descriptions of the model. Such descriptions must include, for instance, “how loss is defined by the model (e.g., loss in earnings, fair values, or cash flows), the type of model used ( . . . and a description as to how optionality is addressed by the model), the types of instruments covered by the model . . . and other relevant information about the model’s assumptions and parameters . . . .”

By design, VaR numbers must be reported in terms of confidence levels and time horizons. The SEC provides little guidance on the confidence level and time horizon companies must use for SEC reporting purposes. As a general rule, the confidence level used must be 95% or higher. Thus, even though VaRs reported at the 95% level are quite different from VaRs reported at the 99% level, both are acceptable. Moreover, when there is “economic justification,” a business entity is not even required to meet this 95% or higher requirement. JPMorgan Chase currently uses a 95% confidence level in its public reporting while Bank of America uses a 99% level of confidence. In terms of time horizon, periods of up to one year are permitted.

In short, the wide latitude given by the SEC to business entities allows tremendous heterogeneity in terms of models and in terms of the confidence levels and time horizons. Comparing VaR numbers across entities is extremely difficult. And because only descriptions of models, not the models themselves, are required, deciphering the real significance and reliability of the reported VaRs can be challenging.

The second basic problem with the Market Risk Rule is that the entity is not required to provide any evidence as to quality of its model, such as the results of “backtesting” the model’s predictions against actual fact. The Market Risk Rule allows entities to avoid reporting the percentage or number of times the actual changes exceeded the VaR amounts during the reporting period, by, for instance, setting out the average, high, and low amounts or the distributions of the VaR amounts for the reporting period.

Even the best-designed models are sensitive to the assumptions, historical data, and parameters used. “Model risk” is omnipresent and especially likely to
be manifest in times of crisis, when many of the models' assumptions (such as the assumption that markets are continuously traded) may be violated or bizarre market prices may occur.

The third basic problem is that, leaving aside model risk, VaRs are not even intended to generate the kind of information that some investors assume they provide. VaR is a dollar amount that summarizes downside risk under relatively normal circumstances. VaR is not designed to determine losses in highly stressed conditions. Assuming that the model is perfect in every possible way, if the 95% confidence level is chosen, the actual losses can be expected to exceed the VaR five days out of a hundred. Second, the VaR would not say anything about the distribution of losses on those five days: indeed, for the same VaR number, we could have very differently sized losses.\textsuperscript{111}

Effectively, the VaR is designed to tell how much you will be hurt in the normal rough-and-tumble of market and economic fluctuations. It is not designed to tell you how much you will be hurt because of a crash—when it might really matter.

So-called “stress tests” are designed to better reflect “worst case” scenarios. But the SEC has not modified its Market Risk Rule to reflect this. In contrast, in the bank regulator universe, companies are now required to publicly disclose certain stress test results, a matter Subsection III.C.2.ii discusses.

The foregoing has focused on disclosures of a quantitative nature required by the Market Risk Rule. Qualitative information is required as well, but is relatively limited. “To the extent material,” the company must describe its “primary market risk exposures,” “how those measures are managed,” and “changes in either [the company’s] primary market risk exposures or how such exposures are managed.”\textsuperscript{112} The information must be presented separately for market risk-sensitive instruments entered into for trading purposes and those entered into for other purposes.\textsuperscript{113}

The failure to update the SEC’s Market Risk Rule is especially disappointing because the SEC acknowledged that such updating would be needed. At its adoption in 1997, the SEC recognized that the flexibility in modeling the rule offered was “likely to reduce the comparability of disclosures.”\textsuperscript{114} It justified this on the grounds that “at this time . . . such flexibility is necessary and important to allow risk measurement and reporting practices to evolve.”\textsuperscript{115} However, the SEC also promised, “as more standard risk measurement practices and methods of reporting market risk are

\textsuperscript{111} As to this issue, see, for example, BESSIS, supra note 103, at 474-75; Hu, Behind the Corporate Hedge, supra note 34, at 47-48; JORION, supra note 103, at 254-55.


\textsuperscript{113} Id. § 229.305(b)(2) (2013).

\textsuperscript{114} Market Risk Rule Adopting Release, supra note 58, at 6048.

\textsuperscript{115} Id.
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developed, the [SEC] anticipates reviewing the disclosure requirements with the view to enhancing comparability.116

Nearly two decades have passed, and no substantive changes have been made to the market risk rule. The SEC has yet to act on its promise.

III. Major Banks and The Emergence of a Parallel Disclosure Universe: 2013

In 2013, a parallel universe for public disclosure emerged: major banking entities would now, in addition, be required to meet the public disclosure requirements set out in rules jointly adopted by the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, and the Federal Deposit Insurance Corporation.117 Flowing in large part from bank regulatory efforts centered in Basel that go back to a 1988 accord on capital adequacy and, more immediately, a 2004 framework recognizing the potential value of market discipline, this new public disclosure system is directed at the soundness of individual banks and the financial system as a whole. The regulatory ends of this new disclosure system are thus distinct from those of the SEC’s system.

The current U.S. bank regulator universe for public disclosure consists of two components. First, and by far the more important, is the United States implementation of the public disclosure aspects of these Basel-related efforts, the first stage of which came into effect on January 1, 2013 and which requires disclosures on a quarterly basis thereafter.118 In this first stage, the public disclosure requirements center on market risks and, specifically, the market risks of the trading activities of major banks.

The second component is an artifact not of the Basel-related efforts, but of the Dodd-Frank Act. The component focuses on the public disclosure of certain company-run stress testing results—specifically, requiring certain large financial institutions to disclose their own estimates as to how the institutions may fare in a “severely adverse” scenario, based on the institutions’ own methodologies.119 For the largest banks, the public disclosures are to be made in March and September of every year, beginning in March 2013.120

Beginning in 2015, the second stage of the Basel-related public disclosure requirements will come into effect. Public disclosure will be required as to a broad range of matters relating to the capital adequacy of the institution, including credit risk.121 Later still, these Basel-related requirements will extend to liquidity.122 Thus, at the end of the three-stage process, the Basel-related

116. Id.
117. See U.S. Basel 2.5 Adopting Release, supra note 1.
118. See id.
119. Id. at 53,060, 53,111.
120. Id.
121. See infra Section III.A.
122. See infra Section III.A.
requirements will apply to each of market risk, credit risk, and liquidity—i.e., substantially all of the major risks facing banks. This is a vast and important domain that is currently—and prospectively—also fully subject to the SEC disclosure system.

In terms of regulatory means, both the bank regulator disclosure system and the SEC system largely rely on the descriptive mode. However, in implementation, the general and specific functional elements are significantly different. In terms of general elements, both the required quantum of information and enforcement mechanisms differ. The bank regulator system’s quantum is rooted, in effect, in a version of the investor-oriented “materiality” standard used by the SEC that has been diluted to more accommodate the interests of the bank itself. Private enforcement of the bank regulator system is not likely to be possible. In terms of specific elements, the bank regulators’ intermediary depiction model reflects far more sophistication about financial modeling and its limits than does the SEC’s. As a result, bank regulators call for intermediary depictions that are more advanced and standardized.

This Part starts with the origins of the bank regulator disclosure system and its regulatory ends (Sections III.A-III.B). For the purposes of this Article, I will consider the bank regulator disclosure regime as it is currently in effect. Then I turn to issues of regulatory means (Section III.C).

A. Basel, U.S. Bank Regulators, and the Path to a New and Expanding Disclosure Universe

The tortuous, multi-decade path to the emergence of this parallel disclosure universe started not in Washington, but in Basel, Switzerland, and not in the informational realm, but in the substantive context of minimum bank capital levels. This international element and focus on bank capital adequacy are critical in understanding this new and expanding disclosure regime.

In 1974, the central bank governors of eleven major industrialized countries established a committee under the auspices of the Bank for International Settlements (headquartered in Basel) to promote international cooperation in monitoring and supervision of international banking activities. This committee, now known as the Basel Committee on Banking Supervision (“Basel Committee”), became the epicenter of international regulation of banks.

By the mid-1980s, bank regulators in the United States and the U.K. began to worry over the threat that certain new financial products—including derivatives known as “interest rate swaps” and “currency swaps”—would
cause banks to take on too much risk. Rather than developing a regulatory system specifically addressing the dangers caused by these products, the regulators took advantage of and contributed to the momentum that had been building since the 1970s for internationally coordinated efforts at enhancing the safety and soundness of major banks in general. Three themes were central: (1) regulation would be on an international basis; (2) capital adequacy standards would be the primary solution to perceived problems in the safety and soundness of banks; and (3) the distinctive risk characteristics of swaps and related products would be reflected in this international capital adequacy system.

Largely through the efforts of the Basel Committee, the Bank of England, the Federal Reserve Board, and the Office of the Comptroller of the Currency, the “Basel Accord” (“Basel I”) was adopted in July 1988. Basel I imposed minimum levels of capital for internationally active banks, with implementation to occur through actions at the national level. National authorities were permitted to set ratios which were higher than the minimums prescribed in Basel I, but were not permitted to set lower ratios. For the purposes of determining how much capital a bank would be required to have, Basel I’s credit risk rules required the “risk-weighting” of assets. Broad categories of assets were established: the more assets a bank had in categories deemed to have higher credit risk, the more capital the bank was required to have. In the United States, regulators implemented Basel I in 1989 with general risk-based capital rules.

In 1996, the Basel Committee amended Basel I to require banks to measure and hold capital based on their exposure to market risk. In the United States, regulators implemented this market risk amendment with new rules effective 1997.

Basel I was focused on minimum bank capital requirements. Bank regulators did not address the matter of public disclosures by banks. This changed with the Basel Committee’s adoption in June 2004 of what is now referred to as “Basel II,” also intended as the basis for consultation and implementation at the national level. Basel II set forth a framework consisting of three “pillars”: (1) minimum capital requirements (Pillar 1), (2) supervisory review of capital adequacy (Pillar 2), and (3) market discipline through enhanced public disclosures (Pillar 3).

According to the Basel Committee, “[t]he purpose of Pillar 3 [market discipline] . . . is to complement the minimum capital requirements (Pillar 1)

125. Hu, Swaps, supra note 69, at 369-70.
and the supervisory review process (Pillar 2).” To encourage market discipline, the Basel Committee developed a set of disclosure requirements which would allow market participants to assess “key pieces of information” on such matters as “capital,” “risk exposures,” and “risk assessment processes.”

Under Basel II, the regulatory ends were different from those under the SEC’s disclosure philosophy. The bank regulators hoped that Pillar 3 could “produce significant benefits in helping banks and supervisors to manage risk and improve stability.”

Subsequent to Basel II’s 2004 issuance, the Basel Committee made significant changes, culminating in its 2009 “Revisions to the Basel II Market Risk Framework, Guidelines for Computing Capital for Incremental Risk in the Trading Book and Enhancements to the Basel II Framework” (commonly referred to as “Basel 2.5”). “Basel III,” the latest generation of international capital standards, was issued by the Basel Committee in December 2010, and then revised in June 2011.

The Pillar 3 public disclosure mandate arrived in the United States as a component of the U.S. version of Basel 2.5’s market risk framework that came into effect on January 1, 2013. The federal bank regulators stated that the market risk capital rule (the “U.S. Basel 2.5 Rule”) would supplement their risk-based capital rules and advanced capital adequacy guidelines by requiring any subject bank to adjust its risk-based capital ratios to reflect the market risk in its trading activities. In addition, the new rule adopted requirements for public disclosure designed to increase transparency and improve market discipline.

In particular, the U.S. Basel 2.5 Rule is focused on the market risk in trading activities faced by major banks. Generally speaking, the rule applies only to banking entities with aggregate trading assets and trading liabilities equal to $1 billion or more or 10 percent or more of total assets. As of August 2012, this meant that only 14 national bank holding companies would be subject to the new public disclosure requirements.

129. Id. at 226.
130. Id.
135. Id. at 53,063.
138. Id. at 53,096.
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The scope of the bank regulator universe will be expanding beyond the area of market risks associated with bank trading. First, on October 11, 2013, the federal bank regulators published final rules establishing a comprehensive capital framework for U.S. banking organizations that would implement Basel III and certain provisions of the Dodd-Frank Act. A massive endeavor with both substantive and disclosure elements, the adopting release comes to approximately 272,000 words.

Effective the first quarter of 2015, banking organizations with total consolidated assets of $50 billion or more will be subject to an extensive array of new public disclosure requirements. The overarching theme in this respect is to provide highly granular information on the capital adequacy of the institution. This includes information as to such matters as the banks’ credit risk exposures, risk assessment processes, and the quality and quantity of different kinds of capital they hold.

Second, on November 29, 2013, the U.S. bank regulators published for comment a proposed rule that would for the first time implement minimum liquidity (i.e., as opposed to capital) requirements for large and internationally active banks and non-bank systemically important financial institutions. Under the proposal, these entities would be required to hold minimum amounts of high-quality, liquid assets such as government and corporate debt that can be converted easily and quickly to cash. If the proposed rule is adopted, public disclosure relating to bank liquidity will be required.

Considering the current U.S. Basel 2.5 Rule directed at market risk and the forthcoming rules that cover, among other things, capital adequacy, credit exposures, risk assessment procedures, and liquidity, it would be fair to say that the bank regulator public disclosure universe would essentially cover all risks facing major banks.

B. Regulatory Ends: Bank Well-Being and Financial System Stability

As just discussed, the bank regulator disclosure system arose in the context of international efforts to ensure capital adequacy to promote the
stability of individual banks and the financial system as a whole. The disclosure system’s regulatory ends reflect these origins.

Basel II’s first two “pillars”—risk-based capital requirements for credit, market, and operational risk (Pillar 1) and supervisory review of capital adequacy (Pillar 2)—are intended to ensure the soundness of banks. Basel II expressly states that the purpose of Pillar 3—market discipline—is to “complement the minimal capital requirements (Pillar 1) and the supervisory review process (Pillar 2).” More broadly, as noted earlier, the bank regulators hoped that Pillar 3 could “produce significant benefits in helping banks and supervisors manage risk and improve stability.”

Basel II uses the term “market discipline,” but its conception of market discipline and the goals of market discipline depart from the common understanding on the part of those interested in corporate governance or securities law. Basel II’s use of the term reflects its instrumental value in furthering two goals—the welfare of the business entity itself and overall financial system stability. Under the common understanding, public disclosure is directed at neither such goal.

As touched on in Section II.A, the term “market discipline” is instead commonly used to refer to the market pressures causing corporate managements to further the well-being of shareholders. The well-being of the business entity itself is not relevant, except in so far as the entity’s well-being would further the interests of shareholders. Moreover, Basel’s conception that the second goal of market discipline is to further the stability of the financial system is even more alien to the common understanding.

This distinction between the welfare of shareholders and the welfare of the business entity in which they are invested is significant. In the usual case of diversified shareholders, the welfare of the shareholder is not identical to, and can be contrary to, the welfare of the corporate entity. A diversified shareholder may not benefit from, for instance, a corporation having a “AAA” credit rating or diversifying at the corporate level by becoming a conglomerate. In the Basel II world, regulators seek “market discipline” to further a form of conservatism that shareholders—one key type of market participant—may actually find unpalatable. Other market participants, such as certain classes of debtholders, may feel differently.

Federal bank regulators view “market discipline” and the regulatory ends of public disclosure similarly to the Basel Committee. In the January 11, 2011 proposing release for U.S. Basel 2.5, they stated:

143. BASEL II FRAMEWORK, supra note 128, at 226.
145. For a more extended discussion of this conflict, as well as discussions of the interests of different classes of bondholders in relation to the interests of shareholders and the business entity, see the sources set out in supra note 34.
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The proposed rule imposes disclosure requirements designed to increase transparency and improve market discipline . . . The agencies recognize the importance of market discipline in encouraging sound risk management practices and fostering financial stability.\(^{146}\)

The foregoing has focused on the regulatory ends under Basel 2.5 and the U.S. implementation. With respect to the separate public disclosure requirements attending to company-run stress tests, the philosophy appears to be identical. In its release adopting the stress test rule required under the Dodd-Frank Act, the Federal Reserve characterized the statute's stress testing requirements as a means of "mitigating the threat to financial stability" caused by Covered Companies.\(^{147}\) Speaking of the public disclosure aspects of the company-run stress tests, the Federal Reserve stated that public disclosure "helps to provide valuable information to market participants, enhance transparency, and facilitate market discipline."\(^{148}\)

C. Regulatory Means: The Descriptive Mode and the Bank Regulators' Distinctive Intermediary Depiction Model

1. General Elements: A Diluted "Materiality" Quantum and Public Enforcement

Nominally, the general standard for the quantum of information required to be disclosed publicly is the same in the bank regulator universe as it is in the SEC’s: "materiality." In setting out Pillar 3, Basel II stated:

A bank should decide which disclosures are relevant for it based on the materiality concept. Information would be regarded as material if its omission or misstatement could change or influence the assessment or decision of a user relying on that information for the purpose of economic decisions . . . . The [Basel] Committee is not setting specific thresholds for disclosure as these can be open to manipulation and are difficult to determine, and it believes that the user test is a useful benchmark for achieving sufficient disclosure.\(^{149}\)

Similarly, U.S. bank regulators stated:

A banking organization must decide the relevant disclosures based on a materiality concept. Information is regarded as material for purposes of the disclosure requirements in the final rule if the information’s omission or

\(^{146}\) U.S. Basel 2.5 Proposing Release, supra note 136, at 1907.

