

# INVESTORS TAKE NOTE: COMPLEXITY AND DISCLOSURE EFFICACY CONCERNS AMID A STRUCTURED NOTES RENAISSANCE

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*This Note examines how increasing complexity fueled by financial innovations can impair mandatory disclosure as an investor-protection mechanism. It focuses on structured notes, a type of debt security that has transformed significantly since the global financial crisis. This Note highlights several financial innovations that have fueled an unprecedented increase in structured note issuance volume by expanding access and catering to more idiosyncratic investor preferences, such as the proliferation of digital platforms and proprietary indexes. It considers how these innovations have made structured notes more complex and how increased complexity might make crucial information more expensive and more difficult for issuers to express and for investors and regulators to understand through disclosure documents. In addition to discussing the potential effects of increasing complexity, this Note conducts a brief analysis of the readability of a novel data set of structured note prospectuses filed with the Securities and Exchange Commission and shows that structured note disclosure has become more difficult to read over time. This Note argues that mandatory disclosure rules may not be enough to protect investors as structured notes continue to grow in popularity and evolve in substance, and it suggests several improvements to the current disclosure regime, such as interactive digital calculators, to combat informational hurdles that investors in increasingly complex structured notes might face in the years ahead.*

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## INTRODUCTION

Today, regulation of securities offerings in the capital markets arguably faces no greater threat than increasing complexity and information loss.<sup>1</sup> Yet, after decades of technology-driven financial

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1. See, e.g., Kathryn Judge, *Fragmentation Nodes: A Study in Financial Innovation, Complexity, and Systemic Risk*, 64 Stan. L. Rev. 657, 658, 661–63 (2012) [hereinafter Judge, *Fragmentation Nodes*] (finding that complexity can—and, in the 2007 to 2009 financial crisis, did—give rise to a “pervasive loss of information” that in turn “contribute[s] to

innovation,<sup>2</sup> financial regulation continues to rely primarily on the mandatory disclosure of information to investors.<sup>3</sup> This Note examines the effectiveness of disclosure in the context of the complexity and information loss threats through the lens of a financial instrument currently undergoing a profound transformation—structured notes.

The regulatory environment around securities offerings is ripe for reevaluation. The global financial crisis (GFC) that spanned 2007 to 2009 kicked off a “rulemaking frenzy” that culminated in the 2010 passage of the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank).<sup>4</sup> Dodd–Frank required “eleven different federal

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systemic risk”); Steven L. Schwarcz, Protecting Financial Markets: Lessons From the Subprime Mortgage Meltdown, 93 Minn. L. Rev. 373, 405 (2008) [hereinafter Schwarcz, Protecting Financial Markets] (“Solving problems of financial complexity may well be the ultimate twenty-first century market goal.”).

2. See Douglas W. Arner, János Barberis & Ross P. Buckley, FinTech, RegTech, and the Reconceptualization of Financial Regulation, 37 Nw. J. Int'l L. & Bus. 371, 373 (2017) (“[T]echnological developments are changing the nature of financial markets, services, and institutions in ways completely unexpected prior to the 2008 Global Financial Crisis . . .”); Kathryn Judge, Investor-Driven Financial Innovation, 8 Harv. Bus. L. Rev. 291, 292 (2017) [hereinafter Judge, Investor-Driven Financial Innovation] (“The current excitement around ‘fintech’ is merely the most recent iteration of an ongoing process of innovation that has fundamentally transformed the structure of the financial system.”).

3. See What We Do, SEC, <https://www.sec.gov/about/what-we-do#section1> [<https://perma.cc/7X32-8H82>] [hereinafter SEC, What We Do] (last modified Nov. 22, 2021) (“[The SEC] require[s] public companies, fund and asset managers, investment professionals, and other market participants to regularly disclose significant financial and other information so investors have the timely, accurate, and complete information they need to make confident and informed decisions about when or where to invest.”).

4. Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified as amended in scattered sections of 12 U.S.C. and 15 U.S.C.); see also Dan Awrey & Kathryn Judge, Why Financial Regulation Keeps Falling Short, 61 B.C. L. Rev. 2295, 2296 (2020); Tamar Frankel, The Failure of Investor Protection Disclosure, 81 U. Cin. L. Rev. 421, 422 (2012). One of the GFC’s proximate causes was the U.S. subprime mortgage crisis. Housing prices precipitously declined after the collapse of the U.S. housing bubble in 2006 and 2007. As home values dropped, adjustable-rate mortgages on those homes began to reset at significantly higher interest rates. Unable to afford their higher monthly payments, homeowners, especially subprime borrowers, began to default on their mortgages. As defaults rose, mortgage-backed securities (MBSs)—bonds secured by pools of mortgages—and collateralized debt obligations (CDOs)—many of which derived income from MBSs—cratered in value. See Schwarcz, Protecting Financial Markets, *supra* note 1, at 378–79.

The GFC laid waste to the U.S. economy. Americans lost nearly ten trillion dollars in wealth, the stock market lost almost eight trillion dollars in value, and the number of unemployed Americans doubled. See Renae Merle, A Guide to the Financial Crisis—10 Years Later, Wash. Post (Sept. 10, 2018), <https://www.washingtonpost.com/business/economy/a-guide-to-the-financial-crisis-10-years-later/2018/09/10/114b76ba->

agencies . . . to undertake 243 separate rulemaking processes and conduct sixty-seven studies,”<sup>5</sup> and many of its reforms persist today.<sup>6</sup> But much has changed in the twelve years since Dodd–Frank. Financial innovations—in particular, innovations in financial technology (fintech) and the rapid proliferation of fintech firms—have since disrupted established financial institutions, diffused financial markets, and diversified the array of financial instruments to which retail investors have access.<sup>7</sup> The resulting landscape, as the Financial Stability Oversight Counsel (FSOC) found, is one of elevated uncertainty, volatility, and widening gaps in market data.<sup>8</sup> Accordingly, concerns abound about the continued ability of mandatory disclosure to protect investors.<sup>9</sup>

Structured notes, debt securities sold by financial institutions to raise capital,<sup>10</sup> are one such instrument class that has transformed in scope and substance since the GFC. The emergence of digital structured notes platforms has “lower[ed] costs, [sped up] execution times and increased price transparency,”<sup>11</sup> and advancements in modeling and methodological capabilities have allowed notes to cater to more idiosyncratic investment

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af10-11e8-a20b-5f4f84429666\_story.html [<https://perma.cc/W4VY-MFE9>]; Civilian Unemployment Rate, U.S. Bureau of Lab. Stat., <https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm> [<https://perma.cc/2TBD-W4LV>] (last visited Nov. 5, 2021). The effects are still felt today. See John W. Schoen, Financial Crisis of 2008 Is Still Taking a Bite Out of Your Paycheck 10 Years Later, CNBC (Sept. 12, 2018), <https://www.cnbc.com/2018/09/11/financial-crisis-of-2008-still-taking-bite-out-of-your-paycheck-report.html> [<https://perma.cc/EP6P-5RG2>] (describing the GFC’s lasting impact on national gross domestic product and household income).

5. Awrey & Judge, *supra* note 4, at 2297.

6. See, e.g., Dodd–Frank Wall Street Reform and Consumer Protection Act § 165(i), 124 Stat. at 1430–31 (requiring stress-testing of financial institutions); *id.* § 913(g), 124 Stat. at 1828–30 (updating standards of conduct for industry professionals); *id.* § 942(b), 124 Stat. at 1897 (enhancing oversight of the capital markets).

7. See *infra* notes 85–95 and accompanying text.

8. See Fin. Stability Oversight Council, 2021 Annual Report 10, 16–17 (2021), <https://home.treasury.gov/system/files/261/FSOC2021AnnualReport.pdf> [<https://perma.cc/2PD5-SWQ7>].

9. See, e.g., William Magnuson, Financial Regulation in the Bitcoin Era, 23 Stan. J.L. Bus. & Fin. 159, 161–63 (2018) (arguing that recent innovations in financial technology “render the conventional tools of financial regulators largely ineffective by increasing the cost of identifying, monitoring and sanctioning market participants”).

10. See Stephen A. Ross, Randolph W. Westerfield & Bradford D. Jordan, Fundamentals of Corporate Finance 216 (12th ed. 2018). For a more detailed description of structured notes, see *infra* section I.A.

11. Carolina Wilson, Electronic Note Services Proliferate in the U.S., Structured Notes: Technology Issue (Bloomberg LP, New York, N.Y.), Apr. 2017, at 5, 5, [https://www.bbhub.io/brief/sites/4/2017/04/04-2017\\_STN\\_Quarterly.pdf](https://www.bbhub.io/brief/sites/4/2017/04/04-2017_STN_Quarterly.pdf) [<https://perma.cc/VM3Q-P29C>].

preferences.<sup>12</sup> Dovetailing these innovations is a record of explosive growth. After declining by almost 30% during the GFC,<sup>13</sup> the market for structured notes “bounced back with ferocity.”<sup>14</sup> Less than a decade later, the global structured notes market surpassed two trillion dollars,<sup>15</sup> and the U.S. market alone reached seventy-two billion dollars, a 100% increase from 2009.<sup>16</sup> And these trends show no signs of slowing. Monthly U.S. sales reached decade highs during the 2020 COVID-19-induced stock market crash,<sup>17</sup> digital note platforms ended 2021 with record business,<sup>18</sup> and U.S. sales continued to increase in the first quarter of 2022.<sup>19</sup> This renaissance

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12. See, e.g., *infra* note 106 and accompanying text.

13. Matthew Goldstein, *Insight-Structured Notes Start to Overcome the Lehman Taint*, Reuters (Mar. 29, 2010), <https://www.reuters.com/article/structurednotes/insight-structured-notes-start-to-overcome-the-lehman-taint-idUSN2925219720100329> [<https://perma.cc/T7RP-W6LC>] (noting a decline in U.S. sales of structured notes in the first two years of the GFC from around fifty billion to thirty-five billion dollars).

14. Luis A. Aguilar, *Comm'r, SEC, Regulators Working Together to Serve Investors* (Apr. 14, 2015), <https://www.sec.gov/news/speech/regulators-working-together-to-serve-investors.html> [<https://perma.cc/G3RS-ZA74>].

15. See *Structured Notes Infographic*, *Halo Investing* (Aug. 31, 2022), <https://haloinvesting.com/blog/what-is-a-structured-note-infographic/> [<https://perma.cc/LPD2-MZUC>].

16. See Aguilar, *supra* note 14 (noting thirty-four billion dollars in structured note sales in 2009); Evie Liu, *Structured Notes Saw Record Demand in a Volatile 2020. Investors Should Mind the Fine Print.*, Barron's (Feb. 24, 2021), <https://www.barrons.com/articles/structured-notes-saw-record-demand-in-a-volatile-2020-investors-should-mind-the-fine-print-51614124699> (on file with the *Columbia Law Review*) (noting seventy-two billion dollars in total structured note sales in 2020, more than twice the 2009 figure).

17. See Gunjan Banerji & Julia-Ambra Verlaine, *The Reach for Yield Survives Coronavirus Market Shock*, *Wall St. J.* (Apr. 27, 2020), <https://www.wsj.com/articles/the-reach-for-yield-survives-coronavirus-market-shock-11587979802> (on file with the *Columbia Law Review*) (“[S]ales of so-called structured products geared toward individual investors—including bets on stocks repackaged into bonds—hit a decade high in March [2020].”). Between February 12 and March 23, 2020, the Dow Jones Industrial Average dropped 37%. This period included the three worst single-day market drops in history. See Liz Frazier, *The Coronavirus Crash of 2020, and the Investing Lesson It Taught Us*, *Forbes* (Feb. 11, 2021), <https://www.forbes.com/sites/lizfrazierpeck/2021/02/11/the-coronavirus-crash-of-2020-and-the-investing-lesson-it-taught-us/?sh=326b235346cf> (on file with the *Columbia Law Review*).

18. Amélie Labbe, *SRP in Brief: Ending on a High*, SRP (Nov. 29, 2021), <https://www.structuredretailproducts.com/news/details/77770> [<https://perma.cc/HHN3-89LE>] (“US platform Simon has announced record increases in its structured investment broker-dealer volumes . . . . Simon distributed just over 3100 structured products . . . in 2021 to-date worth US\$11 billion.”).

19. *Spotlight On . . . Top Issuers in the US (Q1 2022)*, SRPIsight, May/June 2022, at 13, 13 (“Some US\$26.6 billion was collected from 8,561 structured products (an average of US\$3.1 per product) in [Q1] 2022—a slight increase from Q1 2021 (US\$26.3 billion from 8,085 products). Sales and issuance were also up compared to Q4 2021 when US\$24.6 billion was collected from 8,054 products.”).

is poised to test the limits of the legacy disclosure scheme in the years ahead and, accordingly, warrants renewed scrutiny.<sup>20</sup>

This Note's core assertion is that increasing complexity and information loss in the structured notes market may impair the efficacy of disclosure as an investor-protection mechanism. Specifically, this Note highlights several trends and innovations that may increase complexity in the structured notes market and the securities themselves. Increased complexity heightens the informational burden placed on parties that engage in structured note transactions. This heightened burden could, in turn, impair the construction and comprehension of disclosure, reducing the efficacy of disclosure as a means of informing and protecting investors.