\(^{147}\) Dodd-Frank Stress Testing Rule, supra note 1, at 62,379.

\(^{148}\) Id. at 62,388.

\(^{149}\) BASEL II FRAMEWORK, supra note 128, at 227.
misstatement could change or influence the assessment or decision of a user relying on that information for the purpose of making investment decisions.\footnote{150}{U.S. Basel III Adopting Release, \textit{supra} note 139, at 62,130.}

The foregoing statements are restatements of the previously discussed \textit{TSC v. Northway} standard under federal securities law.\footnote{151}{See \textit{supra} Subsection II.B.1.} There seems to be symmetry between the general quantum of information required by international and U.S. banking regulators and that required by the SEC.

However, this may not be so. In effect, the bank regulators’ conception of materiality is less investor-oriented than the SEC’s, and more accommodative of the interests of the business entity. Also, there is a statutory difference that arguably might allow bank regulators to better insulate bank information from public disclosure. Finally, there are differences in enforcement and officer certification that could also lead to less information being provided as a practical matter.

Basel II states:

\begin{quote}
In exceptional cases, disclosure of certain items of information required by Pillar 3 may prejudice seriously the position of the bank by making public information that is either proprietary or confidential in nature. In such cases, a bank need not disclose those specific items, but must disclose more general information about the subject matter of the requirement, together with the fact that, and the reason why, the specific items of information have not been disclosed.\footnote{152}{BASEL II FRAMEWORK, \textit{supra} note 128, at 228.}
\end{quote}

Similarly, the U.S. Basel 2.5 Rule states:

\begin{quote}
If a [bank] believes that disclosure of specific commercial or financial information would prejudice seriously its position by making public certain information that is either proprietary or confidential in nature, the [bank] will not be required to disclose these specific items, but must disclose more general information about the subject matter of the requirement, together with the fact that, and the reason why, the specific items of information have not been disclosed. In implementing this requirement, the agencies will work with banks on a case-by-case basis to address any questions about the types of more general information that would satisfy the . . . rule.\footnote{153}{U.S. Basel 2.5 Adopting Release, \textit{supra} note 1, at 53,111. There is similar language in U.S. Basel III Adopting Release. U.S. Basel III Adopting Release, \textit{supra} note 105, at 62,130.}
\end{quote}

This is different, both procedurally and substantively, from the SEC’s approach to claims of confidential or proprietary information. Under the federal banking procedures, the bank can, on its own, make a decision not to disclose information it deems either proprietary or confidential in nature. After a bank
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has made such a decision, bank regulators would then work with the bank as to the “more general information” that would substitute for the required disclosure.

Under the SEC’s procedures, a bank (or any other corporation) cannot make such a determination on its own. It would instead have to request that the SEC grant confidential treatment of information required to be filed under the Securities Act and the Exchange Act pursuant to the strict requirements of Rule 406 and Rule 24b-2, respectively.154

Substantively, the SEC system explicitly considers investor interests in assessing whether material information should be disclosed. SEC staff has stated that “confidential treatment is generally not appropriate for information that is material to investors.”155 The same bulletin noted that “[e]xcept in unusual circumstances, disclosure required by Regulation S-K or any other applicable disclosure requirement is not an appropriate subject for confidential treatment . . . .”156 The foregoing quote from the U.S. Basel 2.5 Rule does not explicitly mention investors.

There is also a statutory difference that may give more leeway to banks seeking to shield information from public disclosure. Under the Freedom of Information Act (FOIA), firms are entitled to seek exemptions from public disclosure on a variety of grounds.157 Companies seeking confidential treatment requests from the SEC most often rely on the exemption that covers “trade secret and commercial or financial innovation obtained from a person and privileged or confidential,” referred to as “the (b)(4) exemption.”158 This (b)(4) exemption would also be available for companies seeking such treatment from bank regulators.

The statutory difference comes with FOIA’s “(b)(8)” exemption.159 This provision states that matters that are “contained in or related to examination, operating, or condition reports prepared by, or on behalf of, or for the use of an agency responsible for the regulation or supervision of financial institutions” is exempt from FOIA. Although the applicability of this exemption is far from clear with respect in the context of public disclosures, there is a colorable argument that it would apply. First, the exemption has been construed very broadly by courts.160 Second, courts have construed the purposes of (b)(8) to

156. Id.
include the protection of public confidence in banks\textsuperscript{161} and the security of the banking system.\textsuperscript{162}

Such differences in attitude and perhaps statutory regime can result in significant differences in the actual quantum of information made publicly available. The AIG example to be discussed in Subsection VI.E.1 is consistent with this hypothesis.

Enforcement operates differently in this bank regulator universe as well. In particular, there are unlikely to be private class actions for violations of bank regulator disclosure rules. In the SEC disclosure regime, an implied private cause of action under the most important antifraud provision—Rule 10b-5 of the Exchange Act—has long been established.\textsuperscript{163} \textit{Basic Inc. v. Levinson}, by essentially eliminating Rule 10b-5's reliance requirement, has facilitated class actions.\textsuperscript{164} In contrast, "courts have been reluctant to imply a private cause of action under federal banking laws," usually on grounds that "since Congress specifically gave federal bank regulators wide-ranging enforcement rights, its failure to give private parties similar rights could not have been inadvertent."\textsuperscript{165}

In terms of public enforcement, it remains to be seen what resources will be devoted by bank regulators to the enforcement of public disclosure requirements. Because bank regulators had never previously involved themselves in mandatory public disclosure, the future is particularly difficult to handicap. Reading tea leaves is necessary. In analyzing the anticipated costs of adopting the new disclosure requirements, the bank regulators stated that they expected such costs would be "\textit{de minimis}."\textsuperscript{166} In contrast, public disclosure is the primary reason for the SEC's existence, and the SEC is requesting 1,481 full-time positions for its Division of Enforcement for Fiscal Year 2014.\textsuperscript{167}

That said, in contrast to the SEC, federal bank regulators have their own employees (bank examiners) who are effectively office at the reporting entity. There are certainly issues involving the training and sophistication of examiners, and concerns over the sway the banks may have over some

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{161.} \textit{Id.}
\item \textsuperscript{162.} \textit{Id. at} \textsection{18:1.}
\item \textsuperscript{164.} \textit{Basic Inc. v. Levinson}, 485 U.S. 224 (1988). As discussed in Subsection II.B.1, the Supreme Court is reconsidering \textit{Basic}'s "fraud on the market" theory.
\item \textsuperscript{166.} U.S. Basel 2.5 Adopting Release, \textit{supra} note 1, at 53,096; cf. \textit{id.} at 53096 n.36 (stating that Director of the Division of Market Analysis did not foresee any changes in the current staffing levels to be needed).
\item \textsuperscript{167.} The Division of Enforcement is by far the largest of the SEC's five Divisions. Under the Fiscal Year 2014 request, the SEC is seeking 1,481 positions for Division of Enforcement, in contrast to 540, 332, 205, and 146 for the Divisions of Corporation Finance, Trading and Markets, Investment Management, and Risk, Strategy, and Financial Innovation (now called the Division of Economic and Risk Analysis), respectively. See \textit{Sec. \& Exch. Comm'n., FY 2014 Congressional Budget Justification/FY 2014 Annual Performance Plan/FY 2012 Annual Performance Report} 14 (2013).
\end{itemize}
\end{footnotesize}
examiners. For example, at the time of the JPMorgan Chase credit-derivatives debacle, roughly 40 examiners from the Federal Reserve Bank of New York and 70 staff members from the Office of the Comptroller of the Currency were stationed inside JPMorgan’s Manhattan headquarters. Nevertheless, the “local knowledge” of the embedded bank regulators should make public enforcement easier, especially with improvements in the examination process motivated by real or perceived failures during the global financial crisis.

It is worth briefly mentioning one other difference in the general elements of the two disclosure systems: the officer certification requirements. Under Section 302(a) of the Sarbanes-Oxley Act, the SEC is directed to require that the CEO and the CFO certify in each periodic report under the Exchange Act that, among other things, the signing officers have reviewed the report, that, based on the officer’s knowledge, the report does not contain any material misstatement or omission, and that the financial information included in the report “fairly present[s] in all material respects the financial condition and results of operations of the issuer . . . .” Moreover, the signing officers must certify that they are responsible for the internal controls, have evaluated the effectiveness of their internal controls, and have presented in the Exchange Act report their conclusions about the effectiveness of their internal controls.

Under the U.S. Basel 2.5 Rule, there is a diluted version of the foregoing requirements. “[O]ne or more senior officers”—not necessarily the CEO or CFO—“must attest that the disclosures” meet the pertinent market risk disclosure requirements. In terms of internal controls, such senior officer or officers must attest that the board and senior management “are responsible for establishing and maintaining an effective internal control structure over financial reporting” including the requisite market risk disclosures. However, unlike the SEC, the bank regulators do not require conclusions as to the effectiveness of such controls with respect to market risk disclosures.

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168. See, e.g., Susanne Craig & Jessica Silver-Greenberg, Suit Revives Goldman Conflict Issue, N.Y. TIMES Oct. 10, 2013, http://dealbook.nytimes.com/2013/10/10/bank-examiner-was-told-to-back-off-goldman-suit-says (reporting that two former regulators have stated that banks hold sway over their regulators, particularly those positioned at a bank’s headquarters). In October 2013, a former examiner at the Federal Reserve Bank of New York filed a lawsuit alleging that she was fired after she refused to change her findings that Goldman Sachs had inadequate procedures to guard against conflicts of interest. Id.


170. As to the changes that are occurring, see, for example, Michael R. Crittenden, Bank Examiners to Face Rigorous Reviews: New Program From Comptroller Reflects Criticism of Regulators for Lax Oversight Before and After Financial Crisis, WALL ST. J., Sept. 30, 2013, at C5.


172. Id. at § 302(a)(4)(B)).


174. Id. at 53,091.
2. Specific Elements: More Advanced and Standardized Intermediary Depiction Requirements

i. Market Risk: The U.S. Basel 2.5 Rule

The U.S. Basel 2.5 Rule component of the bank regulator disclosure system is focused on the market risk of bank trading activities. Quantitative information is to be provided regularly on a quarterly basis. Qualitative disclosures that "typically do not change each quarter" may generally be disclosed annually.175 "Banks are encouraged, but not required," to provide the information to the public "in a central location on their Web sites."176

The market risk information required to be disclosed under the U.S. Basel 2.5 Rule can be most directly compared to the information required under the SEC’s Market Risk Rule. Information of a quantitative nature is at the core of both these market risk rules. The SEC’s MD&A is primarily intended to generate information of a qualitative nature, and supplements the SEC’s Market Risk Rule on the qualitative side. The SEC’s Bank Industry Guide is not focused on market risk information.

The bank regulators’ market risk provisions are far more financially sophisticated and demanding. Part of this may be explained by the fact that bank regulators were focused on major banks, entities that have especially complex risks and deep reservoirs of personnel familiar with the analysis of such risks. The SEC’s provisions are intended for business entities generally, and a very demanding market risk rule may be inappropriate in that context.

However, this is only a partial explanation. Some of the differences flow from bank regulators being more cognizant of the dangers of giving subject entities too much latitude in their models, assumptions, and parameters. The bank regulators’ market risk rule also reflects a deeper appreciation of the limits of VaR specifically and of financial modeling in general.

There are three essential differences between the market risk information required by the SEC and that required under the bank regulator system. First, the bank regulator system requires the use of a far richer set of metrics. Second, bank regulators effectively require much more standardization as to modeling. Third, relying on both quantitative and qualitative disclosures, the bank regulator system demands that far more information be provided on the quality of the modeling. I discuss these three differences in sequence.

Under the U.S. Basel 2.5 Rule, a bank must provide figures for, among other things:

175. U.S. Basel 2.5 Adopting Release, supra note 1, at 53,111.
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- a "VaR-based measure"\textsuperscript{177}
- a "stressed VaR-based measure"\textsuperscript{178}
- an "incremental risk" charge\textsuperscript{179}
- a "comprehensive risk" measure\textsuperscript{180}

Let us focus on the VaR-based measure, the pertinent measure used in the SEC's Regulation S-K Item 305, and contrast the SEC's approach with bank regulators' approach.

Bank regulators define VaR in a customary way: the "estimate of the maximum amount that the value of one or more positions could decline due to market price or rate movements during a fixed holding period within a stated confidence interval."\textsuperscript{181} Banks are to use their own models, as with the SEC's Market Risk Rule. However, the models must not only meet quality standards specified in the rule (for instance, the VaR model must take into account the "nonlinear" price characteristics of options positions\textsuperscript{182}) but must also be approved by the regulator.\textsuperscript{183} Moreover, the subject entities are required to periodically review their models in light of developments in financial markets and modeling technologies.\textsuperscript{184} The SEC does not specify quality standards, does not get involved in the approval of models, and does not require companies to undertake such periodic review of models.

In terms of confidence levels and time horizons, the U.S. Basel 2.5 Rule requires that the VaRs be calculated using a 99% confidence level and a ten-business-day holding period. The SEC gives discretion to the reporting entity to use any confidence level above 95% (and even more latitude when there is "economic justification") and any time horizon up to one year. Bank regulators require that the VaR calculation be based on a historical observation of at least one year.\textsuperscript{185} The SEC has no such requirement.

The U.S. Basel 2.5 Rule, in contrast to the SEC Market Risk Rule, was also concerned with risk during times of stress. With the U.S. Basel 2.5 Rule, both quantitative and qualitative information must be provided publicly on what happens in periods of financial stress. The "stressed VaR" measure is

\textsuperscript{177} U.S. Basel 2.5 Adopting Release, \textit{supra} note 1, at 53,104, 53,112.
\textsuperscript{178} \textit{Id.}
\textsuperscript{179} \textit{Id. For example, Goldman Sachs summarizes incremental risk as the "potential loss in value of non-securitized inventory positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon." THE GOLDMAN SACHS GRP., REGULATORY CAPITAL DISCLOSURES FOR THE QUARTERLY PERIOD ENDED MARCH 31, 2013, at 7 (2013).
\textsuperscript{180} U.S. Basel 2.5 Adopting Release, \textit{supra} note 1, at 53,106, 53112. For example, Goldman Sachs summarizes comprehensive risk as "the potential loss in value, due to price risk and defaults, within the firm's credit correlation positions." THE GOLDMAN SACHS GRP., \textit{supra} note 136, at 7.
\textsuperscript{181} \textit{Id. at 53,102.}
\textsuperscript{182} \textit{Id. at 53,104.}
\textsuperscript{183} \textit{Id. at 53,067.}
\textsuperscript{184} \textit{Id.}
\textsuperscript{185} \textit{Id. at 53,104.}
intended to be reflective of potential losses during a period of significant market stress. Thus, this stressed VaR is calculated at a 99% confidence level over a 10-day holding period using historical data from a continuous 12-month period that reflects a period of significant financial stress.\footnote{Id. at 53,105, 53,112.} Annually, the bank provides a description of the stress tests applied to the bank’s positions for each market risk category—e.g., interest rate risk, equity price risk, and so forth.\footnote{Id. at 53,112.} The SEC’s Market Risk Rule does not attempt to deal with stressed situations.

In contrast to the SEC’s Market Risk Rule, the U.S. Basel 2.5 Rule requires extensive quantitative and qualitative information on the quality of the entity’s modeling. From a quantitative standpoint, a bank is required to provide “a comparison of VaR-based estimates with actual gains or losses experienced” and “an analysis of important outliers.”\footnote{Id.} From a qualitative standpoint, the bank is required to disclose the approaches it used for validating and evaluating the accuracy of modeling.\footnote{Id.}

ii. Severely Adverse Scenario: Company-Run Stress Tests

As mentioned in Subsection II.B.2.iii, VaRs are not designed to gauge how much a company can suffer in the event of “outlier” events, such as a stock market crash or a collapse in housing prices. “Stress testing” involves making quantitative estimates as to company performance involving hypothetical scenarios involving extreme moves in market variables.\footnote{See Goldman, Sachs & Co. and SBC Warburg Dillon Read, The Practice of Risk Management: Implementing Processes for Managing Firmwide Market Risk 69-70 (1998).}

The SEC has not been involved with respect to either the substantive or disclosure aspects of stress testing. On the substantive side, the SEC has neither sought to itself assess how companies would fare in such hypothetical scenarios (i.e., SEC stress tests) nor required companies themselves to make their own assessments (i.e., company-run stress tests). If companies elect to undertake such stress tests, none of the SEC risk-related rules specifically require public disclosure of the results. Such company-run stress test numbers are outside of the reach of the SEC’s Bank Industry Guide and Market Risk Rule. Such company-run stress test numbers relate to the trends and uncertainties at the core of the SEC’s MD&A. However, the MD&A is primarily intended to generate information of a qualitative nature and it would be difficult to argue that the MD&A requires the public disclosure of stress test numbers on a routine basis.

On the bank regulator side, involvement in stress-testing matters began with the onset of the global financial crisis. As part of its effort to stabilize the U.S. financial system, bank regulators conducted stress tests of large, complex
bank holding companies, estimating revenue, losses, and capital needs under an adverse economic and financial market scenario.191

And, beginning in late 2010, the Federal Reserve initiated annual Comprehensive Capital Analysis and Review (CCAR) for such companies, and incorporated stress testing as part of the Federal Reserve’s supervisory program.192 Each company is required to provide highly detailed data on its loan and securities portfolios, including information on the estimated sensitivity of their trading and derivatives positions to changes in a wide range of market rates and asset prices, and volatilities and correlations of those rates and prices.193 With these supervisory stress tests, the data were provided by the companies themselves. However, whether a company was deemed to pass the stress test (i.e., had sufficient capital to weather the hypothesized scenario) depended on how the company fared when all its data were input into a series of models that had been largely developed or used by the Federal Reserve, not those of any individual company.

In 2010, the Dodd-Frank Act directed the Federal Reserve to establish a new, additional stress-testing program.194 The Federal Reserve’s CCAR program applies only to the largest bank holding companies: as of September 30, 2013, 30 companies participate.195 Dodd-Frank’s stress-testing requirements applied to a broader range of companies, including savings and loans and certain nonbank financial firms.196

Section 165(i)(1) of the Dodd-Frank Act contemplates that the Federal Reserve conduct an annual stress test of each covered company to evaluate whether the covered company has sufficient capital . . . to absorb losses” in “baseline, adverse, and severely adverse conditions.”197 As with CCAR, the modeling techniques and assumptions used in the Dodd-Frank annual stress testing are those adopted by the Federal Reserve, not the individual company.198 The hypothetical scenarios to be used are those prescribed by the Federal Reserve.199 As of November 1, 2013, the Federal Reserve contemplated that it would publicly disclose a summary of results of this supervisory stress test under the Dodd-Frank Act as well as a summary of the certain stress test

193. A description of the 2012 CCAR stress tests is set out at Hu, Too Complex to Depict?, supra note 18, at 1659.
196. Id.
197. Dodd Frank Stress Testing Rule, supra note 1, at 62,379.
198. Id. at 62,385.
199. Id. at 62,387.
results under CCAR by March 31, 2014. In both cases, the Federal Reserve anticipated that the results disclosed “will be those resulting from the stress tests under both the supervisory adverse and the supervisory severely adverse scenarios.”

The foregoing discussion of CCAR and Dodd-Frank Section 164(i)(1) has focused on supervisory stress tests. These tests are “supervisory” in at least two senses: First, the regulator’s models are used in assessing how a company is likely to fare in stressed conditions. Second, the hypothetical scenarios to be used are specified by regulators.

Section 165(i)(2) of the Dodd-Frank Act focuses, in contrast, on company-run stress tests. The largest financial institutions (i.e., bank holding companies with total consolidated assets of $50 billion or more and nonbank financial companies designated by the Financial Stability Oversight Council) are required to not only undergo the annual supervisory stress tests but also semi-annual company run tests. These firms were required to make summaries of the results of the company-run stress tests to the public beginning in March 2013.

With these Dodd-Frank company-run stress tests, the regulator’s methodologies are not applied to the bank-supplied data in estimating the results. Thus, each company is free to use its own methodologies, subject to certain general expectations and principles adopted by bank regulators in 2012.

What hypothetical scenarios are used for company-run stress tests depends on whether it is the “annual” test using data as of September 30 of each year or the “mid-cycle” test using data as of March 31 of each year.
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With the "annual" test, the scenarios are specified by the Federal Reserve. With the "mid-cycle" company-run stress tests, the Federal Reserve will not provide scenarios to the covered companies. Instead, the company is required to develop and use a minimum of three sets of its own scenarios of varying degrees of stress—a baseline, adverse, and severely adverse scenario. The scenarios must be tailored to the specific circumstances of a company. The Federal Reserve states that adverse and severely adverse scenarios "should reflect a company's unique vulnerabilities to factors that affect its firm-wide activities and risk exposures" and that companies "should consider their own risk profiles and operations in designing specific elements" of both scenarios.

The Federal Reserve requires the public disclosures to be granular. The disclosures would occur by posting the required information on the company's website or "in any other forum that is reasonably accessible to the public." In terms of content, the focus is on a summary of the company-run stress tests results only under the "severely adverse scenario."

In terms of quantitative disclosure, the Federal Reserve mandates that the company disclose, "at a minimum," such information as estimates for such items as provisions for trading and counterparty losses, other losses and gains, net income before taxes, and pro forma regulatory capital ratios.

In terms of qualitative disclosure, the Federal Reserve focuses especially on the specifics of the stress tests used, including much information on the limitations of such tests and the associated methodologies. In terms of methodologies, for example, the company must include a "general description of the methodologies used in the stress test" and provide clear descriptions of the methodology used to produce its projections for losses, revenues, changes in capital positions and other matters. Moreover, "where judgment is an essential part of the ... projections," the company must describe:

- the rationale and magnitude of the judgment, as well as the process it used to ensure consistency of projections with the conditions of the severely adverse scenario.

The key assumptions used in the company's models used to project loss and revenue estimates must be disclosed. If the models rely on historical...
relationships, the company needs to describe why these relationships are expected to hold in the severely adverse scenario. The company also needs to justify the company’s severely adverse scenario, such as by describing the rationale for the selection of variables and the process for projecting variables.

IV. The Descriptive Mode and the Complex Objective Realities of Major Banks

As noted in the Introduction, there is a troubling pattern: even as major banks are providing careful, voluminous information, many believe that major banks are opaque, especially with respect to the risks to banks flowing from derivatives and other financial innovations. As first suggested in the June 2012 *Too Complex to Depict?* article, this puzzling pattern partially stems from the structural limitations to the core approach to information that the SEC has always relied on. As we have just seen, the U.S. Basel 2.5 Rule and the Federal Reserve’s company-run stress testing rule largely relied on the same approach—the descriptive mode illustrated in Figure 1.

The prior work showed the insufficiency of the descriptive mode and the need to tap the potential of other modes in three contexts, two of which were related to financial innovation: asset-backed securities and major banks. As that work was in the final stages of editing, the JPM Chief Investment Office credit derivatives debacle started unfolding. An afterword was included based on information publicly available as of May 2012.

In this Section IV.A, I offer an overview of the two basic roadblocks to the effectiveness of the descriptive mode in the major bank context, extending the conceptual framework advanced in the prior work and using the more refined terminology set out in Section I.B. In Section IV.B, I re-consider the JPM scandal in light of undisputed evidence that came to light after May 2012.

A. Structural Roadblocks

There are two basic structural roadblocks that financial innovation poses to the descriptive mode, even assuming completely well-intentioned and sophisticated intermediaries. First, the depiction tools needed to generate the descriptions are too crude relative to the complex objective realities created by the modern process of financial innovation. Second, the intermediary might suffer from “true” and “functional” misunderstandings of the objective reality. If the intermediary does not understand or acts as if it does not

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215. The non-financial innovation-related context was that of multiemployer pension plans. See Hu, *Too Complex to Depict?*, supra note 18, at 1638-47 (asset-backed securities), 1651-65 (major banks), 1665-66 (multiemployer pension plans), 1667-78 (major banks), 1679-87 (all contexts).

216. *Id.* at 1667-78.

217. *Id.* at 1653-55 and 1671-76 (citing Hu, *Misunderstood Derivatives*, supra note 55) (discussing true and functional misunderstandings by major banks).
understand the objective reality, any descriptions the intermediary offers are necessarily flawed.

1. Depiction Tools

The first roadblock centers on the current state of depiction tools needed by the business entity to craft the description. It is difficult to capture the highly complex objective realities flowing from modern financial innovation with the rudimentary linguistic, accounting, and visual tools of description on which the entity must rely. As we have seen, even the more modern depiction tools used to measure risk such as VaR have serious problems.

Figure 1 shows how the business entity must engage in an "observe-analyze-describe" process to generate the intermediary depiction being provided to market participants. This depiction tools roadblock is situated at the "describe" phase of the process.

Accounting standards and the specific accounting judgments a corporation and its outside auditor make directly affect the descriptions found in the corporation’s financial statements. If such standards and judgments result in descriptions that fail to correctly capture the true economic state of affairs with sufficient granularity, a serious disclosure problem arises. This is especially so if the investor is unable to "reverse engineer" the descriptions into the objective reality. In addition, if companies vary widely as to the standards used and judgments made, cross-company comparisons become difficult.

Surprisingly, accounting-related matters were largely a regulatory backwater in the early years of the SEC. A 1939 study of the balance sheets and income statements of seventy large companies concluded that "[o]n vital counts, investors are left conjecturing" on such critical matters as sales, costs of sales, and inventories and that an investor "does not have a minimum of information upon which to form an intelligent opinion on buying or selling . . . ." Accounting issues certainly have not gone away. Most fundamentally, accounting standards often lead to depictions far removed from economic reality. When Enron, WorldCom, and other companies either game or depart from accounting standards, the descriptions are farther removed still.

But far more accounting information is now required than in the past. And the malleability of accounting depictions has decreased for several reasons. First, there is now far greater standardization of accounting information, allowing for cross-company comparisons of performance. Unless the more "principles-based" International Financial Reporting Standards approach is
incorporated into the financial reporting system for U.S. issuers, U.S. companies are all subject to the tighter “rules-based” Generally Accepted Accounting Principles.221 Second, the Sarbanes-Oxley Act, enacted in 2002 in the wake of Enron, WorldCom, and other scandals of that era, adopted a variety of measures to enhance auditor independence and created the Public Company Accounting Oversight Board (“PCAOB”) to oversee audits “in order to protect the interests of investors and further the public interest in the preparation of informative, accurate, and independent audit reports.”222

Good accounting information is, of course, useful to investors in gauging the risk characteristics of any business. Many longstanding measures of profitability (e.g., rates of return on assets and earnings per share), short-term liquidity risk (e.g., current ratios and quick ratios) and long-term liquidity risk (e.g., liabilities-to-asset ratios and debt-to-equity ratios) rely on accounting numbers as inputs.223 Additionally, accountants have devoted substantial amounts of time to difficult issues associated with the reporting of derivatives and other new financial products, such as in connection with “hedge accounting” principles.224

However, although such accounting information is useful for assessing the risk characteristics of all businesses, there are real limitations to its usefulness in gauging the true risk characteristics of modern-day major banks.

Even the calculation of fair value has proven difficult with respect to certain complex financial products, some of which are thinly traded or not traded. And at the height of the global financial crisis, the markets for certain complex securities froze, making it especially difficult to determine what prices the products might fetch if they were sold. Colloquially, issues arose as to whether products were being “marked to market,” “marked to model,” or simply “marked to myth.” In other words, precisely when transparency regarding bank solvency may be most important in terms of avoiding bank “runs,” achieving transparency may be most difficult. Inspection reports on the part of the PCAOB released in 2011 and 2012 showed a threefold increase in

221. See, e.g., OFFICE OF THE CHIEF ACCOUNTANT, U.S. SEC. & EXCH. COMM’N, WORK PLAN FOR THE CONSIDERATION OF INCORPORATING INTERNATIONAL FINANCIAL REPORTING STANDARDS INTO THE FINANCIAL REPORTING SYSTEM FOR U.S. ISSUERS: FINAL STAFF REPORT (July 13, 2012). The “Introductory Note” of this report states that the SEC “believes it is important to make clear” that the SEC has not “made any policy decision as to whether International Financial Reporting Standards should be incorporated into the financial reporting system for U.S. issuers, or how any such incorporation, if it were to occur, should be implemented.” As to differences between U.S. GAAP and the International Financial Reporting Standards, see, for example, OFFICE OF THE CHIEF ACCOUNTANT, U.S. SEC. & EXCH. COMM’N, WORK PLAN FOR THE CONSIDERATION OF INCORPORATING INTERNATIONAL FINANCIAL REPORTING STANDARDS INTO THE FINANCIAL REPORTING SYSTEM FOR U.S. ISSUERS (Nov. 16, 2011).
224. See id. at 580-93.
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valuation-related audit problems. Moreover, during the global financial crisis, many bank regulators and bank managements came to believe that fair value accounting exacerbated the problems, and certain accounting practices changed accordingly.

Even assuming that it is possible to do fair value accounting in an effective and impartial way, there is the basic problem of the quick obsolescence of quarterly or annual reports in the banking context. There is some preliminary evidence that the speed with which banks trade in and out of their assets contributes materially to bank opacity.

The limitations of the accounting tools run far deeper than such valuation issues. Accounting is generally directed at providing historical, not prospective, numbers and is not explicitly directed at generating risk information. Even modern accounting efforts relating to new financial products primarily involve the reporting of their valuation at instants in time or the description of how past changes in their value should affect (or not affect) reported income over past periods.

Longstanding accounting measures relating to risk are oriented to the past and provide guides to the future only inferentially. Profitability measures related to past periods of time and the liquidity and insolvency risk ratios rely on historically-based accounting inputs. Moreover, even with respect to those historical periods or points in time, such longstanding measures suffer from a variety of well-known defects.

In the era in which the SEC’s Bank Industry Guide was adopted, banks served primarily to provide simple loans. Therefore, the failure to directly quantify future risks did not matter as much. With sufficient granularity of information about a simple loan—e.g., principal amount, the category of buyer in terms of industry or creditworthiness, interest rate, and maturity—an outside observer can, without Greek-letter laden mathematical models, broadly gauge the likely and maximum returns and risks associated with the loan. Changing market conditions would not affect the contracted-for payoff structure of the loan: the principal amount remained the same and, in the case of a fixed interest rate loan, even the interest remained the same as well. Moreover, with such simple products, rules of thumb relating to past loan delinquencies and so forth sufficed.

228. See, e.g., STICKNEY ET AL., supra note 223, at 244-45, 254, 272.
With derivatives, the contracted payoffs vary substantially with market conditions, and the different future states of the world could significantly affect such payoffs. Consider, for instance, a simple fixed-for-floating interest rate swap in which a bank is the floating rate payor. Even assuming no chance of default on the part of the bank’s counterparty, it is not clear whether the bank will be receiving cash from the counterparty (which would occur if interest rates dropped) or paying cash to the counterparty (which would occur if interest rates increased). If interest rates rise, the maximum amount the bank may owe in the worst case is unknowable: theoretically, interest rates can approach infinity. In contrast, with a simple loan, interest rate issues aside, the most a bank can lose is easy to identify and immutable: the principal amount of the loan. A formal model is necessary to guess at likely and “maximum” exposures on the swap, even when excluding any consideration of credit risk. And this is with a simple fixed-for-floating interest rate swap. What if the swap were more exotic? For example, what if the maturity date were extendable at the option of the bank’s customer?

Furthermore, a bank may simultaneously enter into multiple interest rate swap transactions—in some of which it may be a fixed rate payor. Moreover, the bank may enter into other types of interest rate derivatives (such as interest rate options), currency derivatives, commodity derivatives, and so forth. In addition, the bank may be engaged in foreign exchange trading, securitizations, and other activities.

How will these individual transactions, in a wide range of products, be correlated with each other in the future? Is historical data likely to be helpful and, if so, what historical periods should be looked at? To what extent are certain historical data, such as those relating to the violent moves associated with the May 6, 2010 “flash crash”—when blue chip stocks fell to a penny or increased to $100,000 in a matter of minutes on no news—suggestive? How should models deal with such extreme events?

Modern risk measurement tools, such as VaR, all suffer from model risk to some degree. This is one reason why, as we have seen, the U.S. Basel 2.5 Rule requires information relating to the historical performance of the VaR models, and also requires that such models have certain characteristics and be based on specified historical periods. Moreover, VaR models are subject to bank regulator approval. In contrast, the SEC’s Market Risk Rule makes only a very limited attempt at dealing with model risk.

Also, as we have discussed, some tools (such as VaR) are not even intended to generate the kind of information that some investors assume they provide. Moreover, the models used by banks, and the ways in which the

229. For a discussion of the risks to a bank from entering into a simple interest rate swap, and how such risks influenced the initial 1988 Basel accord, see Hu, Swaps, supra note 69, at 363-70.

230. As to this flash crash, see, for example, Hu, EMH and the Law, supra note 1, at 186-90; Hu, Too Complex to Depict?, supra note 18, at 1701-07.
results are reported, vary widely. While some efforts to improve modeling and to facilitate cross-bank comparisons—including comparisons on the part of the Basel Committee and bank regulators—have been very helpful, there is nothing analogous to Generally Accepted Accounting Principles. “Risk accounting” standards, in this sense, have yet to arise.

This Article is centered on mandated public information more explicitly directed at providing risk information, especially future-oriented risk information of a quantitative nature. The SEC and bank regulators have already moved in this direction but, at least in the U.S., the accounting profession is only starting to do so and in a limited way.231 For these and other reasons,232 the activities of accounting bodies are beyond the scope of this Article, and the discussion will be largely limited to the activities in the two universes the SEC and bank regulators have created.

2. Banks and “True” and “Functional” Misunderstandings of Objective Reality

In the context of modern financial innovation, the descriptive mode can suffer from a roadblock more fundamental than the crudeness of existing depiction tools. If the entity providing the description itself does not understand the objective reality, how can the description it offers correctly convey the objective reality to investors?

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232. Although the formulation of “Generally Accepted Accounting Principles” is the responsibility of the Financial Accounting Standards Board, the SEC’s Office of Chief Accountant, through Regulation S-X and its Accounting Series Releases and Financial Reporting Releases, establishes the financial reporting requirements applicable to the federal securities laws. Moreover, all accounting firms that prepare audits for public companies must register with the Public Company Accounting Oversight Board, which body has broad authority over such matters as auditing and quality standards. The SEC is responsible for appointing all members of the PCAOB, including the Chair. See Procedures for Appointment of a Member or Chairperson of the Public Company Accounting Oversight Board, SEC. & EXCH. COMM’N (Aug. 9, 2010), http://www.sec.gov/about/offices/oca/pcaob-appointments.htm; COFFEE & SALE, supra note 51, at 56, 70.
In terms of the “observe-analyze-describe” process set out in Figure 1, this misunderstanding roadblock is situated at the “observe” phase or “analyze” phase, or both, depending on the circumstances.