This Note progresses in four Parts. Part I explains the mechanics of structured notes as investment securities and details the disclosure regime that regulates the public offering of structured notes to investors. Part II details the conceptual framework shaped by a number of legal scholars following the GFC that links financial innovation, complexity, and information loss.<sup>21</sup> It then situates today's structured notes landscape

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20. The market's transformation has produced a spirited discussion among market participants about the merits of structured notes as investments. Some describe structured notes as "a robust investment and asset allocation strategy." Structured Products, HSBC, <https://www.gbm.hsbc.com/solutions/markets/structured-products> [https://perma.cc/6ZRE-BR6F] (last visited Oct. 31, 2021), and "the missing piece of your portfolio," Evan J. Mayer, Why Structured Notes Are One of the Most Innovative Options to Come Out Since the Mutual Fund, Worth (Nov. 19, 2020), <https://www.worth.com/structured-notes-innovative-option-mutual-fund-investing/> [https://perma.cc/7ZMP-KVY7]. Others warn that structured notes "spring from the dead to devour investor dollars," John F. Wasik, Why You Should Avoid Zombie Structured Notes, Forbes (Oct. 24, 2014), <https://www.forbes.com/sites/johnwasik/2014/10/24/why-you-should-avoid-zombie-structured-notes/> [https://perma.cc/45RN-7T8U], and that investors should "take a pass," Amy C. Arnott, A 13% Yield: What Could Go Wrong?, Morningstar (June 1, 2020), <https://www.morningstar.com/articles/986847/a-13-yield-what-could-go-wrong> [https://perma.cc/TA5Y-27Y2]. This Note does not wade into this debate.

21. See, e.g., Dan Awrey, Complexity, Innovation, and the Regulation of Modern Financial Markets, 2 Harv. Bus. L. Rev. 235 (2012) (arguing that the post-GFC regulatory regimes governing derivatives markets disregard the regulatory challenges generated by financial innovation); Judge, Fragmentation Nodes, *supra* note 1 (showing how the complexity of fragmentation nodes gives rise to two phenomenon—information loss and stickiness—that in turn may give rise to systemic risk); Steven L. Schwarcz, Regulating Complexity in Financial Markets, 87 Wash. U. L. Rev. 211 (2009) [hereinafter Schwarcz, Regulating Complexity] (examining how complexities of investment securities and of modern financial markets can lead to and exacerbate failures of investing standards and financial-market practices). This Note relies on several other strands of post-GFC scholarship. One strand analyzes regulatory challenges specific to structured notes; another strand debates the merits of mandatory disclosure in financial regulation. Compare Michael Bennet, Complexity and Its Discontents: Recurring Legal Concerns With Structured Products, 7 N.Y.U. J.L. & Bus. 811, 813 (2011) (examining "two of the key legal issues

within that framework by identifying several potential sources of complexity that may fuel information loss in the creation and comprehension of structured note disclosure documents. Part III conducts a brief empirical analysis of the readability of structured note disclosure documents. This Part recognizes the limitations inherent in the theoretical framework discussed in Part II and attempts to measure disclosure efficacy through the proxy of readability over the course of the recent structured notes renaissance. Part IV asserts that the recent innovations in the structured notes market warrant the reevaluation by financial regulators of the disclosure rules that are designed to communicate information to investors. It then highlights some potential *ex ante* reforms that may help to ameliorate the informational issues of disclosure in the coming years.

## I. THE REGULATION OF STRUCTURED NOTES

This Part introduces the subject of this Note’s disclosure analysis: structured notes. The following overview shows that structured notes can be customized to suit idiosyncratic investor objectives through unique combinations of underlying components and interacting features. This Part also introduces the mandatory disclosure rules and requirements that govern the public offering of structured notes in the U.S. capital markets.

### A. *Structured Note, Explained*

Structured notes are debt securities sold by financial institutions, or issuers, to raise capital.<sup>22</sup> Generally, an investor in a structured note lends

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relevant to the structured products market: investor suitability and conflicts of interest”), and Ann Morales Olazábal & Howard Marmorstein, Structured Products for the Retail Market: The Regulatory Implications of Investor Innumeracy and Consumer Information Processing, 52 Ariz. L. Rev. 623, 627 (2010) (arguing that the use of numerical examples to illustrate possible investment returns in structured notes “encourages issuer abuse of investors’ known cognitive biases”), with Robert P. Bartlett, III, Inefficiencies in the Information Thicket: A Case Study of Derivative Disclosures During the Financial Crisis, 36 J. Corp. L. 1, 57 (2010) (“[T]he results of this study indicate that the traditional disclosure model aimed at simply disseminating information to the public domain is unlikely to have significant efficacy when it comes to disclosures pertaining to complex credit derivatives.”), and Henry T.C. Hu, Too Complex to Depict? Innovation, “Pure Information,” and the SEC Disclosure Paradigm, 90 Tex. L. Rev. 1601, 1713 (2012) (showing that “current depiction tools cannot capture the risk-return characteristics of [asset-backed securities]” and that “[s]imilar depiction problems afflict the disclosures of major financial institutions”).

22. A debt security is a negotiable financial instrument that evidences a promise by a borrower, here the issuer, to repay money loaned by a lender, here the investor. Like equity securities, debt securities can be traded between investors. Unlike equity securities, debt securities do not provide investors ownership interest in the issuers or any other company, and

an amount of money—this original investment is called the principal—to the note's issuer for a predetermined, fixed period of time.<sup>23</sup> In exchange for the principal, the issuer promises to pay the investor an amount of money in the future—the return on the note—that will be determined pursuant to a series of terms outlined in the note. The lifecycle of the note concludes at the note's maturity date, at which point the issuer's final obligation to repay the investor comes due.

More specifically, a structured note is a wrapper, or vehicle, that combines the terms of several component securities.<sup>24</sup> The issuer in a typical structured note uses the principal investment to purchase a bond component and an embedded derivative component.<sup>25</sup> The bond component supplies the note's fixed maturity date and the funds to return the investor's principal, and the options package provides a set of unique, customizable features that determine the note's return.<sup>26</sup>

Principal among these features is that the return on a structured note is a function of the performance of one or more underlying reference assets (underliers).<sup>27</sup> Stated differently, the payoff on a structured note depends on whether the underliers to which it links—the underliers referenced in the note's terms—increase or decrease in value.<sup>28</sup> In effect,

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outstanding payments on debt securities are liabilities of the issuing financial institution. Treasury securities or bonds are common examples of debt securities. See Ross et al., *supra* note 10, at 206; Practical L. Corp. & Sec., *Debt Securities: Overview*, Westlaw Practical Law 4-383-2634 [hereinafter *Debt Securities Practice Note*] (last visited Nov. 20, 2022).

23. See *Debt Securities Practice Note*, *supra* note 22.

24. See *Under the Hood: How Structured Notes Work*, Halo J. (Feb. 3, 2021), <https://journal.haloinvesting.com/under-the-hood-how-structured-notes-work/> [<https://perma.cc/AKF7-YVLK>].

25. Investor Bulletin: Structured Notes, SEC (Jan. 12, 2015), [https://www.sec.gov/oiea/investor-alerts-bulletins/ib\\_structurednotes.html](https://www.sec.gov/oiea/investor-alerts-bulletins/ib_structurednotes.html) [<https://perma.cc/8U6Z-SAXU>] [hereinafter SEC, *Investor Bulletin*]; see also Bennet, *supra* note 21, at 814 (describing the two core components of a simple structured product). The embedded derivative component is an options package. See *Under the Hood: How Structured Notes Work*, *supra* note 24 (“While the majority of a structured note consists of a zero-coupon bond, the remainder is an options package which determines the payout/participation and protection levels.”).

26. See SEC, *Investor Bulletin*, *supra* note 25.

27. Id. A note's return is also a function of the arrangement of its underliers. A note with one underlier is entirely dependent on that underlier for its return. But other notes may link to a group or basket of underliers that may be assigned equal or unequal weight in determining the note's return. See, e.g., Goldman Sachs Grp., Inc., *Basket-Linked Trigger GEARS Due 2030* (Form 424(b)(2)), at S-3 (Mar. 31, 2020), <https://www.sec.gov/Archives/edgar/data/0001419828/000156459020014349/gs-424b2.htm> [<https://perma.cc/F9ED-GCDD>] (linking to a basket of six unequally weighted equity indexes).

28. See, e.g., Goldman Sachs Grp., Inc., *Leveraged Buffered S&P 500 Index-Linked Notes Due 2022* (Form 424(b)(2)), at PS-1 (Oct. 8, 2021), <https://www.sec.gov/Archives>/

a note can link to any asset to which an investor wants exposure. The most common classes of underliers are equity indexes like the S&P 500, equity securities like Apple’s common stock, and exchange-traded funds (ETFs).<sup>29</sup> More exotic underliers can include commodities, the spread between interest rate swaps, and proprietary indexes comprised of complicated methodologies. In concert with recent trends, issuers have even begun offering notes linked to companies with large cryptocurrency holdings and to special-purpose acquisition companies.<sup>30</sup>

Distinct from a note’s underliers is the structure that determines the payoff it delivers to investors.<sup>31</sup> Among the myriad terms that comprise a note’s payoff structure, one of the most common is principal protection, or a promise to repay part or all of an investor’s principal if the investor holds the note to maturity.<sup>32</sup> This promise of full or partial principal

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edgar/data/0001419828/000156459021050537/gs-424b2.htm [https://perma.cc/G6MU-7FYB] (“The amount that you will be paid on your notes on the stated maturity date . . . is based on the performance of the S&P 500 Index . . .”).

29. In 2020, over 70% of structured notes linked to either one or a basket of equity indexes. Among these notes, nearly 25% linked to just the S&P 500, and around 15% linked to a combination of the S&P 500, the Russell 2000, the Dow Jones Industrial Average, and the Nasdaq 100. Around 23% of structured notes linked to either one or a basket of equity securities. See USA 2020 Market Overview: Highest Ever Annual Growth, SRPInsight, Jan. 2021, at 20, 23.

30. Goldman Offers SPAC-Linked Structured Notes, SRPInsight, Nov./Dec. 2021, at 15, 15 (on file with the *Columbia Law Review*) (reporting on the private offering of some SPAC-linked notes to capitalize on heightened market activity); Stephen Alpher, JPMorgan Structured Note to Offer Clients Crypto Exposure, Seeking Alpha (Mar. 9, 2021), https://seekingalpha.com/news/3670886-jpmorgan-structured-note-to-offer-clients-crypto-exposure (on file with the *Columbia Law Review*) (noting the motivation of investors to acquire exposure to cryptocurrencies without themselves owning cryptocurrency).

31. See SEC, Investor Bulletin, supra note 25 (“Determining the performance of each note can be complex and this calculation can vary significantly from note to note depending on the structure. Notes can be structured in a wide variety of ways.”).

32. A note offering full principal protection essentially exempts the principal from the influence of the performance of its underliers. See Structured Notes With Principal Protection: Note the Terms of Your Investment, SEC (June 1, 2011), https://www.sec.gov/investor/alerts/structurednotes.htm [https://perma.cc/G7DK-6F7G] [hereinafter SEC, Structured Notes With Principal Protection]. A note offering partial principal protection subjects only a portion of the principal to the performance of the note’s underliers. One example is a hard buffer, or a “minimum percentage decline in the underlier before which the investor is not subject to loss, and thereafter, loss is incurred on a 1:1 basis.” Christopher S. Schell, Yan Zhang & Derek Walters, The Structured Products Law Review: USA, The L. Revs. (Nov. 8, 2021), https://thelawreviews.co.uk/title/the-structured-products-law-review/usa (on file with the *Columbia Law Review*). Note, however, that “any guarantee that [an investor’s] principal will be protected—whether in whole or in part—is only as good as the financial strength of the company that makes that promise. In other words, the principal

protection serves to “allow investors to participate in the upside of a sector or asset class, while limiting downside exposure.”<sup>33</sup> Another term may be a participation rate, a “minimum payoff of the principal invested plus an additional payoff to [the investor] based on multiplying any increase in the reference asset or index by a fixed percentage.”<sup>34</sup> For example, a participation rate of 200% of an underlier’s return promises to pay an investor 2% for every 1% the underlier increases. A note’s payoff may also be affected by a redemption or call feature. When a note is redeemed, whether automatically or at the issuer’s discretion, it immediately matures and the investor receives the principal and any additional redemption-related payments bargained for in the note’s terms.<sup>35</sup> Understanding how these features work and interact to provide the payoff on a note is of central importance to investors in assessing a note as an investment.

### B. Mandatory Disclosure

The fundamental principle that governs the public offering of structured notes is simple: Disclosure of material information enables the investing public to make informed investment decisions and deters issuers from intentionally misleading investors.<sup>36</sup> It is presumed that, by requiring issuers to convey information pertinent to the structured notes they offer, investors will utilize that information when deciding whether or not to invest.<sup>37</sup> Accordingly, mandatory disclosure in the structured notes offering process is effectuated by two federal securities laws, the Securities Act of 1933 (Securities Act) and the Securities Exchange Act of 1934 (Exchange

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guarantee is subject to the creditworthiness of the guarantor . . . .” SEC, Structured Notes With Principal Protection, *supra*.

33. Steve Skancke, The Benefits of Structured Notes, *Wall St. J.* (Sept. 11, 2016), <https://www.wsj.com/articles/the-benefits-of-structured-notes-1473645602> (on file with the *Columbia Law Review*).

34. SEC, Investor Bulletin, *supra* note 25 (“A participation rate determines how much of the increase in the reference asset or index will be paid to investors of the structured note.”).

35. The automatic redemption of notes is typically triggered by an underlier breaching a predetermined threshold, often referred to as the call level or price, on a specific date. See Geng Deng, Joshua Mallett & Craig McCann, Modeling Autocallable Structured Products, 17 *J. Derivatives & Hedge Funds* 326, 327 (2011) (noting that a continuous autocallable structured product can be automatically called if the underlier meets a certain “call price” threshold).

36. Frankel, *supra* note 4, at 426.

37. See Allison Herren Lee, Comm’r, SEC, Living in a Material World: Myths and Misconceptions About “Materiality” (May 24, 2021), <https://www.sec.gov/news/speech/lee-living-material-world-052421#> [<https://perma.cc/T5F7-6LQS>].

Act),<sup>38</sup> and by regulations promulgated by the Securities and Exchange Commission (SEC), the principal U.S. capital markets regulator.<sup>39</sup>

1. *Registration Statements and Prospectuses.* — Section 5 of the Securities Act prohibits the sale of structured notes without first filing an effective registration statement with the SEC.<sup>40</sup> To meet this requirement, structured note issuers typically file “shelf” registration statements using Form S-3.<sup>41</sup> An effective “shelf” registration statement permits issuers to register multiple structured note offerings for sale “either on a continuous or delayed basis, although a portion of the securities may be offered immediately.”<sup>42</sup> Form S-3 provides additional benefits to structured note

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38. Securities Act of 1933, Pub. L. No. 73-22, 48 Stat. 74 (codified as amended at 15 U.S.C. §§ 77a–77mm (2018)); Securities Exchange Act of 1934, Pub. L. No. 73-291, 48 Stat. 881 (codified as amended at 15 U.S.C. §§ 78a–78kk). Both statutes define “security” to include “any note.” See Securities Act § 2(a)(1), 48 Stat. at 74; Securities Exchange Act § 3(a)(10), 48 Stat. at 883–84. In *Reves v. Ernst & Young*, the Supreme Court held that “any note” is presumed to be a “security,” a presumption rebuttable only by showing that a note more closely resembles something delivered in a non-investment situation, like a note “delivered in consumer financing” or “which simply formalizes an open-account debt incurred in the ordinary course of business.” 494 U.S. 56, 65–66 (1990) (internal quotation marks omitted) (quoting *Exch. Nat'l Bank of Chi. v. Touche Ross & Co.*, 544 F.2d 1126, 1138 (1976)).

39. See Securities Exchange Act § 4, 48 Stat. at 885 (establishing the SEC and defining the scope of its power). The SEC’s mandate is threefold: (1) protect investors; (2) facilitate capital formation; and (3) maintain fair, orderly, and efficient markets. SEC, What We Do, *supra* note 3. The SEC is aided by the Financial Industry Regulatory Authority (FINRA), a self-regulatory organization created during the GFC to oversee securities brokers and dealers. Press Release, SEC, SEC Gives Regulatory Approval for NASD and NYSE Consolidation (July 26, 2007), <https://www.sec.gov/news/press/2007/2007-151.htm> [<https://perma.cc/K59M-7RJ6>] (describing FINRA as a consolidation of the overlapping member firm regulatory functions of the National Association of Securities Dealers and a subsidiary of the New York Stock Exchange).

40. See Securities Act § 5(a), 48 Stat. at 77.

41. See 17 C.F.R. § 230.415(a)(1)(x) (2022). To be eligible to use Form S-3, issuers must, *inter alia*, (1) have “a class of securities registered pursuant to Section 12(b) of the . . . Exchange Act”; (2) be “subject to the [reporting] requirements of Section 12 or 15(d) of the Exchange Act . . . [for] at least twelve calendar months immediately preceding the filing of the [Form S-3] registration statement”; and (3) not have “failed to pay any dividend” or “defaulted . . . on any installment . . . on indebtedness for borrowed money.” SEC, Form S-3: Registration Statement Under the Securities Act of 1933, at 2–3 (2021), <https://www.sec.gov/files/forms-3.pdf> [<https://perma.cc/75FJ-32WW>].

42. Lloyd S. Harmetz & Bradley Berman, Morrison & Foerster LLP, Frequently Asked Questions About Shelf Offerings 1 (2017), <https://media2.mofo.com/documents/faqshelfofferings.pdf> [<https://perma.cc/8WFZ-WNTY>] (“An effective shelf registration statement enables an issuer to access the capital markets quickly when needed or when market conditions are optimal. The primary advantages of a shelf registration statement are timing and certainty.”).

issuers who qualify as well-known seasoned issuers (WKSIs).<sup>43</sup> Wksi Form S-3 registration statements become effective automatically upon filing without any prior SEC review or comment and can be used to “register . . . an unspecified amount of securities to be offered.”<sup>44</sup>

To satisfy Form S-3’s disclosure requirements,<sup>45</sup> issuers must also file a “base” prospectus describing the general structured note programs to be registered and furnishing general information about the issuer.<sup>46</sup> Information in this prospectus is inherently general because, at the time of filing, issuers have not yet built, marketed, and sold structured notes to investors. Accordingly, Rule 430A permits issuers to omit note-specific information from this prospectus, including “the public offering price, underwriting syndicate[,] . . . underwriting discounts or commissions, discounts or commissions to dealers, amount of proceeds, conversion rates, call prices and other items dependent upon the offering price, delivery dates, and terms of the securities dependent upon the offering date.”<sup>47</sup> Under Rule 430B, WKSIs that file automatic shelf registration statements may also omit any other “information that is unknown or not reasonably available to the issuer.”<sup>48</sup>

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43. WKSIs are issuers who: (1) meet all Form S-3 registration requirements and (2) have a worldwide market value of 700 million dollars or more in outstanding non-affiliate-held common equity or one billion dollars in primary offerings for cash registered under the Securities Act. See 17 C.F.R. § 230.405 (defining well-known seasoned issuers). For an example of a Wksi Form S-3 filing, see Goldman Sachs Grp., Inc., Registration Statement Under the Securities Act of 1933 (Form S-3) (July 1, 2020), <https://www.sec.gov/Archives/edgar/data/0000886982/000119312520185203/d948755ds3asr.htm> [<https://perma.cc/XM7B-NUK8>] (registering seven different securities programs).

44. Securities Offering Reform, 70 Fed. Reg. 44,722, 44,726 n.40, 44,779 (Aug. 3, 2005) (codified in scattered parts of 17 C.F.R.) (describing automatic shelf registration as a “streamlined . . . process” to provide WKSIs “greater flexibility”); see also Harmetz & Berman, *supra* note 42, at 8 (noting that there is “no delay in effectiveness” for shelf registration statements).

45. The full list of information required in a registration statement is provided in Schedule A of the Securities Act. See 15 U.S.C. § 77aa (2018).

46. See Securities Offering Reform, 70 Fed. Reg. at 44,779; Schell et al., *supra* note 32 (“[An issuer’s] annual, quarterly and other periodic reports [are] typically incorporated by reference into the base prospectus.”).

47. 17 C.F.R. § 230.430A(a). Omitting this information from the form prospectus will not affect the information that an investor will ultimately receive related to the terms of a specific offering. See Securities Offering Reform, 70 Fed. Reg. at 44,778; *infra* notes 53–57 and accompanying text.

48. 17 C.F.R. § 230.430B(a).

This base prospectus satisfies Section 10 of the Securities Act<sup>49</sup> for the purposes of Section 5(b)(1) of the Securities Act<sup>50</sup> and can be used by the issuer and broker-dealers to *offer* structured notes to investors.<sup>51</sup> But it does not yet satisfy Section 10(a) for the purposes of Section 5(b)(2), which relates specifically to the sale or delivery after sale of a security.<sup>52</sup> Accordingly, to satisfy Section 10(a), the issuer must file a “prospectus supplement,” governed by Rule 424(b)(2), for each individual note offering that includes the information previously omitted from the base prospectus.<sup>53</sup> Under Rule 424(b)(2),<sup>54</sup> prospectus supplements describing the terms of an offering—also often referred to as “pricing supplements”—must be filed with the SEC within two business days of the trade date.<sup>55</sup> Prospectus supplements filed pursuant to Rule 424(b)(2) are “deemed part of, and included in, the registration statement containing the base prospectus to which the prospectus supplement relates.”<sup>56</sup> And, like shelf registration statements,

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49. 15 U.S.C. § 77j(b) (“[T]he Commission shall by rules or regulations . . . permit the use of a prospectus for the purposes of [Securities Act Section 5(b)(1),] which omits in part or summarizes information in the [base] prospectus . . .”).

50. Id. § 77e(b)(1) (“It shall be unlawful for any person, directly or indirectly . . . to carry or transmit any prospectus relating to any security with respect to which a registration statement has been filed under this subchapter, unless such prospectus meets the requirements of [Securities Act Section 10] . . .”); Securities Offering Reform, 70 Fed. Reg. at 44,771 n.443 (“Rule [430B] codifies that such a [base] prospectus will satisfy the requirements of Securities Act Section 10 for purpose of Securities Act Section 10(b)(1).”).

51. See Harmetz & Berman, *supra* note 42, at 5.

52. See 15 U.S.C. § 77e(b)(2) (“It shall be unlawful for any person, directly or indirectly . . . to carry or cause to be carried . . . such security for the purpose of sale or for delivery after sale, unless accompanied or preceded by a prospectus that meets the requirements of [Securities Act Section 10(a)].”); Securities Offering Reform, 70 Fed. Reg. at 44,771 (“A base prospectus that omits statutorily required information is not a Securities Act Section 10(a) final prospectus . . .”); Harmetz & Berman, *supra* note 42, at 6.

53. See 17 C.F.R. §§ 230.430A(a)(3), 230.430B(d)(2).

54. Rule 424(b) covers prospectus supplements for “securities registered for issuance on a delayed basis . . . [that] disclose[] the public offering price, description of securities or similar matters, and . . . information previously omitted from the prospectus filed as part of an effective registration statement in reliance on Rule 430B.” 17 C.F.R. § 230.424(b)(2).

55. See id. § 230.424(b)(1) (setting the filing deadline at two business days after “determination of the offering price”). In practice, issuers often file intermediary prospectus supplements—more specific than the base prospectus but less specific than a pricing supplement—to provide additional disclosure about a certain payoff structure or underlier. See, e.g., JPMorgan Chase & Co., Airbag Autocallable Yield Optimization Notes (Form 424(b)(2)) (Feb. 28, 2013), [https://www.sec.gov/Archives/edgar/data/19617/000089109213001766/e52355\\_424b2.htm](https://www.sec.gov/Archives/edgar/data/19617/000089109213001766/e52355_424b2.htm) [<https://perma.cc/9BUS-EH7H>].

56. Harmetz & Berman, *supra* note 42, at 5; see also 17 C.F.R. § 230.430A(b) (“The information omitted . . . from the form of prospectus filed as part of an effective registration statement, and contained in the form of prospectus filed . . . pursuant to Rule 424(b) . . . shall be deemed to be a part of the registration statement as of the time it was declared

pricing supplements are deemed effective and incorporated absent any SEC review or input.<sup>57</sup> In effect, Rule 424(b)(2) pricing supplements are the final and most detailed piece of the package of disclosure documents distributed to investors of structured notes.

2. *Substance Requirements.* — Mandatory disclosure rules generally impose three overlapping layers of requirements on what must be disclosed and when. One layer consists of SEC rules establishing core information that must always be disclosed. Regulation S-K Rule 501 requires that prospectus supplement covers identify the issuers and underwriters, titles, principal amounts, offering prices, and filing dates.<sup>58</sup> Debt security prospectuses must include information related to maturity, interest, and redemption.<sup>59</sup> Factors that pose particular risks in an offering must also be disclosed.<sup>60</sup> Some of these rules are fairly general and stop short of expressly dictating how or when the core information must be disclosed. This reflects the SEC's principles-based approach of "encourag[ing] registrants to provide . . . disclosure that is more precisely calibrated to their particular circumstances and therefore more meaningful to investors."<sup>61</sup>

Another layer embodies the "fundamental proposition" of securities laws: materiality.<sup>62</sup> Rule 408 requires issuers to include in the registration statement, "[i]n addition to the information expressly required to be included," "such 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."<sup>63</sup> Section 11 of the Securities Act exposes issuers to strict civil liability if "any part of the registration statement, when such part became effective, contained an untrue statement of a material fact or omitted to state a material fact required to

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effective."); id. § 230.430B(e) ("Information omitted from a form of prospectus that is part of an effective registration statement . . . [and] required to be filed . . . pursuant to Rule 424(b) . . . shall be deemed part of and included in the registration statement as of the date such form of filed prospectus is first used after effectiveness.").

57. See Securities Offering Reform, 70 Fed. Reg. at 44,768; Filing Review Process, SEC, <https://www.sec.gov/divisions/corpfin/cffilingreview.htm> [<https://perma.cc/H76L-HQDX>] [hereinafter SEC, Filing Review Process] (last modified Sept. 27, 2019) (noting the SEC's selective review occurs after filing and "does not evaluate the merits of any transaction").

58. 17 C.F.R. § 229.501(b)(1)–(3), (8), (9).

59. See id. § 229.202(b).

60. See id. § 229.105(a).

61. E.g., FAST Act Modernization and Simplification of Regulation S-K, 84 Fed. Reg. 12,674, 12,689 (Apr. 2, 2019) (citing a principles-based approach as the reason for eliminating specific risk factor examples in Rule 105).

62. See Lee, *supra* note 37.

63. 17 C.F.R. § 230.408(a) (emphasis added).

be stated therein or necessary to make the statements therein not misleading.”<sup>64</sup> Issuers can even be criminally liable for violating Rule 10b-5 by “mak[ing] any untrue statement of a material fact or . . . omit[ting] to state a material fact necessary in order to make the statements made . . . not misleading . . . in connection with the purchase or sale of any security.”<sup>65</sup> To satisfy these provisions, issuers must judge whether a reasonable investor would view the nondisclosure of a given fact as “having significantly altered the ‘total mix’ of information made available,” and, if so, disclose that fact.<sup>66</sup>

The third layer consists of SEC guidance specific to structured note disclosure. The most significant guidance in this category came in 2012: After reviewing an array of pricing supplements, the SEC issued guidance regarding how to disclose the pricing and estimated values of their notes.<sup>67</sup> More specifically, the SEC sent comment letters to issuers with a list of suggestions to improve disclosure, including more accurate and balanced titles and the disclosure of the “difference between the [note’s] public offering price . . . and the issuer[’s] . . . estimate of the [note’s] fair value.”<sup>68</sup> The SEC provided more specific guidance in additional exchanges with issuers.<sup>69</sup> Beyond these letters, however, a dearth of note-

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64. Securities Act of 1933 § 11, 15 U.S.C. § 77k(a) (2018).