Misunderstandings of modern financial innovation were manifest during the global financial crisis. AIG’s troubles stemmed in material part from its mistaken beliefs about the risks posed by its credit derivatives activities. Through December 4, 2013, the SEC had brought enforcement actions against 166 entities and individuals addressing misconduct that led to or arose from the crisis. Many involved misleading disclosures to investors about the banks’ risk exposures to complex financial products or about the risk characteristics of the products themselves.

Misunderstandings at major financial institutions can flow from two sources, as initially (and more fully) discussed in a 1993 article (hereinafter, Misunderstood Derivatives). One source can lead to what can be referred to as “true” misunderstanding: no one at a bank may understand the true risk-return characteristics of a new financial product. Another source can lead to what can be referred to as “functional” misunderstanding: there may be one or more people at a bank who understand the true risk-return characteristics of a new product, but the bank acts as if it does not understand it.

The highly peculiar nature of the modern process of financial innovation can result in true misunderstandings. On the one hand, the process has some characteristics redolent of physics, chemistry, and other traditional sciences. The people involved have advanced quantitative skills, often with Ph.D.s in physics and math, routinely deal with complex models, and rely on computer processing of massive amounts of data. New ideas for how to value or how to hedge positions, be they from advances in theory or from empirical findings, are prized, as are new product ideas. The process of innovation is

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233. See, e.g., Hearing to Review the Role of Credit Derivatives in the U.S. Economy: Hearings Before the H. Comm. on Agriculture, 110th Cong. 41-46 (2008) [hereinafter Hearing to Review the Role of Credit Derivatives] (statement of Henry T. C. Hu). See also International Swaps and Derivatives Association, AIG and Credit Default Swaps (November 2009) (a derivatives trade association’s account emphasizing the fact that while the common perception regarding the near-collapse of AIG is that the company’s financial problems were largely due to its credit default swaps, AIG’s financial difficulties can be traced to a broader set of reasons).


236. Hu, Too Complex to Depict?, supra note 18, at 1609, 1653-58.

institutionalized and central to the competition among the major financial institutions.

As with traditional sciences, truth is ephemeral. And paradigm shifts occur, upending existing valuation and hedging methodologies. Some financial institutions will recognize the need for a paradigm shift earlier than others and will start using the better valuation techniques and methodologies faster. From the standpoint of the descriptive mode, some “true” misunderstandings—the faulty valuations and statements about hedging—may simply be an artifact of the diffusion process of the sort found in the traditional sciences.

Differences between financial products risk analysis and the traditional sciences can also create “true” misunderstandings. To take one example, departures from the scientific norm of “universalism” could pose especial descriptive problems for financial institutions dominant in any particular financial product. The sociologist Robert K. Merton’s canon of “universalism” centers on the truth of claims being determined through application of objective criteria without regard to the source’s personal, social, or other attributes: “The Haber process cannot be invalidated by a Nuremberg decree nor can an Anglophone repeal the law of gravitation.”

This universalism theme, readily visible in the traditional sciences, does not entirely apply to the OTC derivatives market. Misunderstood Derivatives argued that the identity of the thinker matters and that a particularly dangerous situation arises if the thinker happens to be dominant in the market for a particular financial product. That is, even if the model that a dominant dealer uses is seriously flawed, the dealer’s importance alone makes the model at least temporarily relevant. Moreover, should the dealer decide to withdraw from the market for that derivative, liquidity may dry up and the value arising from that dealer’s idiosyncratic theoretical model may be particularly irrelevant. There is no Mertonian universalism here. The impact of this is likely to be especially severe with respect to the more arcane instruments and products dominated by a few dealers in chaotic market conditions.

True misunderstandings on the part of the derivatives dealer can also result from other factors. The 1993 article showed how, for instance, the process of financial innovation may be undermined by cognitive biases, such as the tendency to ignore low probability catastrophic events. The article provided evidence that this was occurring in derivatives modeling. Such cognitive biases appear to have contributed to the AIG’s misunderstanding of the risk-return characteristics of credit derivatives activities.

240. Id. at 1487-91.
Misunderstood Derivatives also suggested that a basic externalities problem exists that could result in misunderstandings. With many new financial products, the innovator is unable to obtain intellectual property protection allowing him to capture the full benefits of the innovation. Given this “inappropriability” problem associated with financial research and development, dealers may fail to invest enough in fully understanding the true characteristics of their complex products. This “just-enough” information standard may lead to valuations or hedging strategies that are seriously flawed.

The foregoing “true” misunderstandings assume that no one at a bank knows the actual objective reality and that no one understands how this can undermine the quality of the bank’s descriptions. But there can be another kind of misunderstanding that has a similar impact on descriptions: there may be one or more individuals at the bank who do comprehend the objective reality, but the bank as an organization acts as if it does not understand that reality. The descriptions that the organization offers reflect the flawed perceptions, rather than the true perceptions of those “in the know.” This “as if” or “functional” misunderstanding has the same impact on descriptions as true misunderstandings.

There are several sources of such functional misunderstandings, including the nature of financial science as practiced in banks and the banks’ organizational complexities. The 1993 article showed how the highly asymmetric incentive structures found in the derivatives world, coupled with such factors as senior managers who may not be as numerate as their quant traders and the hidden and long-term nature of some derivatives risks, provide fertile ground for principal-agent problems within the bank. In this context, an ethically-challenged trader may find it tempting to do what he believes might be individually rational from an economic standpoint: to engage in exceptional risk-taking, exploiting the difficulty his seniors may have in correctly perceiving the actual risks of his activity, especially those risks that are subtler and longer-term and thus less likely to be captured by the bank’s internal risk measurement tools. The particular trader may understand the true risk characteristics of his complex trading strategies, but the bank as an organization is functioning as if it does not and the depictions reflect this functional ignorance. The ramifications of functional ignorance go beyond depictions. Indeed, had the bank as an organization understood the strategy’s true characteristics, the bank may not have even permitted those strategies in the first place.

Functional misunderstandings may also flow from sources more innocent than principal-agent problems. Major money center banks are large, complex organizations that span the globe. In all such organizations, private or governmental, some “siloing” of information is inevitable.

243. See id. at 1492-93.
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That is, information may be found in pockets of the organization or up and down a particular line of control, as with a stove pipe. Sometimes siloing occurs because there are institutional reasons for engaging in this kind of behavior, such as the desire to keep certain sensitive information from leaking out. Sometimes it is simply because of the sprawling, complex nature of many banks and the difficulty of fostering open communication across the empire. One or more individuals at one unit, perhaps in some foreign city, may truly understand the objective reality, but siloing problems may result in those at headquarters—those responsible for the disclosure documents—not understanding the objective reality. The challenges posed by the size and complexity of the organization and a desire to keep certain information proprietary, rather than any intentional attempt to hide information from headquarters (much less any intentional attempt for headquarters to hide information from investors), may result in flawed intermediary depictions.

B. Structural Roadblocks: An Updated Analysis of the 2012 JPMorgan Chase Chief Investment Office Debacle

1. The Debacle as of May 2012

Too Complex to Depict? was first presented at an academic symposium in February 2012. In early May 2012, as the paper was in final editing for the associated symposium issue in June, major derivatives-related problems involving JPM and its Chief Investment Office (CIO) started coming to light. Because this JPM CIO situation appeared to so well illustrate the paper’s core thesis, an 11-page afterword was included at the last minute based on information available as of late May 2012. In the interest of fairness, the afterword explicitly assumed that not a single individual associated with JPM had acted in any way inappropriately.

The discussion in this current Article reflects certain developments subsequent to late May 2012 and newly available information from JPM itself or explicitly admitted by JPM. The new information is consistent with the afterword’s analysis of the depiction tools roadblock as well as both the true and functional misunderstanding roadblocks. Certain situations appear to reflect a hybrid of true and functional misunderstandings and, for convenience, are discussed as a whole rather than in a segmented fashion.

The evening of April 5, 2012, Bloomberg and the Wall Street Journal ran stories about a London-based trader at JPM’s CIO having amassed credit derivatives positions so large that the trader in London was disrupting prices in the $10 trillion market. The stories reported that they believed that the trader,

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244. Hu, Too Complex to Depict?, supra note 18, at 1667-78.
245. Id. at 1675.
246. See Stephanie Ruhle, Bradley Keoun & Mary Childs, JPMorgan Trader’s Positions Said to Distort Credit Indexes, BLOOMBERG, Apr. 6, 2012, 9:43 AM,
Bruno Iksil, had been selling so much protection on credit derivatives linked to the “CDX IG 9” index that unusual prices and price volatility were occurring—some referred to him as the “London whale.” The net notional amount in the CDX IG 9 jumped from $92.6 billion at year-end to $144.6 billion on March 30. The Wall Street Journal story reported that “[o]ne person familiar with the matter said the bank has run tests that show Mr. Iksil’s positions likely will be profitable in any economic or market downturn.” Ina Drew, the head of the CIO, declined to comment when contacted by Bloomberg.

On April 13, JPM released its earnings for the first quarter of 2012. During the earnings call with analysts, both Jamie Dimon, JPM’s CEO, and Douglas Braunstein, JPM’s CFO, dismissed the significance of the media accounts. Dimon referred to the issue as a “complete tempest in a teapot.” Neither the 15-page press release nor the 21-page earnings release that day even saw fit to mention the CIO. The closest JPM came to disclosing risk exposures related to the CIO appeared on three lines on page 42 of a 51-page “Supplement to First Quarter 2012 Earnings Release.” On that page, JPM reports the VaR for its CIO as $67 million, calculated at a 95% confidence level. To put that $67 million in perspective, JPM’s total net income and net revenue for the first quarter were $5.4 billion and $26.7 billion, respectively.

Shortly after the earnings call, losses of roughly $100 million a day began showing up on the CIO’s books. As the losses kept on growing, JPM was working to prepare the Form 10-Q set for release on April 27. Dimon decided to postpone the 10-Q until he could better understand the trades and their impact. On April 30, dissatisfied with the granularity of the daily reports he...
was getting, Dimon stated: “I want to see the positions! . . . Now! I want to see everything!” When Dimon saw the numbers, he “couldn’t breathe.”252

On May 10, 2012, JPM filed its 10-Q. Dimon began a conference call that same day by highlighting problems at the CIO and stepping back from the VaR that JPM had reported on April 13. As for the problems, Dimon revealed “slightly more than $2 billion trading loss on [JPM’s] synthetic credit positions” and said that further losses could amount to “as much as $1 billion or more.”253 In explaining this, Dimon stated:

Regarding what happened, the synthetic credit portfolio was a strategy to hedge the Firm’s overall credit exposure . . . [I]n hindsight, the new strategy was flawed, complex, poorly reviewed, poorly executed and poorly monitored. The portfolio has proven to be riskier, more volatile and less effective than [the] economic hedge that we thought.254

As for the VaR, Dimon stated:

We are also amending a disclosure . . . about CIO’s VAR, Value-at-Risk. We’d shown average VAR at 67. It will now be 129. In the first quarter, we implemented a new VAR model, which we now deem inadequate. And we went back to the old one, which had been used for the prior several years, which we deemed to be more adequate. The numbers I just gave are effective March 30th, the first quarter.255

The Form 10-Q did not detail the change in the reported March 31 VaR numbers, the change in the methodology, and the source of the CIO’s problems. It reported its March 31 VaR (at the 95% confidence level) as $129 million, stating simply that:

CIO VaR presented above for the period ended March 31, 2012 supersedes the Firm’s VaR disclosures included in its Form 8-K filed on April 13, 2012 and was calculated using a methodology consistent with the methodology used to calculate CIO’s VaR in 2011, including the first quarter of 2011 reflected above.256

In the two-week period between the close of exchange trading on May 10 and on May 25, JPM’s market capitalization dropped over $27 billion.

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254. *Id.* at 2.
255. *Id.*
2. Depiction Tools

JPM’s central depiction of its CIO risk exposures lay in its VaR disclosures. The VaR reported on April 13 was $67 million while that reported on May 10 was $129 million, nearly double that earlier reported. JPM changed its methodology: the one used in its April 13 disclosure was deemed inadequate by JPM. So JPM went back to an older methodology, which was “more adequate,” which generated the $129 million figure.

JPM did not describe what the differences between the “inadequate” and the “more adequate” methodologies were at that time. Even though the changes were material enough to cause a near-doubling in the reported CIO VaR number, outsiders were left guessing as to the methodological changes that would account for this.

Developments subsequent to the afterword of *Too Complex to Depict?* emphasized further the fluidity and limitations of the VaR depiction tool. During the third quarter of 2012, JPM applied a new VaR model to calculate VaR for its synthetic credit portfolio.257 Prior period VaR results, including those for the CIO, were not recalculated using the new model, making it difficult for outsiders to gauge risk-taking across time. And, again, the disclosures regarding this third VaR model did not allow outsiders to reverse-engineer the calculation in order to understand the objective reality underlying the depiction. JPM stated that “[t]he new model uses data that references actual underlying indices, rather than being constructed through single name and index basis . . .”258

3. “True and “Functional” Misunderstandings

The afterword suggested that in the area of misunderstandings, JPM was mistaken as to at least three issues: first, the core model that JPM used in measuring risk exposures; second, the general methodology for gauging possible risk exposures; and third, its hedging strategy and the portfolio associated with that strategy. As to the first: in Dimon’s words of May 10, the VaR model it had used for the purposes of its April 13 disclosure was “inadequate.”259 The May 10 model was not only “more adequate,” but generated a risk exposure number ($129 million) nearly double that under the earlier VaR model ($67 million). As to the second: in its April 6 story, the *Wall Street Journal* reported that the bank’s own tests showed Mr. Iksil’s position “likely will be profitable in any economic or market downturn.”260 Only a month later, on May 10, Dimon noted a trading loss of more than $2 billion.261

258. Id.
259. JPM May 10 Conference Call, supra note 253, at 2.
261. Id.
As to the third: in terms of the hedging strategy, Dimon stated the same day that, "in hindsight," its new hedging strategy was "flawed," and that the portfolio associated with that strategy was "riskier, more volatile, and less effective" as an "economic hedge than we thought." Dimon explicitly attributed the mistakes to the fact that the CIO’s trading strategy had become "more complex."

New information since the publication of *Too Complex to Depict?* offers perspectives on the initial analysis of JPM’s misunderstanding of the objective reality of its portfolio. To give the benefit of every possible doubt to JPM and its current and former officers and employees, the below discussion limits itself to the three following sources:

(1) JPM’s own admissions in settling the SEC’s enforcement action, attached as "Annex A" to the SEC’s cease and desist order of September 19, 2013 ("JPM Admissions").

(2) The "Report of JPMorgan Chase & Co. Management Task Force Regarding 2012 CIO Losses" dated January 16, 2013 ("JPM Task Force Report"). JPM established a management task force led by the co-Chief Executive Officer of JPM’s Corporate and Investment Bank to review losses incurred in 2012 by the Chief Investment Office. The review was conducted by the task force and its legal advisors and included a significant number of interviews of current and former JPM employees and an examination of millions of documents and tens of thousands of audio files.

(3) The "Report of the Review Committee of the Board of Directors of JPMorgan Chase & Co. Relating to the Board’s Oversight Function With Respect to Risk Management" dated January 15, 2013 ("JPM Board Review Committee Report"). On May 23, 2012, the Board of Directors established a Review Committee to oversee the investigation by the management task force. This report was based on the Review Committee’s independent investigation and analysis of the Chief Investment Office trading losses and its review of the JPM Task Force Report. The Review Committee and its outside counsel examined

262. *Id.*
263. *Id.* at 10.
records of the Board and its committees and other JPM internal records and interviewed Board members and members of management.

I leave aside other information that subsequently emerged, including the majority and minority staff reports of the U.S. Senate Permanent Subcommittee on Investigations released on March 15, 2013.267

i. VaR

JPM appears to have repeatedly suffered from what can be categorized as true misunderstanding regarding its VaR, based on the detailed information disclosed in the JPM Task Force Report. Prior to the end of January 2012, the CIO used what was known within the firm as the “Basel I model” for calculating VaR.268 But the VaR calculations that this Basel I model was generating were considered too high. Efforts were made to develop a better model throughout the fall of 2011. The result was a new model—what was referred to internally as the “Basel II.5 model”269—that was “thought to be a substantial improvement that would more accurately capture the risks in the portfolio.”270

On January 30, JPM’s “Model Review Group” authorized the use of the Basel II.5 model for purposes of calculating the VaR for the synthetic credit portfolio beginning the previous trading day (January 27).271 Formal approval of the model followed on February 1, and from February to April, the new VaR model was in operation.

However, in early May 2012, because of losses in the synthetic credit portfolio, reviews of the Basel II.5 model were undertaken, and problems were found.272 A decision was made to stop using the Basel II.5 model and not to rely on it for purposes of reporting the CIO VaR in JPM’s first-quarter Form 10-Q. Following the decision to abandon the Basel II.5 model, yet more problems were found.