65. See 17 C.F.R. § 240.10b-5(b)–(c).

66. See *TSC Indus. v. Northway*, 426 U.S. 438, 449 (1977); see also *Basic v. Levinson*, 485 U.S. 224, 240 (1988) (“[M]ateriality depends on the significance the reasonable investor would place on the withheld or misrepresented information.”). Issuers do not have an “affirmative duty to disclose any and all material information.” See, e.g., *Matrixx Initiatives, Inc. v. Siracusano*, 563 U.S. 27, 44 (2011).

67. See Amy M. Starr, Chief, Off. of Cap. Mkt. Trends, SEC, Structured Products—Complexity and Disclosure—Do Retail Investors Really Understand What They Are Buying and What the Risks Are? (May 14, 2015), <https://www.sec.gov/news/speech/speech-amym-starr-structured-products.html> [https://perma.cc/6UX2-BE5Z] [hereinafter Starr, Structured Products Speech].

68. Sample Letter Sent to Financial Institutions Regarding Their Structured Note Offerings Disclosure in Their Prospectus Supplements and Exchange Act Reports, Deloitte, <https://dart.deloitte.com/USDART/home/accounting/sec/sec-material-supplement/sample-letter-sent-financial-institutions-regarding> [https://perma.cc/KSV9-VFEP] [hereinafter SEC, Street Sweep Letter] (last modified Apr. 13, 2012). Other suggestions included disclosing usage of different values in estimating a product’s fair value and revising disclosure to be consistent with the standard that issuers may not disclaim liability for information regarding underlying reference assets. See id.

69. See, e.g., Letter from Amy Starr, Chief, Off. of Cap. Mkt. Trends, SEC, to Anthony J. Horan, Corp. Sec’y, JPMorgan Chase & Co. 2 (Feb. 21, 2013), <https://www.sec.gov/Archives/edgar/data/19617/000000000013009966/filename1.pdf> [https://perma.cc/PTC9-JFEK] (explaining that issuers “may use narrative disclosure to explain how [they] derive [their] valuation of . . . structured note[s]” and listing potentially relevant pricing and valuation-related risk factors, but noting that relevance still depended on facts unique to each offering).

specific guidance has left issuers to fill in the blanks themselves by analogizing to SEC guidance related to other securities. For example, when structured notes link to indexes with only a few components,<sup>70</sup> issuers must determine whether any single component is significant enough to require its own individual disclosure.<sup>71</sup> Despite the frequency with which this issue arises, the SEC has never provided note-specific guidance on the matter.<sup>72</sup> Left to their own devices, issuers look to a no-action letter the SEC sent to Morgan Stanley in 1996, which addressed a similar question but concerned an entirely different security.<sup>73</sup>

3. *Plain English.* — Mandatory disclosure rules also generally govern how an issuer expresses disclosed information. Recognizing that investors do not receive the investor protection of full and fair disclosure if a prospectus fails to communicate information clearly, the SEC promulgated several rules governing the language used in prospectuses.<sup>74</sup> Rule 421(b) requires issuers to present information in a “clear, concise, and understandable manner” by using “short, explanatory sentences” whenever possible.<sup>75</sup> Rule 421(d) elaborates that “[t]o enhance the readability of the prospectus, [issuers] must use plain English principles.”<sup>76</sup> These principles include: “(i) Short sentences; (ii) Definite, concrete, everyday words; (iii) Active voice; (iv) Tabular presentation or bullet lists for complex material, whenever possible; (v) No legal jargon or highly technical business terms; and (vi) No multiple negatives.”<sup>77</sup> And to

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70. This is not a concern with broad-based equity indexes that track the shares of many companies.

71. See Starr, Structured Products Speech, *supra* note 67.

72. In a 2015 speech, Amy Starr stated that the SEC requests disclosure of concentrated exposures of 20% or more and cited rules related to asset-backed securities. See *id.* Structured notes, however, do not qualify as “asset-backed securities” under those rules. See, e.g., 17 C.F.R. § 229.1101(c)(1) (2022) (defining an asset-backed security as “a security that is primarily serviced by the cash flows of a discrete pool of receivables or other financial assets”). This appears to be an implicit acknowledgment and endorsement of the regulation-by-analogy paradigm.

73. See Morgan Stanley & Co., Inc., SEC Staff No-Action Letter, 1996 WL 347869, at \*1 (June 24, 1996) (addressing “disclosure issues relating to registered offerings of securities that are exchangeable . . . for the equity securities”); The 1996 Morgan Stanley Letter: Re-Imagined at the Age of 18, Structured Thoughts (Morrison & Foerster LLP, New York, N.Y.), June 25, 2014, at 1, 1, <https://www.lexology.com/library/document.ashx?g=81f1e45f-02d1-4aca-b47f-f67e37d059d9> [https://perma.cc/K83Q-2TQY] (noting that the letter’s “provisions are often consulted in considering the permissibility of registered notes linked to a single stock, basket of two or more stocks, and even equity indices”).

74. E.g., 17 C.F.R. §§ 230.421, 240.13a-20.

75. *Id.* § 230.421(b)(1).

76. *Id.* § 230.421(d)(1)-(2).

77. *Id.* § 230.421(d)(2)(i)-(vi).

help issuers draft disclosure documents that adhere to these principles and clearly communicate information, the SEC published and distributed a plain English handbook.<sup>78</sup>

4. *Intermediary Obligations.* — Broker-dealers engaged in the distribution of structured notes are also subject to some mandatory disclosure requirements.<sup>79</sup> Under Regulation Best Interest (Reg BI), broker-dealers must “act in the best interest of the retail customer” when “making a recommendation of any securities transaction or investment

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78. See Off. of Investor Educ. & Assistance, SEC, A Plain English Handbook: How to Create Clear SEC Disclosure Documents 8–9, 17, app. A (1998), <https://www.sec.gov/pdf/handbook.pdf> [<https://perma.cc/A7P5-8Q3Z>] [hereinafter SEC, Plain English Handbook] (summarizing the plain English requirements and providing disclosure language recommendations).

79. The Exchange Act defines a broker as “any person engaged in the business of effecting transactions in securities for the account of others” and a dealer as “any person engaged in the business of buying and selling securities . . . for such person’s own account through a broker or otherwise.” 15 U.S.C. § 78(c)(4)(A)–(5)(A) (2018). Broker-dealers are required to register with FINRA before “effect[ing] any transactions” or “induc[ing] . . . the purchase or sale of, any security.” Id. § 78o(a)(1); see also Guide to Broker-Dealer Registration, SEC (Apr. 2008), <https://www.sec.gov/reportspubs/investor-publications/divisionsmarketregbdguidehtm.html> [<https://perma.cc/2Z7P-XTVR>].

Broker-dealers play an intricate role in the distribution of structured notes. They frequently enter into underwriter agreements with issuers to distribute structured notes to investors or to third-party broker-dealers. See Off. of Compliance Inspections & Examinations, SEC, Broker-Dealer Controls Regarding Retail Sales of Structured Securities Products 1 (2015), <https://www.sec.gov/about/offices/ocie/risk-alert-bd-controls-structured-securities-products.pdf> [<https://perma.cc/6AAH-8D7G>]; Structured Notes Offered on an Agency Basis, Structured Thoughts (Morrison & Foerster LLP, New York, N.Y.), May 31, 2016, at 1, 2, <https://www.lexology.com/library/document.ashx?g=fc4cd2db-7784-4f16-945a-eca91cedb9a4> [<https://perma.cc/N97A-CUV2>] (describing multilayer distribution chains). Some are even affiliates of issuers. See Off. of Compliance Inspections & Examinations, SEC, Staff Summary Report on Issues Identified in Examinations of Certain Structured Securities Products Sold to Retail Investors 3 (2011), <https://www.sec.gov/news/studies/2011/ssp-study.pdf> [<https://perma.cc/5ZWM-KMU2>] [hereinafter OCIE Report]. Registered Investment Advisors (RIAs) are also actively engaged in structured note distribution but are not often the focus of regulators. Under the Investment Advisors Act of 1940, RIAs owe fiduciary duties of care and loyalty to their customers that broker-dealers do not owe. See Commission Interpretation Regarding Standard of Conduct for Investment Advisors, Investment Advisors Act Release No. 5248, 84 Fed. Reg. 33,669, 33,670 (July 12, 2019); see also Sec. & Exch. Comm’n v. Cap. Gains Rsch. Bureau, Inc., 375 U.S. 180, 191–92 (1963) (“The Investment Advisors Act of 1940 thus reflects a congressional recognition ‘of the delicate fiduciary nature of an investment advisory relationship’ . . . .” (quoting 2 Louis Loss, Securities Regulation 1412 (2d ed. 1961))). RIAs and broker-dealers also have “different types of relationships with investors, offer different services, and have different compensation models.” Standard of Conduct for Investment Advisors, 84 Fed. Reg. at 33,669.

strategy involving securities” to that retail customer.<sup>80</sup> To satisfy the best interest obligation, broker-dealers are under a disclosure subobligation to provide “in writing, full and fair disclosure of . . . [a]ll material facts relating to the scope and terms of the relationship with the retail customer,” including “any material limitations on the securities or investment strategies involving securities that may be recommended to the retail customer.”<sup>81</sup> This obligation is critically important when broker-dealers “recommend securities and investment strategies that are complex or risky.”<sup>82</sup> Accordingly, broker-dealers must “apply heightened scrutiny” to understand and communicate to investors the “terms, features, and risks” relevant to structured notes they recommend.<sup>83</sup>

## II. INNOVATION, COMPLEXITY, AND INFORMATION LOSS IN TODAY’S MARKET

Part II examines an issue left unaddressed by the legal requirements of mandatory disclosure discussed in Part I: the extent to which disclosed information reaches investors who then understand and internalize it when investing in a structured note. Disclosed information must be understood by investors to serve an investor-protection function,<sup>84</sup> but oftentimes disclosed information fails to fully fulfill that role. This Part synthesizes the theoretical framework linking financial innovations with sources of complexity that may fuel information loss and impair disclosure and analyzes today’s structured notes market within that framework.

### A. *A Market Transformed*

Today’s structured notes market is radically different than the market that existed in the wake of the GFC. In 2011, U.S. sales in structured notes totaled around forty-five billion dollars across 9,631 individual structured

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80. 17 C.F.R. § 240.15l-1(a)(1). Reg BI came in response to a post-GFC SEC investigation that found that broker-dealers often recommended products that were unsuitable to retail investors. See OCIE Report, *supra* note 79, at 3. This issue remains a concern today. See, e.g., FINRA, 2019 Report on FINRA Examination Findings and Observations 4 (2019), <https://www.finra.org/sites/default/files/2019-10/2019-exam-findings-and-observations.pdf> [<https://perma.cc/S3QS-VS4Q>] (“Some firms did not have adequate systems of supervision to review that recommendations were suitable in light of a customer’s individual financial situation[,] . . . investment experience, risk tolerance, [and] time horizon . . .”).

81. 17 C.F.R. § 240.15l-1(a)(2)(i). Broker-dealers must also satisfy care, conflict of interest, and compliance sub-obligations. *Id.* § 240.15l-1(a)(2)(ii)–(iv).

82. See Regulation Best Interest, 84 Fed. Reg. 33,318, 33,376 (July 12, 2019).

83. See *id.*

84. See *id.* at 33,365.

notes.<sup>85</sup> Just ten years later, the market ended 2021 with total sales exceeding 100 billion dollars over 31,553 individual structured notes.<sup>86</sup> In other words, total sales and volume of structured notes sold in the U.S. market increased by over 100% and around 227%, respectively, in just ten years. Preferences for underliers and payoff structures have also shifted. For example, baskets of diverse indexes have overtaken single indexes as the most popular underlier option.<sup>87</sup>

Driving this transformation, at least in part, is a combination of favorable economic and demographic trends. In the decade following the GFC, fixed-income investments offered historically low interest rates and returns.<sup>88</sup> Hungry for yield, retail investors turned to alternative investments like structured notes,<sup>89</sup> attracted by the ability to customize underliers and payoff structures to fit idiosyncratic investment objectives.<sup>90</sup> Furthermore, a core investor demographic in structured notes—investors in or nearing retirement—has grown rapidly since the GFC.<sup>91</sup> Investors with shorter time horizons tend to shift toward less volatile, fixed-income options like structured notes.<sup>92</sup> As this population increases, so too does the demand for structured notes.<sup>93</sup>

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85. U.S.: Structured Products Through the Decade, SRPInsight, Mar./Apr. 2022, at 10, 10.

86. Id.

87. Id. at 10–11.

88. See John Weinberg, *The Great Recession and Its Aftermath*, Fed. Rsrv. Hist. (Nov. 22, 2013), <https://www.federalreservehistory.org/essays/great-recession-and-its-aftermath> [<https://perma.cc/VJN6-JHYR>] (noting that low interest rates resulted, in part, from a low federal funds rate that placed indirect downward pressure on the interest rates on longer-term loans and investments).

89. See Margarida Abreu & Victor Mendes, *The Investor in Structured Retail Products: Advice Driven or Gambling Oriented?*, 17 *J. Behav. & Experimental Fin.* 1, 1 (2018).

90. See Alberto Burchi & Paola Musile Tanzi, *Are Structured Products a Sustainable Financial Innovation? A Lesson From the European Markets*, 2 *J. Fin. Persps.* 145, 149 (2014).