The JPM Task Force found that the process surrounding the approval and implementation of the Basel II.5 model was inadequate in several respects directly related to the true misunderstanding issue.273 First, the resources dedicated to the development of the model were “inadequate.”274 The individual responsible for developing the model had not previously developed

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269. As opposed to the “Basel 2.5” revisions to the Basel II framework discussed in Section III.A or the associated U.S. rule that came into effect on January 1, 2013.
270. JPM Task Force Report, supra note 265, at 79 n.98.
271. Id. at 126-27.
272. Id. at 128-29.
273. Id. at 104-105.
274. Id. at 104.
or implemented a VaR model and was not given the support he needed and requested to develop the model. Second, the Model Review Group’s review of the new model was not as rigorous as it should have been. For instance, it did not compare the results under the existing Basel I model to the results under the new Basel II.5 model.

Cast in terms of Jamie Dimon’s statements, the initial Basel I model, flawed as it was, was “more adequate” than the one used for the April 13 earnings call.275

Apparently, while “more adequate,” it ultimately proved not good enough. According to JPM’s Form 10-K for 2012, during the third quarter of 2012, JPM applied a new VaR model for the synthetic credit portfolio, because it “more appropriately captured the risks of the portfolio.”276 The information provided as to this new model consisted of the following: “The new model uses data that references actual underlying indices, rather than being constructed through single name and index basis, which [JPM] believes is a more direct representation of the risks that were in the portfolio.”277

ii. Overall Risk and Hedging Strategy

The JPM Task Force confirmed that the Chief Investment Office failed to understand how to hedge the risks of the synthetic trading strategies.278 The division also failed to understand the magnitude of potential losses.279 This involved both true misunderstandings and functional misunderstandings.

As for true misunderstandings, the task force stated that “[t]he trading strategies that were put in place in early 2012 were poorly conceived and vetted.”280 Moreover, neither the trading nor its impact on risk-weighted assets “were fully understood by CIO management or the traders.” Instead of subjecting the trading strategies to rigorous analysis and questioning prior to implementation, they “put in place the trading strategy without fully understanding what risks were being taken on, particularly in light of the size of the positions being built over the course of the first quarter of 2012.”281 The trading strategies were “not fully understood” by CIO personnel “who might have been in a position to manage the risks of the Synthetic Credit Portfolio effectively.”282

As for functional misunderstandings, in early April—i.e., prior to Dimon’s April 13 “tempest in a teapot” characterization—the CIO delivered “what in hindsight were overly optimistic and inaccurate analyses regarding the
potential losses to which the Synthetic Credit Portfolio was exposed.

Specifically, the CIO advised senior management that the synthetic credit portfolio was “overall risk balanced,” and for the second quarter, showed “a P&L range of -150MM to +250MM,” with a “significantly positive” upside potential in the event of defaults. This profit-and-loss estimate turned out to be significantly off-the-mark. The estimate was based on a “Monte Carlo” analysis in which the person performing the analysis did not have confidence and which appears to have been selected by his supervisor specifically because it generated more positive profit-and-loss estimates.

iii. The Siloing of Information

The siloing of information was a major source of JPM’s misunderstandings of the objective reality. JPM admitted that this contributed to JPM’s “incomplete understanding of deficiencies” relating to the valuation problems occurring at the CIO. The pattern was pervasive, occurring among employees below the senior management level, between employees and senior management, and between senior management and committees of the Board of Directors.

Concerning employees below the senior management level, JPM admitted that:

JPMorgan Senior Management’s emphasis on confidentiality and sharing information on a need-to-know basis contributed to this incomplete understanding. JPMorgan Senior Management was concerned about sensitive information relating to CIO’s positions being widely distributed and imposed restrictions on the creation and sharing of work product relating to those positions. These instructions affected the ability of those conducting the reviews to share, learn from, and build upon each other’s work.

As for information sharing between employees and senior management, JPM admitted that “a number of significant facts” learned in the course of various internal reviews “were not . . . escalated to JPMorgan Senior Management.” This contributed to “JPMorgan’s incomplete understanding of deficiencies” related to the Chief Investment Office internal controls.

Perhaps most strikingly, there was even stove piping of information between senior management and the two key committees of the Board of Directors: the Risk Policy Committee and the Audit Committee. The Board has

283. Id. at 89-90.
284. Id. at 62.
285. Id. at 90.
287. Id. at 11.
288. Id.
289. Id.
the responsibility of overseeing management in its performance of risk management functions and, at JPM, "discharges those responsibilities in the first instance by assigning primary responsibility to the Risk Policy Committee."\(^{290}\)

The information communicated by management to the Risk Policy Committee, at least until late April or early May 2012, "did not suggest any significant problems in the CIO which required close attention from the Committee."\(^{291}\) At the Risk Policy Committee’s meeting on March 20, the head of the CIO presented a report. There was a one-page summary of various metrics for the CIO’s investments and activities as of March 6, 2012, including a VaR calculation for the synthetic credit portfolio of $50.5 million. According to the *JPM Board Review Committee Report*:

> These metrics did not effectively convey the risks of the portfolio, and they were not discussed at the meeting or explained in the written materials. This material did not meaningfully convey information useful to the Committee and did not flag the issues of increasing concern at CIO regarding the synthetic credit portfolio. Indeed, the synthetic credit portfolio was not raised by either the CIO CEO or CRO as a subject for discussion at the March 20, 2012 meeting.\(^{292}\)

Following the April 6, 2012 publication of the *Wall Street Journal* story, the Risk Policy Committee asked that the subject be addressed at the next meeting on April 17, 2012. The Chief Risk Officer of the CIO said that the recent news reports were "based on an inaccurate market perception that the portfolio was unhedged and that the risk was in fact balanced."\(^{293}\) No written materials were provided. Subsequently, some members of the Risk Policy Committee came under criticism for the lack of strong backgrounds in risk management, especially a particular member who was president of the American Museum of Natural History.\(^{294}\)

The siloing of information extended to the Audit Committee of the Board of Directors, the committee charged with overseeing JPM’s internal controls, a matter central to the integrity of the firm’s financial reports.\(^{295}\) For example, on May 2, 2012, the Audit Committee met with some members of JPM senior management with a focus on the mounting losses in the synthetic credit portfolio.\(^{296}\) There was no discussion of either of the two internal reviews related to the traders’ marks or the internal controls at the CIO, even though the

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291. Id. at 1.
292. Id. at 7-8.
293. Id. at 8.
296. Id. at 14.
work was underway. There was also no mention of the fact that an outside law firm had been retained to advise on disclosures to be made in the first quarter Form 10-Q related to the CIO. It was not until hours before the filing of JPM’s Form 10-Q on May 10 that JPM senior management informed the board that reviews of what occurred in the CIO were underway, including reviews by Internal Audit, legal, the Controller’s staff, and risk management. And, even then, JPM senior management did not discuss the details of or facts learned from three internal reviews.

V. Pathways to Reform: The Multiplicity of Modes and Disclosure Universes

Recognition of the challenges and potential of multiplicity, in terms of parallel disclosure universes and multiple modes of information, is at the core of pathways to reform. The new bank disclosure system was created in material part to address longstanding deficiencies in disclosures related to the risks flowing from modern financial innovation. With creation of the new system, the morphology of public information spans parallel universes with divergent ends and means, involving regulators with vast differences in resources and fields of expertise. In this context, the traditional, dominant, role of the SEC has ended and an effort to harmonize the roles of the two sets of regulators is now essential. Boundary-setting and a degree of “informational neutrality” across the two systems can be helpful in this respect. But these steps are interim in nature. Ultimately, the divergent regulatory quests and differences in resources and fields of expertise make the new morphology unsustainable.

Both disclosure systems largely rely on the descriptive mode. “Information” is conceived as, if not equated to, intermediary depictions. If financial innovation has posed formidable challenges to this traditional approach to information, technological innovation now allows for promising new approaches. An informational portfolio diversification is in order, one consisting of significant regulatory stakes not only in the descriptive mode, but also in the transfer mode and the hybrid mode. All three modes of information deserve full consideration in the portfolio: this kind of “informational neutrality” across modes is needed.

This Part begins with the multiplicity of modes. Section V.A discusses possible changes in the implementation of the descriptive mode, especially with respect to the SEC. The discussion will be brief since many of the changes flow directly from the characteristics of the two disclosure systems analyzed in Parts II and III, and from the structural roadblocks present with the descriptive mode analyzed in Section IV. Sections V.B and V.C set forth the transfer mode and the hybrid mode, respectively, and discuss each mode’s potential and limitations. Section V.D suggests the need for portfolio diversification.

This Part then turns to the multiplicity of disclosure universes. Section V.E begins by showing the unsustainability of the current morphology of public information and proceeds to the need for harmonization of the two disclosure
Disclosure Universes and Modes of Information

systems and the use of boundary-setting and a modest degree of “informational neutrality” across disclosure systems as harmonization strategies.

A. Modes of Information: Changes in the Implementation of the Descriptive Mode

Bank regulators, like the SEC, primarily use the descriptive mode: the business entity observes and analyzes objective reality and, relying on depiction tools, crafts a description on which market participants rely. However, the bank regulators' implementation of the descriptive mode is far more sophisticated than the SEC's, resulting in more useful quantitative risk-related information to investors.

This difference in sophistication can be framed in terms of the two structural roadblocks to the descriptive mode, those flowing from the depiction tools and those flowing from “true” or “functional” misunderstandings on the part of the intermediary.

In terms of depiction tools, one key step that the bank regulators took was to require more standardization as to how intermediaries undertake the observe-analyze-describe process. With tighter constraints on the depiction tools, the risk numbers become more comparable across firms.

As to market risk, for example, the SEC's Market Risk Rule gives the intermediaries wide latitude as to the VaR models they use and the VaR numbers they report. Each intermediary is free to use any model, assumptions, or parameters it wishes so long as it describes them. The SEC also provides little guidance on the confidence level at which VaR numbers are reported. The SEC provides merely that the confidence level must be 95% or higher, absent “economic justification.” As we have seen with the JPMorgan Chase credit derivatives example, the particular model chosen can have a huge impact on the reported VaR number. And, as noted, JPMorgan Chase reports VaRs at a 95% confidence level while Bank of America reports at a 99% confidence level.

In contrast, under the U.S. Basel 2.5 Rule, all intermediaries must report the VaR numbers at a 99% confidence level (and for a ten-business-day holding period). Moreover, every intermediary’s models must not only meet specified quality standards (such as taking into account the “nonlinear” price characteristics of options positions) but must also be approved by the regulator.

Another key step the bank regulators took related to depiction tools was to rely on a far wider set of risk metrics. In terms of market risk, for example, the only sophisticated risk metric the SEC refers to is VaR. With the bank regulators, market risk is gauged not only by a VaR-based measure, but also by, among other things, a stressed VaR-based measure.

297. See supra Subsection II.B.2.iii.
VaRs focus only on risks in relatively normal circumstances. Stress test results are far more useful in addressing what happens in extreme circumstances. The bank regulators have highly specific requirements for the semi-annual public disclosures not only of the results of company-run stress tests, but also of fulsome information on the characteristics of such tests. None of the SEC’s risk-related provisions require any regular disclosure of any stress test results.

Differences in the two systems as to how much deference the regulators pay to the modeling judgments of the intermediary relate to the “misunderstanding” roadblock. If the intermediary does not understand, or acts as if it does not understand, the objective reality, any depictions it offers are necessarily flawed.

Under the U.S. Basel 2.5 Rule, apart from needing to have their models approved by regulators, banks must offer ample evidence as to the quality of their models. The specifics of this appear to reflect bank regulators having considered weaknesses in the modeling development, validation, and adoption process associated with the JPMorgan Chase credit derivatives debacle. A bank must disclose “backtesting” results: a quantitative comparison of VaR-based estimates with actual gains or losses experienced, along with an analysis of important outliers. Moreover, the bank is required to describe the approaches it used for validating and evaluating the accuracy of internal models and modeling processes. The SEC does not yet any VaR models nor does it require any such comparisons or descriptions.

Bank regulators took similar pains to provide information to market participants with respect to the quality of the company-run stress testing results. As an example, when the company’s methodology relies on projections “[w]here judgment is an essential part,” the company must describe the rationale and magnitude of the judgment and the process it used to ensure the consistency of the projections with the circumstances associated with the severely adverse scenario.298

Such SEC implementation problems stem in part from its having been the pioneer in requiring public disclosure of market risk in 1997. Staff at the Federal Reserve had long been cognizant of certain problems with the SEC’s Market Risk Rule. In 2000, the staff conducted a case study of the usefulness of that rule in connection with the trading activities at ten financial institutions during the financial market turmoil in the third quarter of 1998. They reached two basic conclusions: the disclosures about market risk vary considerably among institutions, and there appeared to be little connection between the degree of risk suggested by the reported VaRs and their actual trading account

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performance. The staff suggested that the case study findings seemed in line with their interviews of a range of financial institutions, ratings agencies, and clearinghouses.

When the Federal Reserve’s market risk rule was adopted, there was industry recognition that new, useful data would be generated. On adoption of the U.S. Basel 2.5 Rule, Standard & Poor’s wrote that the more complete disclosures under the new framework “may lead [it] to revise [its] capital and earnings scores—which are part of [its] stand-alone credit assessments—for banks, which could result in downgrades in some cases.”

The SEC implementation problems also stem from inaction. Major changes in risk measurement science and practices have occurred since 1997, when the SEC adopted its Market Risk Rule, and, of course, even more since 1976, when it adopted its Bank Industry Guide. Major modeling and associated reporting failures have become manifest as well, not only at JPM’s Chief Investment Office specifically, but throughout the global financial crisis. These changes and the lessons to be gleaned from such failures helped inform the new bank regulator system. In December 2013, staff at the SEC briefly acknowledged the need to review its risk-related disclosures and Bank Industry Guide but offered little sense as to the timing, substance, or magnitude of any such review. The staff said it “could revisit” the SEC’s Market Risk Rule.

B. Modes of Information: The Potential and Limitations of the Transfer Mode

1. Overview

The descriptive mode involves a business entity observing, analyzing, and crafting a description of the pertinent aspects of that objective reality. While market participants will each interpret the entity’s description in their own way, that description—the entity’s version of objective reality—is the informational coin of the realm.

299. STUDY GRP. ON DISCLOSURE – FED. RESERVE SYS., IMPROVING PUBLIC DISCLOSURE IN BANKING (STAFF STUDY 173) 12 (March 2000).
300. Id. at 12-13. Not all observers are as skeptical of the SEC’s market risk disclosure efforts as the Federal Reserve staff was. See, e.g., Philippe Jorion, How Informative Are Value-at-Risk Disclosures?, 77 ACCT. REV. 911 (2002) (noting how the VaR disclosures are informative in predicting the variability of trading revenues).
303. Id. The SEC release adopting the market risk rule in 1997 had gone further, stating flatly that the rule would be reconsidered in view of subsequent developments in risk measurement. See supra Subsection II.B.2.iii.
The usefulness of the entity’s description depends on, among other things, the entity correctly understanding objective reality and the entity having depiction tools refined enough to describe that understanding effectively and fully. As we have seen, neither of these conditions may necessarily hold in the face of the complex realities created by financial innovation.

If financial innovation has created fundamental informational challenges, technological innovation in the form of revolutionary advances in web- and computer-related technologies may contribute to a solution. A new approach to information is now possible: the “transfer mode.”

As shown in Figure 2, the entity is no longer standing between the objective reality and market participants and is not engaged in the observe-analyze-describe process. Instead of having to rely on an intermediary depiction, the market participant can now download pure information reflective of objective reality, in its full terabyte richness. If market participants are incentivized and sophisticated enough to do so, they can bring their own analytical skills to bear on what may come close to a downloaded version of objective reality.

With this transfer mode, descriptions by the business entity are absent and, concomitantly, the limitations of the depiction tool and the impact of entity misunderstandings go away as well. Second, the information that market participants receive with the transfer mode, while less structured in form, can be richer and more granular. Third, with the public availability of this “big data,” “crowdsourcing” and other forms of cooperative behavior might sometimes result in the efficient generation of fresh insights about the bank’s objective reality.

Web- and computer-related technologies make possible the transmission, storage, and analysis of detailed information mimetic of the objective reality. Between 1996 and 2011, Internet backbone traffic jumped more than 2,000-fold.\(^{304}\) McKinsey recently estimated that the new data stored by enterprises exceeded 7 exabytes of data globally in 2010 and that new data stored by consumers around the world that year exceeded an additional 6 exabytes.\(^{305}\) The total of 13 exabytes is equivalent to filling more than 60,000 Libraries of Congress, and 15 of 17 industry sectors in the U.S. have more data stored per company than the Library of Congress.\(^{306}\)

Computer-related technologies can now process huge amounts of quantitative and qualitative data, and “crowdsourcing” as a method of collaborative analysis has become possible. Apple’s iPhone 5s, introduced in late 2013, has a chip 40 times faster than the chip in the original iPhone

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306. Id. at 3.
introduced six years earlier. With "big data" as raw material and powerful computers and sophisticated algorithms as tools to process both numerical and verbal information, market participants could potentially detect the subtleties of a banking entity's risk characteristics. With this mix of big data and computer-related and web-related developments, there might even exist the potential of "crowdsourcing" on the part of market participants.

2. Theoretical Limitations and Real World Evidence of Potential

Although the transfer mode avoids the problems with depiction tools and entity misunderstandings of the descriptive mode and can offer investors far more granular information, there are clearly some limitations. First, the task of observing and analyzing objective reality never goes away. It is transferred from the business entity obligated to undertake this difficult task, which has the necessary expertise, to market participants who have no such obligation, many of whom have neither sufficient incentive nor expertise to do so. Second, market participants will not be on a level playing field, except to the extent that market prices reflect the more informed purchases and sales by the more diligent. Third, the granularity of the information provided and the absence of business entity intermediation with the transfer mode can create the potential for the inadvertent disclosure of confidential or proprietary information.