91. See Press Release, U.S. Census Bureau, *65 and Older Population Grows Rapidly as Baby Boomers Age* (June 25, 2020), <https://www.census.gov/newsroom/press-releases/2020/65-older-population-grows.html> [<https://perma.cc/TY9T-33AE>] (noting the rapid growth of the nation's sixty-five-and-older population by over a third, or 34.2%, during the past decade).

92. See Jennifer E. Bethel & Allen Ferrell, *Policy Issues Raised by Structured Products, in New Financial Instruments and Institutions: Opportunities and Policy Challenges* 167, 184 (Yasuyuki Fuchita & Robert E. Litan eds., 2007).

93. Cf. id. (“[E]lderly investors who need current income... make easy prey for unscrupulous brokers.”). This trend will almost certainly continue. One-fifth of Americans are expected to reach retirement age by 2030. See Jonathan Vespa, Lauren Medina & David M. Armstrong, U.S. Census Bureau, *Demographic Turning Points for the United States: Population Projections for 2020 to 2060*, at 1 (2020), <https://www.census.gov/content/dam/Census/library/publications/2020/demo/p25-1144.pdf> [<https://perma.cc/5MWE-48RP>].

New financial technologies also fueled this post-GFC transformation. Advances in digital investing technology have “driven an increase in investment options for retail investors . . . and changes in the channels through which retail investors purchase and sell securities, including complex products.”<sup>94</sup> “Where once it was nearly impossible for a retail investor to trade without the aid of a registered representative or investment adviser,” retail investors can now purchase structured notes and other complex securities directly.<sup>95</sup> This effectively circumvents “the required protections that apply when they receive recommendations or advice from a broker . . . who must understand [them].”<sup>96</sup>

Perhaps the most significant innovations specific to the structured notes market are the proliferation of digital platforms and the evolution of proprietary indexes.<sup>97</sup> First, digital platforms simplify, streamline, and reduce the cost involved in the structured note trade process by offering users centralized marketplaces and automated services such as post-trade lifecycle management.<sup>98</sup> To issuers, these platforms are key avenues for

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94. Jay Clayton, Dalia Blass, William Hinman & Brett Redfearn, Joint Statement Regarding Complex Financial Products and Retail Investors, SEC (Oct. 28, 2020), <https://www.sec.gov/news/public-statement/clayton-blass-hinman-redfearn-complex-financial-products-2020-10-28> [<https://perma.cc/ESQ3-WSAE>]; Kara M. Stein, Comm'r, SEC, Increasing Product Complexity: What's at Stake? (Feb. 23, 2018), <https://www.sec.gov/news/speech/stein-sec-speaks-increasing-product-complexity> [<https://perma.cc/H2CM-UV24>] (“In today's world, virtually anyone—retail investors alongside financial professionals—has access to any number of different products, services, strategies, and exposures. And if they can't get direct access, there's sure to be a vehicle that gets them there indirectly.”).

95. Clayton et al., *supra* note 94; see also, e.g., Akane Otani & Sebastian Pellejero, ‘Bankrupt in Just Two Weeks’—Individual Investors Get Burned by Collapse of Complex Securities, Wall St. J. (June 1, 2020), <https://www.wsj.com/articles/bankrupt-in-just-two-weeks-individual-investors-get-burned-by-collapse-of-complex-securities-11591020059> (on file with the *Columbia Law Review*) (describing retail investors who purchased a leveraged exchange-traded note that bet on companies that invest in the mortgage market on a free mobile trading app); Structured Products, Fidelity, <https://www.fidelity.com/fixed-income-bonds/structured-products> [<https://perma.cc/MAD9-3KK4>] (last visited Jan. 10, 2022) (providing retail customers direct access to structured notes).

96. Clayton et al., *supra* note 94.

97. E.g., About Luma Financial Technologies: Our Mission, Luma Fin. Techs., <https://lumafintech.com/about-luma-financial-technologies/> [<https://perma.cc/CXH9-9RRX>] (last visited Nov. 1, 2021) (catering to private bank clients); Who We Are, SIMON, <https://simon.io/about/> [<https://perma.cc/3HSF-8EJT>] (last visited Nov. 1, 2021) (catering to independent broker-dealers).

98. Natasha Rega-Jones, Platforms Bring Structured Products to the Masses, Risk.net (May 2, 2022), <https://www.risk.net/derivatives/7947241/platforms-bring-structured-products-to-the-masses> (on file with the *Columbia Law Review*).

future sales and customer growth.<sup>99</sup> In fact, issuers themselves are some of the largest investors in these platforms<sup>100</sup> and offer their notes across multiple platforms.<sup>101</sup> To broker-dealers and financial advisors, they offer unprecedented access, functionality, and resources to purchase and track structured notes for clients.<sup>102</sup> Above all, these platforms can support the trading of both bespoke payoff structures as well as “pre-packaged generic trades that structured product issuers offer to the market every month,” “further democratising the market as trading size is no longer a barrier to entry for new players.”<sup>103</sup> Second, issuers have innovated with increasingly diverse and targeted proprietary indexes.<sup>104</sup> Proprietary indexes are indexes created by issuers themselves—either by an internal group or an affiliate—or third-party sponsors with whom issuers contract.<sup>105</sup> By creating their own indexes, issuers can offer structured notes that cater to increasingly diverse and idiosyncratic investment preferences.<sup>106</sup> Proprietary indexes also help issuers avoid the commoditization of their offerings: Indexes with more

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99. See *id.*

100. E.g., *Who We Are*, *supra* note 97 (listing as investors Barclays, Credit Suisse, Goldman Sachs, JPMorgan, and Wells Fargo); see also Daisy Maxey, *Advisers Gain Access to Complex Structured Products*, *Wall St. J.* (Mar. 13, 2013), <https://www.wsj.com/articles/SB10001424127887323393304578358413092621452> (on file with the *Columbia Law Review*); Danielle Andrus, *Fidelity Partners With Morningstar, Goldman, CAIS to Bring Alts to Advisors*, *ThinkAdvisor* (Oct. 28, 2013), <https://www.thinkadvisor.com/2013/10/28/fidelity-partners-with-morningstar-goldman-cais-to-bring-alts-to-advisors/> [https://perma.cc/TCN9-QM9].

101. See Rega-Jones, *supra* note 98.

102. *Id.*

103. *Id.* (noting that the average trading size of a structured note has dropped significantly, reflecting the fact that platforms “allow[] end-investors to pick their own deal terms and customise the trade however they would like”).

104. *FSMA Bans 12 Structured Products, Detects KID Shortcomings*, SRPInsight, July/Aug. 2021, at 5, 5 (“The trend to use proprietary indices has been visible since 2013 (with the exception of 2018 and 2019) and in 2020 was even sharper: [B]y sales volume, approximately half of the structured products issued was linked to a proprietary index in Q4 2020.”); Starr, *Structured Products Speech*, *supra* note 67 (“[W]e have observed . . . the increasing use of complex or proprietary indices or non-security assets.”).

105. See Bradley Berman, Remmelt Reigersman & Patrick Scholl, *Mayer Brown, Proprietary Indices, US and European Considerations 3–4* (2021), <https://www.mayerbrown.com/-/media/files/perspectives-events/events/2021/02/reverseinquiries-workshopproprietary-indices-us-considerations-and-european-considerations.pdf> [https://perma.cc/X77F-FLAN].

106. See Yakob Peterseil, *How Wall Street Finds New Ways to Sell Old, Opaque Products to Retail Investors*, Bloomberg (Jan. 21, 2016), <https://www.bloomberg.com/news/articles/2016-01-21/how-wall-street-finds-new-ways-to-sell-old-opaque-products-to-retail-investors> (on file with the *Columbia Law Review*) (describing how specialized indexes allow “products that regulators have questioned for their complexity, fees and actual returns” to be sold “in places those regulators don’t reach”).

intricate methodologies or asset allocations can help issuers maintain a competitive advantage in the ever-crowded market.

### B. Innovation, Complexity, and Information Loss

The causal connection between certain financial innovations, the proliferation of sources of complexity, and the rise of the problematic phenomenon of information loss is well established.<sup>107</sup> In perhaps the seminal piece on this topic, *Fragmentation Nodes*, Professor Kathryn Judge provided evidence from the GFC showing that mortgage-backed security (MBS) and collateralized debt obligation (CDO) transactions contributed to systemic risk through information loss with disastrous consequences.<sup>108</sup> More specifically, Professor Judge demonstrated that the financial innovation of securitization created “fragmentation nodes,” or new points of contractual arrangements,<sup>109</sup> that introduced several new sources of complexity in MBS or CDO transactions.<sup>110</sup> The spread of fragmentation nodes in turn led to “a pervasive loss of information about the quality of the underlying home loans and the value of MBS and CDO securities backed by them,” which Professor Judge concluded “contributed to the paralyzing uncertainty” and fueled a “feedback loop” of sinking home prices, rising mortgage defaults, and rising foreclosures.<sup>111</sup>

1. *Innovation.* — Financial innovations are both an “important driver of the dynamism of modern finance”<sup>112</sup> and a “natural outcome of a competitive economy.”<sup>113</sup> They include new theoretical insights, technological advancements, and the advent of new financial markets, institutions, and instruments.<sup>114</sup> In recent years, for example, innovations

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107. E.g., Awrey, *supra* note 21, at 238 (“[C]omplexity and innovation can be observed . . . at almost every significant step along the road to the GFC.”); Judge, *Fragmentation Nodes*, *supra* note 1, at 663.

108. Judge, *Fragmentation Nodes*, *supra* note 1, at 690 (“[E]vidence from the 2007–2009 financial crisis show[s] that MBS and CDO transactions did contribute to systemic risk through information loss and stickiness . . . ”).

109. *Id.* at 659 (“Securitization entails the pooling of a group of cash-producing assets, like home loans, into a newly created entity against which multiple classes of securities are issued.”). It arose as a way for financial institutions to escape regulatory burdens by shifting financing activities out of regulated banks and into the capital markets. See *id.*

110. *Id.* at 661.

111. *Id.* at 661–62.

112. Awrey & Judge, *supra* note 4, at 2305.

113. Stephen A. Lumpkin, *Regulatory Issues Related to Financial Innovation*, 2009 *OECD J.: Fin. Mkt. Trends* 91, 92 (“[Financial innovations] are neither inherently good nor inherently bad.”).

114. Awrey & Judge, *supra* note 4, at 2305–06 (attributing the rise of shadow banking after the GFC to technological innovations including “creative new uses of legal structures,

in distributed ledger and blockchain, high-frequency trading, and the use of algorithms and artificial intelligence have captured national attention.<sup>115</sup> And financial innovations can arise both as a demand-side response to market imperfections and as a supply-side response to market incentives.<sup>116</sup> On one side, market imperfections such as regulation, taxes, high transaction costs, and information asymmetries “generate demand for financial innovations, which promise, among other things, greater choice, lower costs, enhanced liquidity and more effective risk management.”<sup>117</sup> On the other, financial institutions and intermediaries may drive innovations in response to profit opportunities, genuine market demand, or external regulatory requirements.<sup>118</sup>

That financial innovations have benefited market participation and the economy writ large is indisputable.<sup>119</sup> Some have even argued that financial regulation assumes “that financial innovation is by definition beneficial, since market discipline will winnow out any unnecessary or value destructive innovations.”<sup>120</sup> But financial innovations also have a remarkable potential for destruction. By definition, they can “undermin[e] . . . assumptions, chang[e] relationships, denatur[e] products and markets, and seep[] around regulatory definitions and

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new modeling techniques, and massive increases in computing power that allowed the collection and analysis of vast amounts of data about creditor and asset quality”); see also Fin. Innovation Working Grp., Fin. Rsch. Advisory Comm., Financial Innovation Survey of FRAC Members 4–9 (2017), [https://www.financialresearch.gov/frac/files/OFR\\_FRAC-meeting\\_working-group\\_Finan-Innov\\_02-23-2017.pdf](https://www.financialresearch.gov/frac/files/OFR_FRAC-meeting_working-group_Finan-Innov_02-23-2017.pdf) [https://perma.cc/MX6H-VYVH] [hereinafter FRAC Innovation Survey] (noting as a proposed definition of “financial innovation” “[t]he sudden appearance of a new kind of financial contract, or sudden increase in the size of the market for a new kind of financial contract”).

115. See FRAC Innovation Survey, *supra* note 114, at 5.

116. See Awrey, *supra* note 21, at 260–67.

117. Id. at 260. For example, investor demand for lowering the cost of diversification and restraining the potential uses of investor principal sparked the birth of mutual funds and ETFs. See id. at 262; Judge, *Investor-Driven Financial Innovation*, *supra* note 2, at 326–27.

118. See Awrey, *supra* note 21, at 263.

119. See FRAC Innovation Survey, *supra* note 114, at 2 (“These innovations can reduce costs and contribute to growth in the industry.”); Lumpkin, *supra* note 113, at 94 (“[A] valid case can probably be made that the effect of innovations for the global economy has, on net, been positive over the longer term.”).