While any use of the transfer mode must be sensitive to these concerns, these problems should not be exaggerated. In particular, the foregoing discussion assumes that market participants have to undertake the task of observing and analyzing substantial portions of the objective reality. Being able to undertake the far more modest task of merely detecting a few interesting patterns may be good enough.

In this respect, there is evidence to suggest that, with computer-related advances, the transfer mode has real potential in the financial regulatory context. In effect, financial regulators have already started using computers to observe and analyze pure information and have found interesting patterns. There is no reason that market participants cannot engage in a similar exercise. Some market participants are far better resourced and more incentivized. Consider just a few examples of this approach at the SEC since 2010:

Examinations. The SEC does not have the budget to examine all investment advisers. Relying on sophisticated data analytics, experts at the SEC's "think-tank," the Division of Risk, Strategy, and Financial Innovation (now called the Division of Economic and Risk Analysis) have worked with the


308. For an early overview of crowdsourcing, see, for example, Daren C. Brabham, Crowdsourcing as a Model for Problem Solving, 14 CONVERGENCE 75 (2008).
Office of Compliance, Inspections, and Examinations in the targeting of inspections of investment advisers.  

Review of Corporate Filings. The same Division developed, and the SEC is using, an innovative computerized tool that would automatically trigger alerts concerning suspicious accounting at publicly traded companies. The algorithm (now denominated the “Accounting Quality Model”) looks for such factors as a high proportion of off-balance-sheet transactions, frequent changes in auditor, and anomalous accrual patterns.

Enforcement. During fiscal year 2011, the SEC’s completely revamped system for handling the huge volume of tips, complaints, and referrals (TCR) that the SEC receives became fully operational. This new, highly-computerized system includes search and tracking capabilities and a comprehensive workflow system and can be accessed by authorized personnel across the SEC.

Market Integrity. Because of regulatory changes and technological advances, there has been a tremendous growth in trading volume in securities markets and in the dispersion of trading across multiple trading systems and derivatives markets. This makes it extremely difficult for the SEC to rely on traditional methods to investigate potential insider trading or manipulation and disruptions like the May 6, 2010 “flash crash.” In 2010, the SEC proposed a highly computerized and very expensive ($4 billion) “Consolidated Audit Trail” system to track transactions. This system was adopted in 2012.

MIDAS. In 2013, the SEC launched an internal database, known as the Market Information Data Analytics System (MIDAS), with data on almost every displayed order on national exchanges. The SEC also established a public website so that investors and other market participants can have access to such detailed transactions-level data from MIDAS. I would venture that members of the public may find interesting patterns that the SEC itself does not see. This would be especially so if the vaunted advantages of crowdsourcing occur.

3. Examples

With certain very simple business entities, such as certain exchange-traded funds (ETFs), a transfer mode is already in place with respect to their


311. Schapiro, April 2012 Testimony, supra note 309, at 54.

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assets. For instance, shares in the SPDR Gold Trust were created to correlate nearly 100 percent with the prices of gold bullion (less the Trust’s expenses). Listed on the New York Stock Exchange, and trading the same way that ordinary stocks do, an investor can buy or sell such shares continuously throughout the trading day, without the transaction costs associated with the purchase, storage, and insurance of physical gold.

The Trust indicates with whom it stores its gold and in which city the value is located. The Trust posts on its website a daily list of all of the gold bars held. As of November 14, 2013, the 1,244-page list set out the information on each of the 69,572 individual bars that the Trust held, including the bar number, refiner, bar gross weight, bar fine weight, and bar assay.313

This is not a description of reality. This is information directly mimetic of the objective reality of the gold sitting in the Trust custodian’s vaults. This is pure information.

With a business entity like a bank, relying on pure information of a similar sort would be a far different exercise. First, using a similarly straightforward approach to information with respect to the entire entity would be impractical and unwise. A bank, especially a major money center bank, has an extraordinary variety of assets (and liabilities) on its books. A highly customized OTC derivative contract is very different from a simple commodity like a bar of gold, and is not as easily listed. Moreover, there would be substantial costs related to the disclosure of proprietary data, both in terms of particular positions the banks may have and in terms of the informational foundation it could provide to rival banks regarding how the bank makes market valuation, pricing, and hedging decisions. Moreover, it is unclear how many investors would have either the resources or the incentives to actually make use of the massive amounts of information provided.

Second, and more important, abandoning the descriptive mode would leave investors bereft of the benefits of the bank’s efforts to analyze and distill objective reality and incorporate the resulting insights into the bank’s description. The management of banks have expertise about the financial world in general, and their institutions in particular, and investors are counting on that.

Rather than abandoning the descriptive mode, I envision supplementing it with the transfer and hybrid modes. The hybrid mode is more likely to be fruitful than the transfer mode in the major bank context.

However, I next offer two possible examples in which the transfer mode could be usefully deployed. The first example relates to the SEC’s requirements for the public disclosure of “material contracts.” The second example relates to the massive amounts of entity- and transaction-level data routinely provided to a full spectrum of governmental bodies. It should be emphasized that, in both

examples, reducing uncertainties as to when information will be kept confidential as an administrative matter or pursuant to pertinent FOIA exemptions would be one of the steps necessary to realize the full informational potential of the transfer mode.

i. “Material Contracts” in the SEC Universe

Throughout this Article, I have said that the SEC has largely relied on the descriptive mode since its creation. There is an exception, one that had always been a legal and administrative backwater. Therein lies an opportunity.

The SEC’s Form 10-K (annual report) and Form 10-Q (quarterly report) require that certain exhibits be filed with the SEC. A corresponding requirement applies with respect to certain Securities Act registration statements. Among the required exhibits are all of the company’s “material contracts.” “Material contracts,” as defined, include all contracts “not made in the ordinary course of business” which are material to the company.

If market participants were to have the contracts filed with the SEC available to them, in strict technical terms, they would not merely be receiving pure information—i.e., information mimetic of objective reality. They would be receiving part of objective reality itself: the contracts to which the company is bound constitute a core part of company’s objective reality. By reading the contracts themselves, market participants need not rely on any entity’s descriptions of the terms of the contracts.

This pure information can be extremely useful to market participants. Assume, for instance, a bank is party to a set of important transactions involving highly customized derivatives with complex contingent payoff structures. If the contracts are material enough to be filed with the SEC and confidentiality and proprietary concerns are not at issue, market participants can read the contracts and try to map out those payoff structures. Mere descriptions of the payoff structures would not yield this kind of information.

The gap between the description of the payoff structure of a complex financial product and the objective reality of that structure can be huge. In the asset-backed securities context, it has proven extremely difficult for investors to map the descriptions of the cash flows offered by the issuer in prospectuses to the cash flows that the investors would encounter over the life of the investment.

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314. Form 10-K, SEC 1673 (01-12), at Items 15(a)(3) and 15(b); Form 10-Q, SEC 1296 (01-12), at Item 6; Form 8-K, SEC 873 (01-12), at Items 1.01 and 9.01(d).
315. See, e.g., Form S-1, SEC 870 (02-08), at Item 16.
316. See Regulation S-K, 17 C.F.R. § 229.601 Exhibit Table (2014) (showing all the Securities Act and Exchange Act forms requiring the submission of material contracts).
317. Id. § 229.601(b)(10).
318. See Hu, Too Complex to Depict?, supra note 18, at 1640-41 (showing the gaps between the prospectus and both the governing contractual provisions and the computer program actually directing the cash flows). There could also be other gaps, including gaps between the governing
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The informational value of material contracts is illustrated by a controversy involving the rescue of AIG during the global financial crisis. As will be discussed in Subsection V.E.1, the stakes were so high that a dispute over whether a particular contract should be fully disclosed triggered Congressional hearings at which the Treasury Secretary and the prior Treasury Secretary testified and pursuant to which the New York Fed turned over 250,000 pages of documents. This was followed by a scathing Congressional report accusing the Federal Reserve of a cover-up.

There are at least two problems limiting the potential of this approach, one mechanical and the other more fundamental. The mechanical problem is that locating a specific exhibit can be extremely difficult for registrants and investors alike. The changes to the filing procedures recommended by a 1996 SEC task force were not implemented. In December 2013, the SEC staff acknowledged that “some exhibit filings can be difficult to locate on the SEC’s EDGAR system” and stated its belief that it would be beneficial to review how exhibits are made publicly available on the SEC’s website.

The more fundamental problem relates to uncertainties as to the SEC’s disposition of confidential treatment requests. I will leave aside the longstanding, familiar issues of ambiguity as to the statutory FOIA exemptions themselves.

According to the SEC, corporations are sometimes concerned that by filing material contracts, such sensitive information as “pricing terms, technical specifications, and milestone payments” would “adversely affect the company’s business and financial condition.” To address this potential hardship (as well as the hardship that would likewise flow from descriptions involving sensitive information), the SEC has a system that allows companies to request confidential treatment of information filed under the Securities Act and the Exchange Act.

Specifically, Rule 406 under the Securities Act and Rule 24b-2 under the Exchange Act set forth the exclusive means for obtaining confidential treatment of information that would be exempt from disclosure under FOIA. Because FOIA requires all federal agencies to make specified information available to the public, the material contracts filed as exhibits would be available for all to see absent a pertinent FOIA exemption. As discussed in Subsection III.C.1, most applicants seeking confidential treatment from the SEC rely on the

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319. SEC. & EXCH. COMM’N, REPORT OF THE TASK FORCE ON DISCLOSURE SIMPLIFICATION § VIII(D) (March 1996).
320. DECEMBER 2013 SEC STAFF REPORT, supra note 302, at 102
321. Id.
exemption for “trade secrets and commercial or financial information obtained from a person and privileged or confidential,” the “(b)(4)” exemption.\textsuperscript{324}

As noted in Subsection II.C.1, information that is either “material” or, even if not material, is required by an applicable SEC requirement, is not generally appropriate for confidential treatment. In “Staff Legal Bulletin No. 1,” the staff of the Division of Corporation Finance stated as follows:

\begin{quote}
[C]onfidential treatment is generally not appropriate for information that is material to investors. Depending on the facts and circumstances, examples of material information could include the name of a key supplier, material contingency clauses, indemnification clause, anti-assignability clause, take-or-pay clauses, and financial covenants in material financing or credit agreements. Materiality must be analyzed in the context of the issuer’s business, financial condition and financial results. Where there is any question about the materiality of the information, the application [for confidential treatment] must address the issue and provide factual support for the issuer’s belief that the information is not material to investors.\textsuperscript{325}
\end{quote}

There appears to be real uncertainty as to how any particular confidential treatment request will turn out. First, this “Staff Legal Bulletin No. 1” does not carry the status of law. The bulletin itself states that it “is not a rule, regulation or statement” of the SEC and that the SEC “has neither approved nor disapproved its content.”\textsuperscript{326}

Second, the guide does not have the specificity and tightness one would normally encounter in a formal rule. The bulletin uses terms like “generally not appropriate” and empty phrases like the need to consider “facts and circumstances” and the “issuer’s business, financial condition and financial results.”\textsuperscript{327}

In 2010, the Director of the SEC’s Division of Corporation Finance characterized the bulletin as “not represent[ing] the substantive requirements” that a corporation must meet in order to request confidential treatment, but rejected a new rulemaking initiative.\textsuperscript{328} The bulletin was helpful as “public guidance” that would “assist the public in understanding how the staff interprets the Freedom of Information Act and [SEC] rules that apply to a request for confidential treatment.”\textsuperscript{329}

Guidance could flow from dissecting actual SEC confidential treatment decisions. However, at least as of 2010, this would not have been an especially fruitful exercise. According to a study by the SEC’s Office of Inspector

\begin{footnotes}
\item 324. \textit{Staff Legal Bulletin, supra} note 322, at § II.A.
\item 325. \textit{Id.} at § II.B.
\item 326. \textit{Id.} at “Supplementary Information.”
\item 327. \textit{Id.}
\item 329. \textit{Id.}
\end{footnotes}
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General, over 90% of confidential treatment requests were not subject to a thorough review and examination for compliance with all aspects of the confidential treatment request rules. The majority of confidential treatment requests received were seeking redactions of provisions of material contracts.

A clearer and more definitive SEC position on the confidential treatment of material contracts, along with vigorous and careful enforcement of the position, are needed. This would be worthwhile even absent any statutory changes to clarify existing FOIA exemptions. Depending on the particulars of the position, material contracts can provide valuable information to market participants without perceptible harm to the banks.

ii. Entity- and Transactions-Level Data Provided or Available to Governmental Bodies

Massive amounts of data relating to banks and individual financial transactions are available to a spectrum of governmental bodies. In particular, bank regulators and the newly-created Financial Stability Oversight Council routinely receive or have access to massive amounts of information from bank holding companies. At the financial transactions level, the SEC is deploying sophisticated computer-based approaches to identify anomalous patterns from mounds of “pure information” on securities trades. And a new generation of “pure information” directly pertinent to derivatives, including credit derivatives, is soon to become available. The Dodd-Frank Act now mandates that the vast bulk of OTC derivatives transactions become subject to clearinghouse arrangements and provides that the SEC and the Commodity Futures Trading Commission (CFTC) are to oversee such arrangements.

On the one hand, many of the reports provided by the bank holding companies have pure information that could potentially be helpful to market participants in assessing the companies’ risk characteristics. Similarly, pure information in the form of transactions-level data, especially in relation to derivatives, could be helpful to market participants in assessing the trading-related risk profiles of banks. On the other hand, much of the pure information may be confidential, proprietary, or otherwise not appropriate for public disclosure.

Existing uncertainties as to when such pure information would be available to the public make difficult the full deployment of a transfer mode strategy in these contexts. Clarification of ambiguities flowing from administrative procedures and the underlying FOIA statutory exemptions could be helpful both to those seeking pure information as well as to banks seeking to keep information confidential for legitimate reasons.

330. Id.
331. Id. at 7.
332. See Subsection V.B.2.
Consider, for instance, administrative issues pertaining to the reports provided by bank holding companies to the Federal Reserve. The Federal Reserve set out a listing of 20 periodic reports that bank holding companies may have to file. The forms vary widely in terms of their designated availability to investors and other market participants. Some are confidential, some are public, some are public upon request, some are partially confidential, and some are public but subject to confidential treatment requests.

The contours of what is publicly available can be unclear even when considered in the context of any single report. Consider, for instance, the confidentiality notice set out in the instructions for preparation of Form FR Y-9C, Consolidated Financial Statements for Holding Companies. The instructions state that the completed version of the report “generally is available to the public” upon request, with specified exceptions. However, the bank holding company may request confidential treatment for the form if it is of the opinion that disclosure of specific commercial or financial information in the report “would likely result in substantial harm to its competitive position” or would result in “unwarranted invasion of personal privacy.” Even a Federal Reserve determination that certain information is confidential does not put the matter to rest. The Federal Reserve may subsequently decide to release the


334. The instruction forms for the each of the 20 reports contained in the listing as well as for two additional reports (FR Y-15 and FR Y-20) are available at:
FFIEC 101: http://www.ffiec.gov/pdf/FFIEC_forms/FFIEC101_201306_i.pdf
FFIEC 009: http://www.ffiec.gov/PDF/FFIEC_forms/FFIEC009_201103_i.pdf
FFIEC 009a: http://www.ffiec.gov/pdf/FFIEC_forms/FFIEC009a_200906_i.pdf


336. Id.

337. Id.
information if the Board of Governors determines that the disclosure “is in the public interest.”

The Financial Stability Oversight Council (FSOC) has access to substantially more information than the Federal Reserve does. Created under the Dodd-Frank Act, FSOC’s mission is to identify risks to financial stability from the activities of bank holding companies, promoting market discipline, and responding to emerging threats to stability. Member agencies include the Federal Reserve and other bank regulators (the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency), the SEC and the CFTC, and the Treasury Department.

FSOC’s current listing of data collected solely from FSOC agencies consists of over 300 different forms and, using what appears to be 3-point font, runs 21 pages. In addition, FSOC is authorized to gather information not only from all of its member agencies but also from other federal and state financial regulators.

The Office of Financial Research (OFR), also created pursuant to the Dodd-Frank Act, has a mandate to assess risks to financial stability and to monitor, investigate, and report to FSOC and Congress on changes to those risks. In its most recent annual report, it stated its data goals as follows:

Comprehensive, timely, and granular data are essential to the Office’s ability to conduct the financial stability monitoring, analysis, and research described in this report. To ensure sufficient data are available, the Office pursues its agenda through the following process: (1) identify the data needed for financial stability analysis; (2) analyze existing and available data, and determine gaps, and (3) identify the cause of the gaps, prioritize the needs and feasibility of collecting the data, and fill the gaps.

In other words, the basic thrust seems to be that OFR is interested in all data that could affect financial stability. The OFR has direct authority to seek this information from financial institutions. It is not entirely clear which economic or financial data are not subject to OFR analysis.