120. E.g., Cristie Ford, Principles-Based Securities Regulation in the Wake of the Global Financial Crisis, 55 McGill L.J. 257, 294 (2010) (internal quotation marks omitted) (quoting Fin. Servs. Auth., The Turner Review: A Regulatory Response to the Global Banking Crisis 49 (2009), [http://www.actuaries.org/CTTEES\\_TFRISKCRISIS/Documents/turner\\_review.pdf](http://www.actuaries.org/CTTEES_TFRISKCRISIS/Documents/turner_review.pdf) [https://perma.cc/6Y8P-JCMQ]).

boundaries.”<sup>121</sup> As the GFC demonstrated, the rise of new innovations often precedes periods of heightened market fragility and financial crises.<sup>122</sup> Even more unnerving is the fact that innovation can occur incrementally, obfuscating the ability of market participants and regulators to observe these negative effects spreading in real time.<sup>123</sup> Accordingly, private sector innovation represents a “profound challenge that regulators must confront.”<sup>124</sup>

2. *Complexity.* — Complexity defines features of securities or financial markets that are “hard to understand or deal with.”<sup>125</sup> It can be understood as the function of two variables: (1) the costs incurred by actors in searching for, acquiring, analyzing, and understanding information; and (2) the “cognitive and temporal constraints” on actors’ abilities to process such information.<sup>126</sup> In this sense, financial innovations can lead to more complex securities and financial markets anywhere information becomes more expensive or more difficult to acquire and understand. Professor Dan Awrey identified six related and common sources of complexity across the financial system: (1) advances in technology; (2) opacity, defined as both the nonavailability of information and the “information thicket” generated by an overwhelming volume of data; (3) greater integration of financial markets and institutions; (4) more fragmented, or attenuated, informational and economic relationships between counterparties; (5) denser regulatory requirements; and (6) the perpetual need to incur more information costs as prior advancements in understanding alter market dynamics.<sup>127</sup>

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121. Cristie Ford, A Regulatory Roadmap for Financial Innovation, in *Routledge Handbook of Financial Technology and Law* 62, 62 (Iris H-Y Chiu & Gudula Deipenbrock eds., 2021) [hereinafter Ford, Regulatory Roadmap].

122. See FRAC Innovation Survey, *supra* note 114, at 2.

123. See Judge, Fragmentation Nodes, *supra* note 1, at 687, 723 (noting that the “incremental nature of the processes through which financial innovations become highly complex” “may result in market participants and regulators alike becoming overly accepting of innovations”).

124. Ford, Regulatory Roadmap, *supra* note 121, at 62.

125. Complexity, Black’s Law Dictionary (11th ed. 2019); see also Schwarcz, Regulating Complexity, *supra* note 21, at 214 (“Complexity in this sense derives from the intricate combining of parts, creating complications that increase the likelihood that failures will occur and diminish the ability of investors and other market participants to anticipate and avoid these failures.”).

126. See Awrey, *supra* note 21, at 241.

127. See *id.* at 245–58. Professor Judge similarly identified four sources of complexity inherent in fragmentation nodes: “(1) fragmentation, (2) the creation of contingent and dynamic economic interests, (3) a latent competitive tendency among the tranches, and (4) the lengthening of the chain separating investor and investment.” Judge, Fragmentation Nodes, *supra* note 1, at 690.

3. *Information Loss.* — As the previous section explained, complexity increases the informational burden that parties to a securities transaction face. This is not intrinsically harmful. Inherent in every securities transaction is an information imbalance: the party selling the security possesses more information about the security than the purchaser does.<sup>128</sup> Because of this asymmetry, a certain amount of “information is lost in every transaction.”<sup>129</sup> Complexity does become a problem, however, when the “nature and magnitude of [this] information loss”<sup>130</sup> becomes sufficiently great that it can lead to failures of investing standards and financial market practices.<sup>131</sup>

One such failure can occur when complexities of securities impair disclosure.<sup>132</sup> “[C]omplexity increases the pool of potentially pertinent information and the costs of acquiring that information . . . .”<sup>133</sup> This can “deprive investors and other market participants of the understanding needed for markets to operate effectively.”<sup>134</sup> For example, in the face of this informational burden, investors are more likely to inaccurately assess securities prices,<sup>135</sup> leading them to pay more for securities than the worth of the corresponding risks while simultaneously being less able to “withstand the associated losses should the risk become manifest.”<sup>136</sup> In fact, even if “all information about a complex structure is disclosed,” the higher informational and cost burden might preclude investors from truly

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128. Judge, *Fragmentation Nodes*, supra note 1, at 690 (citing Bernard S. Black, *Information Asymmetry, the Internet, and Securities Offerings*, 2 J. Small & Emerging Bus. L. 91, 92 (1998)). To secure the sale, a seller must “convey sufficient information to a potential investor to convince the investor that the expected returns justify the price being asked.” Id. Conveying information as a seller and processing information as an investor are both resource intensive, and both parties bear the costs of the transaction that allows the information asymmetry to persist. Id.

129. Id.

130. Id. Information asymmetries can “prevent otherwise efficient transfers.” Kathryn Judge, *Information Gaps and Shadow Banking*, 103 Va. L. Rev. 411, 417 (2017) [hereinafter Judge, *Information Gaps*] (citing George A. Akerlof, *The Market for ‘Lemons’: Quality Uncertainty and the Market Mechanism*, 84 Q.J. Econ. 488, 495–96 (1970)).

131. See Schwarcz, *Regulating Complexity*, supra note 21, at 220.

132. Id. at 221.

133. See Judge, *Information Gaps*, supra note 130, at 419.

134. Schwarcz, *Regulating Complexity*, supra note 21, at 221.

135. See id. at 214, 222.

136. See Judge, *Fragmentation Nodes*, supra note 1, at 692, 696 (explaining that, because investors did not completely understand information pertinent to the MBSs and CDOs they acquired, the rapid spread of fragmentation nodes backed by home loans fueled an equally rapid and systematic loss of information about the quality of the underlying loans and the securities backed by them).

appreciating the underlying structure.<sup>137</sup> This failure was at the root of the GFC. Even though “virtually all of the risks giving rise to the collapse of the market for [MBSs] appear to have been disclosed,” the complexity of MBSs made the risks difficult to understand.<sup>138</sup>

Another failure can occur when complexities of securities obfuscate consequences. The “parties reviewing, or even structuring,” a highly complex security might fail to appreciate and properly disclose all relevant considerations or risks associated with the security.<sup>139</sup> Similarly, investors and issuers alike might fail to comprehend the mechanics of a complex security’s payoff structure when the payoff is not “linearly” related to the prices of its underlying assets.<sup>140</sup> Consequences may be even more obfuscated when the heightened informational burden arises from introducing complexities that are fundamentally new in substance.<sup>141</sup>

### C. Challenges to Structured Note Disclosure

This section identifies several ways that increasing complexity in today’s structured notes market could impair the mandatory disclosure regime’s investor-protection function. In particular, it focuses on the innovations and demographic trends highlighted in section II.A that have “generate[d] new questions and render[ed] old assumptions obsolete”<sup>142</sup> in a market where, according to regulators, “[c]omplexities abound.”<sup>143</sup>

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137. See Schwarcz, *Regulating Complexity*, supra note 21, at 221.

138. See id. at 222. In 2010, the SEC alleged that Goldman Sachs designed a mortgage-backed synthetic CDO “to fail” so “one of its clients[] could profit from their short positions on the reference portfolio.” Bennet, supra note 21, at 829. This surprised the industry because the conflict “had in fact been disclosed” in offering materials given to investors. Id. at 830–31; see also Goldman Sachs, ABACUS 2007-AC1: \$2 Billion Synthetic CDO 8 (2007), <https://www.math.nyu.edu/~avellane/ABACUS.pdf> [<https://perma.cc/67FA-T2U3>].

139. See Schwarcz, *Regulating Complexity*, supra note 21, at 223–24.

140. Id. at 224. The CDOs that helped cause the GFC were, for example, backed by diverse underlying assets, but there existed an “underlying correlation in the subprime mortgage loans backing” the securities that went unnoticed by market participants. See id. at 223 (internal quotation marks omitted) (quoting Schwarcz, *Protecting Financial Markets*, supra note 1, at 403).

141. See Judge, *Fragmentation Nodes*, supra note 1, at 691 (writing that no party may be adequately incentivized to fully understand new information).

142. Donald C. Langevoort, *The SEC as a Lawmaker: Choices About Investor Protection in the Face of Uncertainty*, 84 Wash. U. L. Rev. 1591, 1606–07 (2006) (“[C]onstant innovation in the form of new financial products and market mechanisms, coupled with fluctuations in exogenous economic conditions and emergent generations of new investors, persistently generate new questions and render old assumptions obsolete.”).

143. Stein, supra note 94.

1. *Overwhelming Issuance Volumes.* — The quality of structured note disclosure is a product of the attention and resources that issuers are able to commit to its drafting. The unprecedented volume of unique structured note transactions in today’s market—over 20,000 more annual issuances in 2021 than 2011<sup>144</sup>—has forced issuers to balance a wildly popular source of funding with internal time, personnel, and resource constraints. A recent incident involving Barclays may serve as a warning. In March 2022, Barclays announced that the structured notes it offered and sold under its shelf registration statement in the period of just one year exceeded the aggregate amount for which it registered by over fifteen billion dollars.<sup>145</sup> In other words, Barclays illegally sold over fifteen billion dollars in structured notes that it is now required to offer to repurchase at their original prices. More concerning than the sheer size of the misstep, arguably, is the fact that no one at Barclays realized it met and exceeded its shelf registration amount for a whole year.<sup>146</sup> This systematic failure to track the structured notes that it sold is a warning about the byproducts of unprecedented issuance volumes. In 2021, Barclays made 5,468 Rule 424(b)(2) filings on EDGAR, up 330% from the 1,649 Rule 424(b)(2) filings it made in 2011.<sup>147</sup> It is not a far leap to conclude from this incident that, amid the issuance volume increase, Barclays devoted less time and attention to the quality of disclosure in those filings.

The Barclays incident is also an indictment of the SEC, which failed to realize that the issuer had been illegally selling structured notes for a whole year.<sup>148</sup> The SEC enforces mandatory disclosure rules in two main ways: (1) It proactively reviews disclosure documents; and (2) it brings enforcement actions against issuers and broker-dealers on behalf of investors for alleged

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144. See *supra* notes 85–86 and accompanying text.

145. Matt Levine, Opinion, *Barclays Sold Too Many Notes*, Bloomberg (Mar. 28, 2022), <https://www.bloomberg.com/opinion/articles/2022-03-28/barclays-sold-too-many-notes> (on file with the *Columbia Law Review*) (“In August 2019, [Barclays] registered US\$20.8bn in maximum aggregate offering price of securities (the ‘Registered Amount’) and has exceeded the Registered Amount by approximately US\$15.2bn.” (internal quotation marks omitted) (quoting Barclays, *Impact of Over-Issuance Under BBPLC US Shelf 1* n.1 (2022), <https://home.barclays/content/dam/home-barclays/documents/investor-relations/IRNewsPresentations/2022News/20220328-Impact-of%20over-issuance-under-BBPLC-US-Shelf.pdf> [<https://perma.cc/2M6P-CLUV>])).

146. See *id.*

147. See EDGAR Indexes: Full and Quarterly, SEC, <https://www.sec.gov/Archives/edgar/full-index/> [<https://perma.cc/TMW5-2668>] (last modified Sept. 2, 2022) (providing, in downloadable data files, indexes with identifying information corresponding to all 424(b)(2) issuer filings between 2011 to 2021).

148. See Levine, *supra* note 145.

disclosure violations.<sup>149</sup> The potency of both approaches is at risk. First, the SEC's Division of Corporate Finance only "selectively reviews filings" to "monitor and enhance compliance with applicable disclosure . . . requirements."<sup>150</sup> The market's unprecedented growth increasingly strains the SEC's ability to review filings apace. Furthermore, the extent of innovation in underliers and payoff structures means that the disclosures the SEC periodically reviews may be unrepresentative or unhelpful by the time the SEC distributes comments to issuers.<sup>151</sup> Second, the "retailization" of structured notes directly increases the potential pool of disclosure-related legal claims. The SEC likely does not have the resources and personnel to investigate an expanding body of claims, especially if, as a result of the "longest ever bull market for stocks"<sup>152</sup> that followed the GFC, the SEC has focused its limited resources elsewhere.<sup>153</sup>

2. *Accuracy and Completeness.* — Increasing complexity can fuel information loss by increasing the amount of information that issuers must analyze, understand, and express.<sup>154</sup> One source of information loss might be what Professor Henry T.C. Hu called "true misunderstandings."<sup>155</sup> According to Professor Hu, mandatory disclosure is an "intermediary depiction model" in which an issuer stands between an objective reality—here, the reality would consist of the terms and relevant considerations of

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149. See, e.g., Press Release, SEC, UBS to Pay \$19.5 Million Settlement Involving Notes Linked to Currency Index (Oct. 13, 2015), <https://www.sec.gov/news/pressrelease/2015-238.html> [<https://perma.cc/A6HK-X6FJ>] (announcing a \$19.5 million settlement with UBS related to misstatements in structured note prospectuses). For the order instituting the action and settlement, see UBS AG, Order Instituting Cease and Desist Proceedings, Securities Act Release No. 9961, at 5–6 (Oct. 13, 2015), <https://www.sec.gov/litigation/admin/2015/33-9961.pdf> [<https://perma.cc/D96V-ZBMQ>].

150. See SEC, Filing Review Process, *supra* note 57 (noting that the Division concentrates specifically on disclosure that appears to be "materially deficient in explanation or clarity" or that "conflict[s] with Commission rules").

151. Cf. Awrey, *supra* note 21, at 289 ("[T]he sheer volume of information available . . . combined with the rapid pace of change . . . can overwhelm the powerful incentives of even the most sophisticated market participants. Regulators, likewise, have struggled with what is, in effect, information overload."); Awrey & Judge, *supra* note 4, at 2311 ("[T]he incredible complexity and dynamism of finance, together with the finite resources from regulators, [impose] high information and other costs . . .").

152. See Akane Otani, Bull Market Faces Tough Test as It Turns 11, *Wall St. J.* (Mar. 8, 2020), <https://www.wsj.com/articles/bull-market-faces-tough-test-as-it-turns-11-11583609961> (on file with the *Columbia Law Review*).

153. Cf. Steven L. Schwarcz, Controlling Financial Chaos: The Power and Limits of Law, 2012 Wis. L. Rev. 815, 822 ("[D]uring periods of relative economic stability . . . market participants may under-assess the risk of low-probability adverse market events.").