338. Id.
340. Id. at § 111(b)(1).
343. Id.
344. Id.
345. Dodd Frank Wall Street Reform and Consumer Protection Act §112(d)(1).
With OFR, as with the SEC and the Federal Reserve, there are serious ambiguity and predictability issues as to which data, including data provided by banks, can be kept confidential and which must be made publicly available. These issues flow in part from the specific statutory language in the Dodd-Frank Act governing the confidentiality of information at the OFR as well as the overarching problems associated with FOIA exemptions. The lack of predictability stems as well from policy decisions: FSOC’s release adopting rules implementing FOIA states that:

Even though a FOIA exemption set forth in 5 U.S.C. 552(b) may apply to the record requested, [FSOC] may, if not precluded by law, elect under the circumstances of that request not to apply the exemption. The fact that an exemption is not applied by the [FSOC] in response to a particular request shall have no precedential significance in processing other requests. This policy does not create any right enforceable in court.

In short, massive amounts of pure information at both the bank level and at the transaction level are now potentially available to market participants. The realization of the full promise of the transfer mode, while fully insulating information that should not be publicly disclosed, depends on a systematic reconsideration of existing administrative practices and the underlying statutory regime.

C. Modes of Information: The Potential and Limitations of the Hybrid Mode

1. Overview

The “hybrid mode” draws on elements of both the descriptive mode and the transfer mode. With the hybrid mode, in contrast to the descriptive mode but like the transfer mode, the business entity does not author a description of objective reality for which the entity is responsible. In contrast to the transfer mode but like the descriptive mode, there is no transmittal of pure information to market participants. The product of the hybrid mode might be termed “moderately pure” information.

Figure 3 illustrates one example involving the hybrid mode. Here, we can re-characterize the essence of Figure 3 in a way that is more general than in Section I.B. Market participants are offered the quantitative results flowing from the application of a completely mechanical, fully-observable, set of rules prescribed by a regulator or other outside body for the “processing” of

346. As to these OFR-related issues, see generally Annette L. Nazareth & Margaret E. Tahyar, Transparency and Confidentiality in the Post Financial Crisis World: Where to Strike the Balance?, 1 HARV. BUS. L. REV. 146 (2011).

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Objective reality. This set of rules—this "machine"—is solely the responsibility of the outside body. The business entity is not involved in the design of the machine and thus not responsible for the efficacy of the machine. The business entity's involvement is essentially limited to the data corresponding to objective reality that needs to be input into the machine. Because the machine is entirely mechanical and all its components are publicly observable, market participants can, if they wish, attempt to "reverse engineer" the output to reach what are at least muffled versions of objective reality.

No descriptions are involved. Thus, the true and functional misunderstandings of objective reality on the part of the business entity cannot taint the information reaching the market participants. And this example of the hybrid mode is less demanding of resources and expertise on the part of market participants than the transfer mode. The machine produces numbers that, if the machine is to be believed, capture some pertinent aspects of the objective reality in easily digestible form. Moreover, the confidential and proprietary information concerns omnipresent with the transfer mode are reduced. The primary limitations of this example of the hybrid mode flow from the efficacy of the machines themselves. The regulator or other outside body must design machines that generate information about objective reality that is accurate enough for market participants to rely on.

2. Examples and New Developments

In Too Complex to Depict?, I discussed two examples of the approach to information that I am calling the "hybrid mode" in this Article. The first example involves generating moderately pure information about a bank's assets and exposures that would not otherwise be publicly available. This would, at least indirectly, help investors protect themselves from possible problems with a bank’s models. The second example involves generating moderately pure information about the characteristics and quality of the models a bank uses—without the bank having even to describe these models, much less share them with investors.

The core concepts underlying the two examples are mirror images of each other. The first example involves using a single set of models industry-wide for the particular assets of each bank. This I called the “common bank models” approach. The second example involves using a single set of hypothetical assets industry-wide to serve as the inputs for the specific models actually used by each bank. This I called the “common bank assets” approach. 348

348. As noted in Too Complex to Depict?, in a Financial Times op-ed published a few months earlier, Vikram Pandit, then the CEO of Citicorp, advanced the idea of a “benchmark portfolio” for the purpose of helping the public better compare the capital ratios reported by banks, as distinguished from better informing the public on the nature of the bank’s models. See Hu, Too Complex to Depict?, supra note 18, at 1664; Vikram Pandit, Apples v Apples—A New Way to Measure Risk, FIN. TIMES, Jan. 10, 2012, http://www.ft.com/intl/cms/s/0/90bb724a-3afc-11e1-b7ba-
I will here offer a very brief outline both of these examples, adding some new developments, and refer the reader to the discussion in the 2012 work.\footnote{See Hu, Too Complex to Depict?, supra note 18, at 1658-63 (common bank models approach), 1663-65 (common bank assets approach).}

The common bank models approach is intended to lead to moderately pure information about banks’ assets and risk exposure. It involves modifying existing government programs. As discussed in Subsection III.C.2, one aspect of the Federal Reserve’s CCAR program has been bank supervisory stress tests. With bank supervisory stress tests, the models to be used are largely developed and used by the Federal Reserve, not the individual banks. Highly granular information provided by the bank on its specific trading and derivatives positions, private equity holdings, and so on is put into the Federal Reserve’s models. The Federal Reserve’s models would then estimate how that bank would fare under each stress test scenario and confirm whether the bank meets various regulatory minimum capital levels.

The public sees the capital adequacy results flowing from the Federal Reserve’s models, but does not see the models themselves. The Federal Reserve was concerned that giving access to the models would allow banks to game the system and perhaps deter banks from developing their own models.

This is moderately pure information. The investor gets a sense about the objective reality without a bank-generated description and thus receives information that is free of bank misunderstandings of objective reality. And it is not fully pure information either: the investor receives a models-based representation of objective reality, but that representation is based on the Federal Reserve’s models, not the bank’s. The investor is subject to the possibility of mistakes on the part of the Federal Reserve.\footnote{Such mistakes have occurred. See id. at 1661 (describing errors in the 2012 stress tests for Citigroup).}

I suggested that the usefulness of this moderately pure information could be improved by, among other things, providing the Federal Reserve’s models to investors and that both the benefits and costs of this should be carefully studied.\footnote{Id. at 1661-63.}

Two promising developments related to the common bank models approach have occurred subsequent to the publication of Too Complex to Depict? First, the Federal Reserve now appears to be willing to be somewhat

\begin{footnotesize}
\item[349] See Hu, Too Complex to Depict?, supra note 18, at 1658-63 (common bank models approach), 1663-65 (common bank assets approach).
\item[350] Such mistakes have occurred. See id. at 1661 (describing errors in the 2012 stress tests for Citigroup).
\item[351] Id. at 1661-63.
\end{footnotesize}
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more open about its models. In the October 2012 adopting release for the Dodd-Frank Act’s stress tests, the Federal Reserve noted that it had received numerous comments requesting greater clarity about its models. The Federal Reserve stated that it “is currently considering how to provide more transparency . . . while not reducing incentives on the part of Covered Companies to develop better internal stress test models . . . and to consider the results of such models in their capital planning process.”352 In addition, “[a]t a minimum, the [Board of Governors of the Federal Reserve] plans to publish an overview of its stress testing methodologies each year.”353 As of November 1, 2013, when the Federal Reserve issued the summary instructions for the CCAR 2014, there was indication that that the Federal Reserve would be releasing the models themselves.354

Second, results from company-run stress tests must now be publicly disclosed by major financial institutions. As discussed in Subsection III.C.2, such disclosures must be accompanied by information on the models used by the company to generate these numbers. Market participants can now compare the results of company-run stress tests under a bank-specified “severely adverse” scenario with the results from supervisory stress tests in a Federal Reserve-specified “severely adverse” scenario. Comparisons of the two sets of numbers in broadly similar hypothetical scenarios could allow sophisticated market participants to make inferences as to the true characteristics of each bank’s assets. Of course, here too, full disclosure of the Federal Reserve’s models would be helpful to market participants in their analysis.

The common bank assets approach leads to hybrid information regarding the bank’s risk models. Every bank is mandated to assume a single hypothetical portfolio of assets. Each bank, however, applies the actual models it uses to that common portfolio, and generates VaR calculations and stress test numbers. Each bank would thereby be giving a sense of how their models behave in a variety of contexts. The regular reporting of such VaR and stress test numbers should help investors assess the quality of the bank’s models. Moreover, cross-bank comparisons of bank models are possible: the VaR and stress test numbers generated will differ from bank to bank, and such differences would allow for inferences about each bank’s models. Behaviorally, this may create some incentives for banks to converge in terms of modeling since having an “outlier” model may attract market participant skepticism. On the other hand, incentives can run the other way as well: having “outlier” models may signal to some market participants that the bank is ahead of the curve in modeling.

This is moderately pure information. The bank is not giving a description in the normal sense. That is, with the common bank assets approach, the numbers generated will not gauge the true exposure of the bank: after all, the

352. Id.
353. Id.
benchmark portfolio is completely hypothetical. However, the numbers will
give investors insights into the bank’s models, something that may allow them
to detect the effects of true and functional misunderstandings of the
institution’s descriptions.

In terms of new developments, perhaps the most interesting is the fact that
international bank regulators have engaged in an exercise to determine how
variable numbers generated by various models and stress tests would be with a
common portfolio of assets. A total of 15 internationally active banks with
significant trading assets were asked to use a hypothetical test portfolio to see
the level of variability of risk-weighted assets based on the market risk
framework. The regulators found that the test portfolio exercise “provided clear
evidence that differences in modeling choices can be very important drivers of
variability across banks.”

D. Modes of Information: Portfolio Diversification and “Informational
Neutrality” Across Modes

Each of the three modes of information, which together help define a
spectrum of possible types of information, has virtues and faults. But the
virtues and faults of each mode are different. This lack of “correlation” among
the three modes calls to mind the advantages of portfolio diversification in
making investments. I believe that the path forward lies in an eclectic,
comprehensive conception of “information,” one that involves the triangulation
of objective reality based on a diversified portfolio of informational sources
using all three modes and thereby taking advantage of the full spectrum.

Thus far regulators have largely staked their public disclosure
requirements in the descriptive mode. This is so especially at the SEC, where
the intermediary depictions play a near-exclusive role in conveying information
to market participants. Bank regulators have, in effect, a somewhat more
diversified portfolio. The Federal Reserve’s efforts with respect to stress tests,
both supervisory and company-run, allow market participants to obtain what
comes within the ballpark of the moderately pure information generated by a
common bank models approach. The Federal Reserve’s efforts with respect to
market risk, if broadly conceived, arguably come within the ballpark of
moderately pure information as well. That is, the necessity of regulator
approval of models a bank uses, the detailed specification of the types of
market risk metrics that a company must provide, and tight constraints on how
those metrics are calculated all impose a high degree of commonality as to
bank modeling and reporting. Moreover, through studying the impact of models

355. Regulatory Consistency Assessment Programme (RCAP): Analysis of Risk-
Weighted Assets for Market Risk, BASEL COMM. ON BANKING SUPERVISION 10 (Jan. 2013, rev. Feb
356. See, e.g., RICHARD A. BREALEY, STEWART C. MYERS & FRANKLIN ALLEN,
PRINCIPLES OF CORPORATE FINANCE 168-70 (10th ed. 2011) (discussing how portfolio diversification
reduces risk in securities investment context).
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on hypothetical assets, bank regulators appear to be nibbling at the edges of a common bank assets approach.

There needs to be a studied effort to adopt properly diversified portfolio of modes of information and to address roadblocks. This Article has suggested that the transfer mode holds genuine promise in meeting the informational challenges posed by major banks. As we have seen, bank regulators, the SEC, FSOC, OFR and other governmental bodies collectively have ready access to stunning amounts of pure information related to banks on a regular basis. It is essential that the full potential of pure information be realized from the standpoint of market participants, while ensuring that banks can count on their confidential or proprietary information being kept from public view.

Ambiguities in the pertinent statutes, including the FOIA exemptions and the Dodd-Frank provisions relating to confidentiality of information at OFR, constitute one major roadblock. But the prospects for statutory changes are dim, at least in the short term.

Another roadblock, more immediately surmountable, is on the administrative side. All three modes of information deserve equal consideration for the informational portfolio, even if regulators continue to invest most heavily in the descriptive mode. “Informational neutrality” across modes of information in this sense of equal consideration is needed.

Currently, this type of modal informational neutrality is far from a reality. In the context of public disclosure, the transfer mode appears to have been an administrative backwater. The SEC’s “Staff Legal Bulletin” as to confidential treatment requests, a critical element to understanding access to transfer mode information (such as material contracts), has no legal effect and departs from the specificity and definitiveness that would be seen in a formal rule. It would be difficult to imagine that a similarly critical element to understanding what would be required in SEC intermediary depictions would be handled in the same informal way. On the Federal Reserve side, the contrast could not be more dramatic between the specificity of descriptive mode in its market risk and stress testing public disclosure rules and, for instance, the unpredictability flowing from the statements relating to public access set out in the instructions of Form Y-9C.

E. Parallel Universes

1. Unsustainability: Duplication and the Impact of Conflicting Regulatory Ends

Two sets of regulators with widely divergent ends now explicitly have full authority over the same informational territory as a formal matter. As a

357. See supra Subsection V.B.3.i.
358. See supra Subsection V.B.3.ii.
practical matter, they are each exercising that authority. Both disclosure systems cover, for instance, the quantitative aspects of market risk: the SEC's Market Risk Rule and the U.S. Basel 2.5 Rule. The bank regulator universe addresses bank performance during times of stressed financial conditions directly through public disclosure requirements for company-run stress tests, while the SEC universe arguably addresses the issue in a more diffuse, qualitative way through MD&A requirements.

When bank regulators put into effect the public disclosure requirements associated with the Basel III capital rules and the new Basel liquidity mandates, the bank regulator universe will cover market risk, performance under stressed conditions, credit risk, and liquidity risk—i.e., all the major risks that banks face. The SEC's MD&A already covers all these matters as well, albeit indirectly and with a more qualitative focus. But the MD&A is increasingly being used to mandate the disclosure of quantitative information. Also, the extraordinary resource demands associated with implementing the Dodd-Frank Act have diminished. SEC staff has recently indicated that there is a possibility that it would revisit the Bank Industry Guide, the Market Risk Rule, and risk-related disclosures generally.359

One immediate question is whether this duality is sustainable. Conflicts between the two universes are least likely where their disclosure requirements are complementary. Thus, if an SEC requirement as to a particular topic mandates qualitative information while the bank regulator mandates quantitative information, different niches are involved. The SEC's key risk-related requirement, the MD&A, has traditionally had a qualitative focus. The bank regulator disclosure requirements have tended to have a quantitative focus. As a result, roughly speaking, the two universes occupy different niches.

Where, however, both universes cover the same topic and require the same type of information (e.g. qualitative or quantitative), the analysis is different. Consider, for instance, the fact that both the SEC Market Risk Rule and the U.S. Basel 2.5 Rule require VaR-related reporting. The bank regulator version requires far more VaR and related market risk information than does the SEC version. This is not a conflict: the bank regulator universe in effect "wins" because banks will provide the more complete public disclosure the bank regulator universe requires. Indeed, as a general matter, if both universes are in a single niche, whichever universe requires more complete disclosure will seemingly always "win"—absent pressure to back off from the "losing" universe.

The bank would be the loser: presenting information of the same type on the same subject matter under two alternate regimes will be costly, and may not necessarily provide any value to market participants. Indeed, this consideration helped cause the SEC to begin the "integration" of the Securities Act and the

359. DECEMBER 2013 SEC STAFF REPORT, supra note 302, at 99, 103.
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Exchange Act disclosure systems in 1977, when it adopted Regulation S-K as a single standard set of instructions for disclosure.360

But this single niche discussion assumes that the regulatory ends of both universes are congruent. If they are not, even greater conflicts between regulators may arise. Assume that the SEC decides to promulgate a general rule that all business entities must disclose “X” in order to protect investors and promote market efficiency, but the Federal Reserve believes that for major banks to do so would jeopardize both the stability of individual banks and the overall financial system.

The existing public disclosure rules of the two systems reflect this possible conflict. As discussed in Subsection II.C.1, the general quantum of information required in the SEC system differs materially from that required in the bank regulator system. That is, “materiality” in the SEC system is focused more on the needs of investors and market efficiency than is the case in the bank regulator system. The way in which confidential treatment requests are handled by bank regulators also reflects more deference to the interests of banks.361

There are at least two incidents that suggest that the conflicts between the parallel universes could actually occur. First, the Federal Reserve has already leaned on the SEC to take actions that are inconsistent with the SEC’s interests in market efficiency and more consistent with the Federal Reserve’s interests in financial stability. On September 18, 2008, at the height of the global financial crisis, the SEC issued an emergency order banning all short sales in the securities of “financial” firms.362 This was extraordinary: the last time short selling was banned in the United States was in 1931—before the SEC was even created. And it was inconsistent with both the SEC’s modern trend of relaxing short-selling limitations and its longstanding belief that markets should generally be left to set prices. Shortly before he left the SEC, then-Chairman Christopher Cox said that the ban was the “biggest mistake” of his tenure. He stated that he had been under intense pressure from Federal Reserve Chairman Ben Bernanke and Treasury Secretary Hank Paulson to take this action, and did so only reluctantly.363

Second, prior to the emergence of the bank regulator system, an important incident involving the impact of conflicting regulatory ends on public disclosure occurred in November 2008, about two months after the Federal Reserve bailed out AIG at the height of the global financial crisis. Because the incident is directly concerned with public disclosure and because it also

360. See COFFEE & SALE, supra note 51, at 140.
361. See Subsection III.C.1.
362. See Hu, EMH and the Law, supra note 1, at 205; Hu, Too Complex to Depict?, supra note 18, at 1688-1701.
happens to illustrate the potential value of the transfer mode, the discussion of this example will be more detailed.