154. See Hu, *supra* note 21, at 1609 ("[E]ven a well-intentioned intermediary may not truly understand . . . the objective reality.").

155. See *id.*

a structured note—and the investor.<sup>156</sup> The issuer must assemble, interpret, understand, depict, and transmit that reality to investors via disclosure.<sup>157</sup> But increasing complexity in the underlying mechanics of the reality increases the likelihood that issuers will misunderstand and inaccurately depict that reality.

This risk is particularly present when structured notes link to proprietary indexes.<sup>158</sup> Proprietary indexes “use highly complex formulas to determine how the index is valued, including fees and costs that are embedded into the index performance.”<sup>159</sup> In-house or outside counsel, to whom the duty of drafting disclosure falls, may lack sufficient expertise to completely understand and accurately depict these methodologically complex indexes. Information may be lost merely by virtue of distilling these methodologies into the short and simple sentences of plain English.<sup>160</sup> Accelerating issuance volumes also place heightened pressure on lawyers who must draft and finalize disclosure documents to satisfy both internal issuer and regulatory timelines.<sup>161</sup>

3. *Information Overload.* — Paradoxically, disclosure may also be impaired at the creation stage when issuers provide too much information. As structured notes feature more varied payoff structures and underlier combinations, issuers may be incentivized to overdisclose information that is neither relevant nor useful for investors.<sup>162</sup> The resulting “information thicket” is more costly for investors to navigate.<sup>163</sup> Over-disclosing could, for example, be a strategy for avoiding the civil and criminal liability that

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156. See *id.* at 1608.

157. See *id.*

158. See *supra* notes 106–111 and accompanying text.

159. Starr, *supra* note 67.

160. See Hu, *supra* note 21, at 1637 (“The limits of the English language can prevent even the most careful and talented lawyer from coming close to the mathematical concept . . . .”); Starr, *supra* note 67 (“I’ve heard even learned counsel say that they find certain indices or notes hard to describe narratively . . . .”).

161. See Hu, *supra* note 21, at 1637.

162. See *Basic, Inc. v. Levinson*, 485 U.S. 224, 231 (1988) (“[A]n overabundance of information . . . [might] lead management ‘simply to bury the shareholders in an avalanche of trivial information—a result that is hardly conducive to informed decisionmaking.’” (quoting *TSC Indus., Inc. v. Northway, Inc.*, 426 U.S. 438, 448–49 (1976))); cf. *Omri Ben-Shahar & Carl E. Schneider, The Failure of Mandated Disclosure*, 159 U. Pa. L. Rev. 647, 692–93 (2011) (“When a mandate is stated broadly, disclosers might think that duty requires—or prudence demands—disclosing *everything*.”).

163. See *Bartlett, supra* note 21, at 57 (“[S]imply disseminating information to the public domain is unlikely to have significant efficacy . . . .”).

arises from misstating or omitting material information from prospectuses.<sup>164</sup> This strategy could become particularly appealing as the informational demands associated with structured note volumes begin to exceed issuers' financial and personnel limits.

Once again, proprietary index-linked notes are a prime candidate. More complex methodologies consist of additional considerations, such as automatically adjusting underlier weights, multilayered payoff formulas, and more nuanced investment objectives and risk factors, that require new and longer disclosure. Consider, for example, two structured notes issued by Goldman Sachs: one that links only to the S&P 500® Index<sup>165</sup> and one that links to Goldman Sachs's proprietary Momentum Builder Multi-Asset 5S ER Index (MOBU).<sup>166</sup> In the S&P 500-linked note, index-specific disclosure spans only a few paragraphs in the pricing supplement<sup>167</sup> and just three pages in an additional underlier-specific prospectus supplement.<sup>168</sup> MOBU, on the other hand, exists in a different methodological universe, and the difference is apparent in disclosure documents. MOBU tracks the weighted return of fourteen underlying ETFs and rebalances each ETF's respective weight in the index on every "index business day" using a proprietary "methodology algorithm."<sup>169</sup> To capture the full extent of its complexities, index-specific disclosure spans over twenty pages in the

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164. See *supra* notes 62–66 and accompanying text.

165. See Goldman Sachs Grp., Inc., Leveraged Buffered Index-Linked Notes Due 2013 (Form 424(b)(2)), at PS-11 (Oct. 29, 2010), <https://www.sec.gov/Archives/edgar/data/886982/000095012310099464/c07670e424b2.htm> [https://perma.cc/92RG-ZCSU] [hereinafter Goldman Sachs, Leveraged Buffered Index-Linked Notes].

166. See Goldman Sachs Grp., Inc., GS Momentum Builder Multi-Asset 5S ER Index-Linked Notes Due 2024 (Form 424(b)(2)), at PS-5 (July 2, 2019), <https://www.sec.gov/Archives/edgar/data/886982/000156459019024348/gs-424b2.htm> [https://perma.cc/2DHP-82EA] [hereinafter Goldman Sachs, Momentum Builder Index-Linked Notes].

167. See Goldman Sachs, Leveraged Buffered Index-Linked Notes, *supra* note 165, at PS-11 to PS-12.

168. See Goldman Sachs Grp., Inc., Non-Principal Protected Underlier-Linked Notes (Form 424(b)(2)), at A-1 to A-4 (June 21, 2010), <https://www.sec.gov/Archives/edgar/data/886982/000119312510142991/d424b2.htm> [https://perma.cc/L2Y2-Z3S7].

169. See Solactive, GS Momentum Builder Multi-Asset 5S ER Index 1 (2022), [https://www.solactive.com/wp-content/uploads/solactiveip/en/Factcard\\_DE000SLAIY87.pdf](https://www.solactive.com/wp-content/uploads/solactiveip/en/Factcard_DE000SLAIY87.pdf) [https://perma.cc/HJV2-M6EM]; Solactive, GS Momentum Builder Multi-Asset 5S ER Index: Methodology 1–3 (2018), [https://www.solactive.com/wp-content/uploads/2018/03/GSMBM\\_A5S-Index-Methodology-Final-180301-Clean.pdf](https://www.solactive.com/wp-content/uploads/2018/03/GSMBM_A5S-Index-Methodology-Final-180301-Clean.pdf) [https://perma.cc/FMF8-6BZP].

pricing supplement<sup>170</sup> and over 100 pages in an accompanying underlier-specific prospectus supplement.<sup>171</sup>

4. *Investor Comprehension.* — Complexity can hinder an investor's efforts to understand the mechanics of a structured note's payoff through disclosure by increasing both the amount and cost of information that they must analyze and understand. Investor tolerance for complexity is limited by "bounded rationality," or the "cognitive and temporal constraints on an actor's ability to process . . . information."<sup>172</sup> Beyond a certain threshold—what Professor Awrey calls "the complexity frontier"—the costs of understanding a structured note become so high that they "render full comprehension impossible."<sup>173</sup> Moreover, beyond the "complexity frontier," investors also become increasingly reliant on heuristics—simplifying rules or principles—to understand structured notes, which can sometimes lead to severe and systematic errors.<sup>174</sup> For example, in a study of complex payoff scenario disclosure through the lens of consumer information processing, Professors Ann Morales Olazábal and Howard Marmorstein found that it is "highly likely that a significant portion of [investors] . . . will arrive at an unwarranted conclusion about [a note's] expected return and the desirability of its inclusion in their portfolios."<sup>175</sup>

Consider the following example from the GFC. Between 2007 and 2008, as housing prices fell and mortgage defaults rose, Lehman Brothers (Lehman)—then the fourth-largest U.S. investment bank—sold retail investors over \$1.24 billion in structured notes that offered full or partial principal protection.<sup>176</sup> Investors with shorter time horizons and lower risk

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170. See Goldman Sachs, Momentum Builder Index-Linked Notes, *supra* note 166, at PS-3 to PS-10, PS-29 to PS-48.

171. See Goldman Sachs Grp., Inc., MOBU 5S ER Index Supplement No. 6 (Form 424(b)(2)), at S-3 to S-107 (June 19, 2019), <https://www.sec.gov/Archives/edgar/data/886982/000156459019022875/gs-424b2.htm> [<https://perma.cc/N9AS-6JV5>].

172. Awrey, *supra* note 21, at 243.

173. See *id.* at 245. Retail investors have a particularly difficult time understanding complex financial information. In 2012, the SEC found that U.S. retail investors generally lack basic financial literacy. See Off. of Inv. Educ. & Advoc., SEC, Study Regarding Financial Literacy Among Investors, at iii (2012), <https://www.sec.gov/news/studies/2012/917-financial-literacy-study-part1.pdf> [<https://perma.cc/EJV5-2HSZ>].

174. See Olazábal & Marmorstein, *supra* note 21, at 633, 635.

175. *Id.* at 627–28.

176. See Third Amended Class Action Complaint for Violations of the Federal Securities Laws at 37, *In re Lehman Bros. Sec. & ERISA Litig.*, 799 F. Supp. 2d 258 (S.D.N.Y. 2011) (Nos. 08 Civ. 5523 (LAK), 09 MC 2017), 2010 WL 10838817 [hereinafter Third Amended Complaint]. At this time, Lehman's structured note footprint significantly exceeded \$1.24 billion. See Geng Deng, Guohua Li & Craig McCann, Sec. Litig. & Consulting Grp., Structured Products in the Aftermath of Lehman Brothers 2 n.6 (2009), <https://www.slccg.com/pdf/workingpapers/Structured%20Products%20in%20the%20Aftermath%20of%20Lehman%20>

tolerances, particularly those in or nearing retirement, poured into these structured notes in an unprecedentedly volatile and uncertain market.<sup>177</sup> When Lehman filed for bankruptcy on September 15, 2008,<sup>178</sup> the notes—as unsecured, subordinated debt—became effectively worthless.<sup>179</sup> The resultant lawsuit suggests that investors erroneously believed that Lehman’s promise of principal protection as expressed through disclosure was a guarantee of absolute safety and failed to internalize the underlying importance of Lehman’s credit risk.

A more recent example suggests that complexity obfuscates investors’ ability to understand interactions between structured note features. In 2018, structured notes linked to one or more “FANG” stocks—Facebook, Amazon, Netflix, and Google parent company Alphabet—and containing a monthly autocallable redemption feature exploded in popularity.<sup>180</sup> Some of these notes attracted “mom-and-pop investors” by offering potential fixed payouts of up to 25% per annum.<sup>181</sup> But rapid rises in FANG stock prices triggered many of the notes’ redemption features, “often . . . in less than a year, and sometimes in as little as a month.”<sup>182</sup> In many cases, the upfront fees that investors paid exceeded their total returns.<sup>183</sup> It is not a far leap to infer that investors would have opted for notes with less frequent call periods had they recognized upfront that positive FANG performance could trigger redemption so early that the notes’ fees would exceed their returns.

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Brothers.pdf [<https://perma.cc/LU4G-HJD7>] [hereinafter Deng et al., Structured Products] (“Of the \$18.6 billion [in Lehman-issued structured products], \$8.1 billion was issued in U.S. dollar-denominated notes.”); Goldstein, *supra* note 13 (discussing Lehman’s guarantee of around forty billion dollars of principal-protected notes).

177. See Third Amended Complaint, *supra* note 176, at app. B (listing titles of structured notes that investor claimed misled them).

178. See Andrew Ross Sorkin, *Lehman Files for Bankruptcy; Merrill Is Sold*, N.Y. Times (Sept. 14, 2008), <https://www.nytimes.com/2008/09/15/business/15lehman.html> (on file with the *Columbia Law Review*).

179. See Eleanor Laise, *Another ‘Safe’ Bet Leaves Many Burned*, Wall St. J. (Nov. 11, 2008), <https://www.wsj.com/articles/SB122636312365215727> [<https://perma.cc/238Z-FYKH>] (noting that some Lehman products were “trading for less than 10 cents on the dollar”).

180. See Ben Eisen, *New Way to Play FANG Stocks Falls Short for Some Investors*, Wall St. J. (Sept. 11, 2018), <https://www.wsj.com/articles/new-way-to-play-fang-stocks-falls-short-for-some-investors-1536658200> (on file with the *Columbia Law Review*).

181. *Id.*

182. *Id.*

183. *Id.*

### III. TOWARD LESS READABLE DISCLOSURE

Beyond the theoretical framework discussed in Part II, there is little data demonstrating how effective structured note disclosure actually is at adequately informing investors. This Part leverages a simple methodology to “shed[] new light on this empirical darkness.”<sup>184</sup> As *A Plain English Handbook* reiterates, “Investors need to read and understand disclosure documents to benefit fully from the protections offered by our federal securities laws.”<sup>185</sup> Accordingly, this Part assesses the readability of a novel data set of 1,001 structured note pricing supplements filed using Form 424(b)(2) on the SEC’s EDGAR database from 2010 to 2020. It finds that pricing supplements have become less readable over time and vary significantly between issuers, which suggests that structured note disclosure documents may have become less effective at fulfilling their fundamental investor protection function.

#### A. *Methodology*

Readability aims to capture the difficulty of reading written text by measuring variables that impact how readers engage with and understand the text. This data can help a given text’s author gauge the text’s clarity and conciseness. Accordingly, readability has become an increasingly popular empirical tool in disciplines that critically rely on transmitting information.<sup>186</sup> Among the formulas that assess readability, the Flesch-Kincaid (FK) Grade Level is an influential, commonly used, and easily understandable option.<sup>187</sup> It calculates readability based on the average number of words per sentence and the average number of syllables per

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184. Ryan Whalen, *Judicial Gobbledygook: The Readability of Supreme Court Writing*, 125 Yale L.J. Forum 200, 200 (2015) (analyzing the readability of Supreme Court opinions).