On November 28, 2008, AIG entered into a contract involving Maiden Lane III (ML3) (an entity created and majority-owned by the Federal Reserve Bank of New York) and was required to file this contract in a Form 8-K with the SEC within four business days. AIG sent a draft version of the Form 8-K to the New York Fed’s counsel, including as exhibits copies of agreements that it signed with the New York Fed and ML3. The agreement between AIG and ML3 was particularly sensitive because “Schedule A” to the agreement disclosed, among other things, the names of all of AIG’s counterparties and the prices at which ML3 was purchasing assets—what the House Oversight Committee characterized as a “backdoor” bailout of AIG’s counterparties. In the Form 8-K that AIG actually filed on December 2 (as well as one filed on December 24), the contracts were included as exhibits, but Schedule A was omitted.

At the end of 2008, the SEC wrote to the CEO of AIG saying that AIG needed to provide Schedule A for the key agreement in its December 2 and 24 filings, stating, “You are required to file the entire agreement, including all exhibits, schedules, appendices and any document which is incorporated in the agreement.” On January 14, 2009, AIG submitted Schedule A but redacted the table listing the names of banks and other bank-specific information. At the same time, AIG sought confidential treatment for the redacted portions.

AIG apparently used the word “redacted” more than 1,000 times in its regulatory filings. Pressure built in Congress for the release of the names of the AIG counterparties. On January 19, the New York Fed, in its “Statement Regarding Public Disclosures of AIG Concerning Maiden Lane III LLC,” stated that it was that day providing to the House Oversight Committee over 250,000 pages of documents that relate to, among other things, ML3 and the public disclosures made by AIG in December 2008. On January 27, the House Oversight Committee held a hearing regarding the bailout of AIG at


366. Id. at 3, 6.


368. Id.

369. HOUSE OVERSIGHT REPORT, supra note 365, at 7.

370. Moore, Timeline, supra note 367.

which, among others, Treasury Secretary Timothy Geithner, former Treasury Secretary Henry Paulson, and Thomas Baxter, the General Counsel of the New York Fed, testified.\textsuperscript{372} In his testimony, Baxter denied that the New York Fed sought to prevent AIG from disclosing certain information, but stated that information such as the identities of AIG counterparties would have had the “effect of harming the taxpayer’s investment in AIG by reducing the public’s interest in doing business with AIG.”\textsuperscript{373}

On March 16, 2009, AIG amended its December 2 and December 24, 2008, 8-K filings to include a list of derivative transactions counterparties but redacted other information. Each of the Schedule A documents included the word “redacted” more than 800 times, and AIG filed an amended confidential treatment request.\textsuperscript{374} In May of 2009, the SEC granted AIG’s amended treatment request.\textsuperscript{375}

On January 25, 2010, the House Oversight Committee issued a highly granular report whose title reflects its claims: \textit{Public Disclosure As a Last Resort: How the Federal Reserve Fought to Cover Up the Details of the AIG Counterparties Bailout From the American People}.\textsuperscript{376}

I need not, and do not, take a position on the validity of the House Oversight Committee’s claims as to what the Federal Reserve did or did not do to influence AIG with respect to its Form 8-K filings. And I certainly do not criticize the SEC in any way with respect to its key December 2008 decision to refuse to accept AIG’s omission of the Schedule A.

Two points about this AIG disclosure controversy can be made within these constraints. First, material contracts—a key example of “pure information” already possible in the SEC universe—can be important sources of clean and rich data.

Second, the divergent regulatory ends of the SEC and the Federal Reserve appear to explain their contrasting views on confidentiality. The SEC’s December action insisting that AIG provide the Schedule A unless a confidential treatment request was submitted and approved reflects its disclosure philosophy and its longstanding focus on investor protection and market efficiency. Whether or not it actually influenced or pressured AIG not to provide Schedule A, the Federal Reserve clearly preferred non-disclosure and rooted this in its contrasting focus on the soundness of financial institutions.

\textsuperscript{373} Baxter Testimony, supra note 364.
\textsuperscript{374} HOUSE OVERSIGHT REPORT, supra note 365, at 8; Moore, Timeline, supra note 367.
\textsuperscript{375} HOUSE OVERSIGHT REPORT, supra note 365, at 9.
\textsuperscript{376} See id.
In short, the existence of two independently operating disclosure systems that occupy the same informational turf itself causes problems, most particularly that of duplication and waste. These problems might be manageable.

What makes the current morphology of public information ultimately unsustainable is not that there are parallel universes, but that these universes have divergent regulatory ends. The traditional differences between the regulatory ends of the SEC and those of bank regulators had already resulted in sharp conflict prior to the emergence of the bank regulator disclosure system.

2. The SEC’s Role, Boundary-Setting and “Informational Neutrality” Across Parallel Universes

The SEC’s long-term role with respect to the key disclosures of major banks is now far from clear. The SEC has not taken a serious look at its risk-related disclosures for many years. In the areas of market risk and stress-testing, the new bank regulator disclosure system is strikingly sophisticated and granular. The new system is generating far more useful information than any corresponding requirements on the part of the SEC. One can expect similar sophistication and granularity as the bank regulator disclosure system expands over the next several years to also cover credit risk, liquidity risk, and other major risk-related areas.

If this longstanding pattern of SEC inaction with respect to risk-related matters continues, the prospect looms that the bank regulator disclosure system will be the primary source of mandatory information as to risk characteristics of major banks. If this scenario comes to pass, the ends and means of the bank regulator system would, in effect, come to dominate public disclosure in this context.

Bank and system stability, not investor protection and market efficiency, would take pride of place. Information that would be considered “material” under traditional understandings may not be similarly considered under the bank regulator’s standards. Some traditional securities lawyers might view this as effectively adding bank well-being and financial stability exceptions to the general requirement that all material information be disclosed.

On the enforcement side, it is unlikely that private causes of action will be allowed with respect to violations of bank regulator disclosure rules. Independent of the merits of government-only enforcement, there is the prospect of bizarre enforcement regimes. As to SEC disclosure rules applicable to banks, class actions may be possible, but as to bank regulator disclosure rules, class actions would not be.

377. See supra Subsection III.C.1.
378. See supra Subsection II.B.1 (discussing Halliburton).
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In other words, an alien form of public disclosure system would effectively be in place for major banks. At a minimum, a perception of industry favoritism could arise. Would it be fair for the banking industry alone to be entitled to a different materiality standard and to be free from the usual threat of class actions?

If, on the other hand, the SEC does finally look seriously at risk-related disclosures and decides to vigorously promote new rules that it believes to be essential to investor protection and market efficiency, direct confrontations with bank regulators may ensue. At best, there will be incoherence in terms of the overall morphology of public information if the two regulatory systems simultaneously advance inconsistent disclosure mandates. But the Federal Reserve is far more powerful than the SEC and has far more expertise, experience, and resources as to risk- and banking-related matters. The SEC faces an uphill fight in case of conflict. At worst—at least from the standpoint of the SEC and the traditional goals of public disclosure—the SEC might even be legally ousted from any role as to the risk-related disclosures of major banks.

A fundamental question is at the root of basic incoherence of the new morphology of public information. To what extent should the interests of investor protection and market efficiency be balanced against the interests of bank and system stability? The question was not considered in the creation of the new bank regulator disclosure system. There is a pressing need to do so soon.

Pending resolution of the fundamental question, some interim steps could help both the SEC and bank regulators muddle through. They fall into two areas, boundary-setting and a modest “informational neutrality” across the parallel universes.

Boundary-setting, resulting in a division of labor between the SEC and the bank regulators based on relative expertise, could help reduce conflict. The SEC has a comparative, perhaps even absolute, advantage with respect to information of a qualitative nature related to risk. The SEC disclosure system has a crown jewel in its MD&A requirements, requirements that have been fine-tuned over a generation. While primarily narrative in form, the MD&A is essential reading for anyone interested in the overarching risk characteristics of any entity. The bank regulators have no similar experience at structuring public disclosure requirements geared to capturing the trends and uncertainties at the heart of the MD&A.

The Federal Reserve has an absolute advantage with respect to quantitative information related to risk. There is no comparison between the market risk provisions of the two disclosure universes in terms of financial sophistication or granularity. In terms of stress testing, bank regulators have extensive substantive experience with supervisory stress tests and company-run stress tests. The SEC has none.
U.S. bank regulators have worked closely with both banks and bank regulators worldwide on the quantitative aspects of derivatives and other financial innovations since the 1980s. Indeed, these efforts helped foster the development of many risk-related models and techniques for the evaluation of such models. The SEC has not engaged in such efforts. Bank regulators have not only far more extensive resources in general, but far more employees with Ph.D.'s in economics and finance than does the SEC. They have many staff members who are effectively officed at major banks. The SEC has had little reason to do so.

Moreover, bank regulators are responsible for the substantive regulation of banks, and there is a highly interwoven relationship between the disclosure side and the substantive side. How this relationship could affect risk-related reporting is sharply illustrated in JPM's most recent Form 10-K, filed in February 2014. In this Form 10-K, JPM stated that, using a new approach for VaR backtesting—one that excluded such items as gains and losses from intraday trading—JPM posted gains on 177 of the 260 trading days in calendar year 2013.379 Had JPM used the previous approach for reporting purposes (one which did not exclude intraday gains or losses), JPM would literally have had posted gains on all 260 trading days. This reporting change was totally voluntary on the part of JPM. Nothing in the SEC Form 10-K requirements mandated this reporting change. This disclosure change appears to be entirely attributable to a substantive requirement that, as a matter of sound risk management, a bank must engage in VaR backtesting that, among other things, excludes intraday gains and losses. While JPM did not say so, JPM appears to have made the perfectly sensible decision to adopt the same backtesting approach for purposes of both the SEC reporting requirements and the substantive bank regulator rules.

As to the key area of model risk, federal bank regulators have taken significant steps to develop and validate their own modeling of bank risks as well as steps in assessing the quality of the modeling and the modeling process at individual banks.380 The SEC does not regulate banks and there has not been a reason for the SEC to develop models for assessing bank risks or to assess modeling at individual banks.

Given these differences between the SEC and the bank regulators, one possible interim strategy for a synergistic relationship between the bank regulator universe and the SEC universe would be to have the bank regulator universe direct most of its efforts to quantitative disclosures while the SEC disclosure universe focuses more on qualitative ones.

Another interim step would be to attempt some modest "informational neutrality" across the universes. For instance, the SEC and the bank regulators are subject to far different judicial oversight with respect to the promulgation of

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disclosure requirements. In recent years, the SEC has routinely lost on rule-
making challenges in the U.S. Court of Appeals for the D.C. Circuit. If more
flexibility could be accorded to the SEC in rulemaking, even if not quite as
much flexibility as enjoyed by bank regulators, the certainty this would provide
could lead to more effective cooperation in rule-making between the two sets of
regulators.

That is, even if the SEC should wish to do so, the SEC may not have the
authority in its rulemaking to sacrifice investor protection and market
efficiency ends in favor of bank well-being and financial stability. After
repeated losses over rulemaking at the U.S. Court of Appeals for the D.C.
Circuit, the SEC adopted a formal policy of cost-benefit analysis expressly
contemplating the efficiency-related goals imposed on it by law. 381 Adopted in
March 2012, the policy explicitly reflects statutory provisions added by the
National Securities Market Improvement Act of 1996 and the Gramm-Leach-
Bliley Act of 1999 to federal securities statutes which require the SEC to
consider “efficiency, competition, and capital formation” and which call for
consideration of variety of issues in addition to investor protection. 382 The
policy, framed in the form of a memo from the Division of Risk, Strategy, and
Financial Innovation 383 and the Office of the General Counsel, states that when
a rule is being proposed for enhanced disclosure, the cost-benefit justification
should generally include the following concepts:

[T]he likely benefits to be derived from the rule presumably would include
better informed investment decisions. This, in turn, could result in better
alignment of investors’ objectives and investments, greater investor trust in the
markets, lower risk premiums, and, ultimately, better allocation of capital. 384

The memo also points to other benefits from such disclosure
enhancements, including gains in economic efficiency from, among other
things, “reduced incentive misalignment/reduced monitoring costs,” reduced
transaction costs, and the better allocation of capital due to better information
sharing. 385 The focus is on investor protection and market efficiency.

The Federal Reserve is not subject to this kind of efficiency focus in its
rule-making. In the federal bank regulators’ release adopting U.S. Basel 2.5, the

381. See DIV. OF RISK, STRATEGY, & FIN. INNOVATION & OFFICE OF GEN. COUNSEL,
SEC. & EXCH. COMM’N, MEMORANDUM TO STAFF OF THE RULEWRITING DIVISIONS AND OFFICES RE:
CURRENT GUIDANCE ON ECONOMIC ANALYSIS IN SEC RULEMAKINGS (2012) [hereinafter RISK
FIN/OGC MEMO].
382. As to the pertinent statutes and the repeated rejections of SEC rules at the D.C.
Circuit on cost-benefit-related grounds, see, for example, James D. Cox & Benjamin J.C. Baucom, The
Emperor Has No Clothes: Confronting the D.C. Circuit’s Usurpation of SEC Rulemaking Authority, 90
TEX. L. REV. 1811 (2012); Bruce Kraus & Connor Raso, Rational Boundaries for SEC Cost-Benefit
383. This Division is now called the Division of Economic and Risk Analysis.
384. RISK FIN/OGC MEMO, supra note 381, at 10.
385. Id. at 10-11.

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cost-benefit section nowhere explicitly mentions how the enhanced disclosure may affect either the interests of investors or market efficiency.386 This section refers only to “increases [in] transparency through enhanced market disclosures.”387 This statement presumably is intended to reflect the “sound risk management practices” and “fostering financial stability” ends set out in the main text of the adopting release.388 The cost-benefit section is brief, consisting of roughly one page.

More generally, under the statutes related to the Federal Reserve Board’s rulemaking authority, the Board is not generally required to provide economic analysis in connection with its rulemaking.389 Neither the Federal Deposit Insurance Corporation nor the Office of the Comptroller of the Currency, the other federal bank regulators who joined in the Basel 2.5 Rule, appear subject to a requirement to consider investor protection or market efficiency grounds in any cost-benefit analysis.390

Outside of rulemaking, the SEC not only has leeway to work with the Federal Reserve in considering financial stability, but may have an obligation to do so. Among other things, one of the three primary purposes of the FSOC is to “respond to emerging threats to the stability of the U.S. financial system.”391 FSOC’s voting members include the Treasury Secretary, the chairman of the Federal Reserve, and the chairman of the SEC. As a statutory matter, FSOC must “monitor the financial services marketplace in order to identify potential threats to the financial stability of the United States.”392

The creation of FSOC has already had an impact on stability-related matters unquestionably within the SEC’s jurisdiction: the regulation of money market funds. Faced with the prospect of SEC inaction as to structural reforms, Treasury Secretary Timothy Geithner wrote to FSOC members urging that FSOC step in.393 In November of 2012, the FSOC recommended to the SEC structural reforms as to money market funds pursuant to the FSOC’s powers under Section 120 of the Dodd-Frank Act.394 Such FSOC actions reportedly caused the SEC to make certain money market fund proposals.395

387. Id. at 53,095.
388. Id. at 53,092.
390. See id. at 18, 20.
392. Id. at § 112(a)(2)(C).
393. See Letter from Timothy F. Geithner, Secretary, Department of the Treasury to Members of the Financial Stability Oversight Council, Sept. 27, 2012.
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The boundary-setting and the modest type of informational neutrality in terms of rulemaking may help in synchronizing the regulatory efforts in the short run. Ultimately, however, fundamental questions relating to the overall morphology of public information need to be resolved.

VI. Conclusion

Major banks used to exist in a simple world. Their products were simple: loans were easy to value and their risks relatively easy to assess. These banks were subject to a single mandatory disclosure system, one with widely-understood, longstanding ends and means.

Today’s financial world is vastly more complicated. Like the banks themselves, financial products and strategies have become so complex that they are sometimes not understood even by their key decision-makers. As much as they try to describe to investors and other market participants the risks that they face, the picture is often far from clear.

Technological innovation is making it possible to go beyond these attempts, to go beyond the descriptive mode of information and toward the transfer and hybrid modes. “Information” can and must now consist of a properly diversified portfolio of informational modes, which draws from the entire spectrum of possibilities.

In 2013, the banks became subject to public disclosure rules of two different sets of regulators, with divergent ends and means. The morphology of public information has changed in this vital context. As the traditional dominance of the SEC has ended, a daunting new task has arisen: harmonizing the SEC’s role with that of other regulators who are animated by different ends and have more sophisticated rules for risk-related disclosures. Classical understandings as to the primacy of investor protection and market efficiency in guiding public disclosure are giving way, as are longstanding concepts of “materiality” and the availability of both private and public enforcement. Securities lawyers and regulators, long ensconced in the world of the English language, graphs, and accounting numbers as the means of communication, are now in a less familiar, more mathematical world.

Constantly-evolving mathematical models have become essential to assessing the risks of major banks. A nuanced appreciation of such models as well as the vigorous and creative use of all three modes to communicate model-based information have become essential.

Multiplicity abounds. Multiple products of financial innovation generate multiple, often subtle and complex, risks for banks that are themselves complex. The banks are subject to multiple disclosure universes, with divergent regulatory quests. Multiple modes of information must be deployed.

Fundamental principles are at stake, as are the interests of banks, investors, and countries. The informational challenges posed by this new world must be met. An understanding of its multiplicity would be a start.