185. SEC, *Plain English Handbook*, *supra* note 78, at 3.

186. See, e.g., John Aloysius Cogan, Jr., *Readability, Contracts of Recurring Use, and the Problem of Ex Post Judicial Governance of Health Insurance Policies*, 15 Roger Williams U.L. Rev. 93, 100 (2010) (analyzing the readability of health insurance contracts); Tim Loughran & Bill McDonald, *Measuring Readability in Financial Disclosures*, 69 J. Fin. 1643, 1644 (2014) (analyzing the readability of annual financial statements); Whalen, *supra* note 184, at 200 (analyzing the readability of Supreme Court opinions).

187. See J. Peter Kincaid, Robert P. Fishburne, Jr., Richard L. Rogers & Brad S. Chissom, *Naval Tech. Training Command, DOD, Rsch. Branch Rep. No. 8-75, Derivation of New Readability Formulas (Automated Readability Index, Fog Count and Flesch Reading Ease Formula) for Navy Enlisted Personnel* 14 (1975), <https://apps.dtic.mil/sti/pdfs/ADA006655.pdf> [<https://perma.cc/WT9R-2RG9>] (redefining the Flesch Reading Ease formula); Flesch Reading Ease and the Flesch Kincaid Grade Level, *Readable*, <https://readable.com/readability/flesch-reading-ease-flesch-kincaid-grade-level/> [<https://perma.cc/9T9M-74JS>] (last visited Nov. 1, 2021) (“The Flesch Kincaid Grade Level is a widely used readability formula which assesses the approximate reading grade level of a text.”).

word.<sup>188</sup> This metric is particularly suitable for this analysis because SEC regulations explicitly require that structured note disclosure documents express information in accordance with variables captured by the formula: short sentences, short words, and simpler word choice.<sup>189</sup>

*1. Data Set Compilation and Readability Calculation.* — The novel structured note prospectus data set was assembled by compiling a central index of all Form 424(b)(2) EDGAR filings between 2010 and 2020, assigning each filing a unique identifier using a random number generator, and randomizing the index by identifier.<sup>190</sup> This yielded a randomized index of 309,651 filings. Prospectuses for the first 2,037 filings were individually reviewed and any non-final or non-structured note filings were discarded,<sup>191</sup> leaving a data set of 1,001 structured note filings.<sup>192</sup> Then, to calculate readability, all 1,001 prospectuses were converted into text and fed through a web-based program that measured the number of words, sentences, and syllables per word in each document. The resulting figure corresponds to the grade level in the U.S. education system that must generally be reached to understand the text.<sup>193</sup>

188. The official formula is:

$$\text{Grade Level} = .39 \left( \frac{\text{number of words}}{\text{number of sentences}} \right) + 11.8 \left( \frac{\text{number of syllables}}{\text{number of words}} \right) - 15.59$$

See Flesch Reading Ease and the Flesch Kincaid Grade Level, *supra* note 187.

189. See SEC, Plain English Handbook, *supra* note 78, at 28–31.

190. The SEC publishes indexes of filings by form type. Each index contains identifying information for each filing, including the filing entity, filing date, a central index key, and a file name. The indexes used to assemble this data set can be found at *supra* note 147. Each random identifier was generated using the Excel formula “=RAND()” and then hardcoded to each filing.

191. While not explicitly required by securities laws or regulations, issuers often file preliminary prospectuses with tentative terms to market notes to investors. When a sale is made, the issuer then files a final pricing supplement. Accordingly, because preliminary prospectuses do not reflect notes actually sold, they were excluded from the data set. See, e.g., JPMorgan Chase & Co., Contingent Digital Buffered Notes Linked to the S&P 500 Index Due March 31, 2021 (Form 424(b)(2)), at PS-1 (Mar. 11, 2020), <https://www.sec.gov/Archives/edgar/data/1665650/000089109220002867/e8788-424b2.htm> [<https://perma.cc/XY5U-JWEM>] (filing a “preliminary pricing supplement” and noting that “[t]he information in this preliminary pricing supplement is not complete and may be changed”). Non-structured note filings include filings for commercial mortgage trusts, exchange-traded note addendums, underlier supplements, and plain-vanilla securities. For this analysis, reverse-convertible notes, inconsistently included in the definition of structured notes, were also excluded from the data set due to their unique equity-convertible feature and their decreased issuance since the GFC.

192. See *infra* Appendix for a detailed depiction of the data set compilation process.

193. See Flesch Reading Ease and the Flesch Kincaid Grade Level, *supra* note 187. Text intended for the general public is estimated to register an FK Grade Level of around eight.

2. *Limitations.* — This analysis is limited in several respects. First, no readability formula considers a text's actual substance, which certainly influences readability.<sup>194</sup> The data set is also limited. Form 424(b)(2) prospectuses are only one piece of a disclosure regime on which investors may rely. This Part does not assess readability of, for example, financial statements incorporated by reference into registration statements.<sup>195</sup> Despite these limitations, this analysis remains an informative metric for the quality of structured note disclosure, particularly in concert with a review of disclosure substance.

#### B. Findings

1. *Readability by Year.* — Structured note pricing supplements have become more difficult to read over time. As the solid horizontal line in Figure 1 demonstrates, the FK Grade Level of structured notes in the data set steadily increased from 2010 to 2020.<sup>196</sup> The capped bars extending above and below the FK Grade Level line at each year reflect a confidence interval of 95%, suggesting support for the accuracy of the results.<sup>197</sup>

This negative trend in readability is likely the result of several factors. More complicated payoff structures and underliers likely entail more complicated risk factors and hypothetical scenarios to accurately and fully describe.<sup>198</sup> Increasingly complex structured notes also approach limitations inherent in plain English's ability to precisely express complex realities.<sup>199</sup> In other words, the distillation of intricate economic realities into simple language may inadvertently lead to less readable text. Volume and time may also be relevant factors. As firms issue more structured notes,

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See id. This Note is concerned with the relative FK Grade Level readability of structured note disclosure over time and across issuers, rather than the absolute readability of disclosure documents.

194. See SEC, Plain English Handbook, *supra* note 78, at 57 (“No formula takes into account the content of the document being evaluated.”).

195. See *supra* note 46 and accompanying text (mentioning financial statements incorporated by reference).

196. To ensure that this finding is not merely the result of the FK Grade Level formula, readability was also measured using two alternative formulas: the Gunning Fog (FOG) Index and the Simple Measure of Gobbledygook (SMOG) Index. FOG examines total words and sentences, as well as complex words. See The Gunning Fog Index, Readable, <https://readable.com/readability/gunning-fog-index/> [<https://perma.cc/C85D-3X5C>] (last visited Oct. 19, 2022). SMOG examines the number of polysyllabic words, or words with three or more syllables. See The SMOG Index, Readable, <https://readable.com/readability/smog-index/> [<https://perma.cc/8KLJ-UEWL>] (last visited Oct. 15, 2022). These formulas corroborate the results.

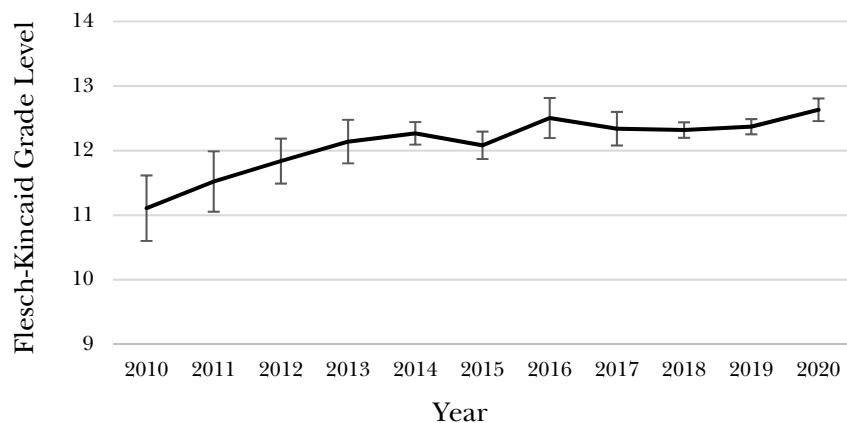
197. This confidence interval represents 95% certainty in the calculation’s reliability.

198. See *supra* notes 125–127 and accompanying text.

199. See Plain English Disclosure, 63 Fed. Reg. 6370, 6370 (Feb. 6, 1998) (noting that complex transactions exacerbate the information problem).

they come under increasing resource and personnel constraints to maintain the same level of readability. If firms do not dedicate commensurate resources and personnel, the quality of disclosure almost certainly falls. Alternatively, the SEC's resource constraints and reduced attention to the structured notes space may further disincentivize issuer diligence in drafting disclosures.

FIGURE 1: READABILITY BY YEAR, 2010–2020



2. *Readability by Issuer.* — Readability also varies in prospectuses both across and within issuers. The standard deviation for all FK Grade Level scores in the data set was 1.29. Figure 2 demonstrates, however, that scores ranged from as low as 8 to as high as 15, even within a single issuer. Moreover, the data set's median FK Grade Level was 12.35, but issuers' median scores over the analyzed period ranged from under 11 to above 14. The five largest issuers in the data set—JPMorgan, UBS, Goldman Sachs, Morgan Stanley, and Credit Suisse—had some of the most significant overall variations in readability.

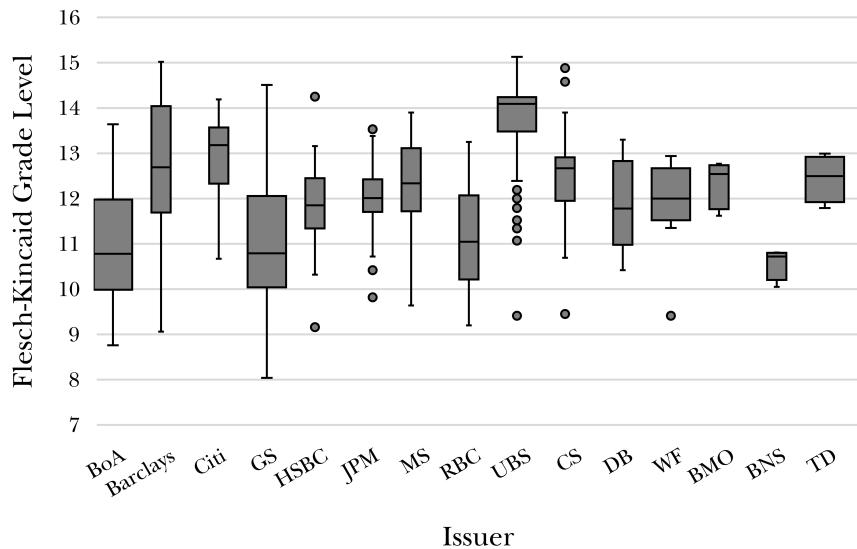
The finding that issuer readability scores vary significantly likely reflects the different approaches that each issuer takes when structuring prospectuses. After all, the mandatory disclosure rules leave issuers a fair bit of breathing room to portray information in different ways,<sup>200</sup> and some issuers are almost certainly more effective at it than others. The fact that some issuers offer more diverse portfolios of structured notes than others is also a likely factor. Nonetheless, given the material information and language constraints common in structured notes across issuers, this

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200. See *supra* section I.B.

finding raises concerns that investors may not be able to shop for and compare structured notes that vary widely across issuers.

FIGURE 2: READABILITY BY ISSUER<sup>201</sup>



#### IV. SOLVING THE INFORMATION PROBLEM

When considered together, Parts II and III demonstrate that structured note disclosure documents may not be able to adequately inform and protect investors in an increasingly innovative and complex market. Part IV proceeds to discuss several reforms to the structured note mandatory disclosure regime that may help allay the negative effects of increased complexity and information loss in the future.

##### A. *The Benefits and Drawbacks of an Ex Ante Approach to Regulation*

Mandatory disclosure is an ex ante approach to financial regulation: It aims to enable investors to make informed investment decisions and to deter issuers from intentionally misleading investors by forcing issuers to

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201. Issuers on the x-axis are abbreviated as follows: Bank of America (BoA); Citibank (Citi); Goldman Sachs (GS); JPMorgan (JPM); Morgan Stanley (MS); Royal Bank of Canada (RBC); Credit Suisse (CS); Deutsche Bank (DB); Wells Fargo (WF); Bank of Montreal (BMO); Bank of Nova Scotia (BNS); and TD Bank (TD).

preemptively disclose material information.<sup>202</sup> Mandatory disclosure is accompanied by ex post enforcement actions and judicial remedies that aim to respond to and mitigate harms caused by failures of the ex ante approach.<sup>203</sup> In a perfect world, ex ante regulations are superior to ex post efforts because preventing harm outright is more preferable than taking action only after investors have realized harm.<sup>204</sup> Both practical and political considerations, however, constrain the ex ante approach to regulation in the structured notes market.

The structured notes market's dynamism and the incentives of issuers to innovate may render ex ante regulations ineffective by the time they are implemented. In other words, ex ante regulations risk becoming outdated and ineffective due to new innovations, especially if the rate at which structured notes become more complex outpaces the rate at which ex ante regulations are updated to keep pace with issues caused by such increasing complexity.<sup>205</sup> Similarly, ex ante regulations may induce regulatory arbitrage. Regulatory arbitrage is an entirely legal practice whereby financial institutions evade the costs of regulatory compliance by shifting practices or activities out of heavily regulated jurisdictions and into more lightly regulated jurisdictions.<sup>206</sup> Regulatory arbitrage, for example, is among the driving forces behind the rising import of the shadow banking system and the declining import of the regulated banking system as "providers of money claims and . . . of capital for productive undertakings" in the United States.<sup>207</sup>

Ex ante regulations also require a "costly, complex, and lengthy" regulatory process.<sup>208</sup> Absent a clear market failure or harm to target, the burdens of this process create a bias toward the status quo and away from

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202. See Steven L. Schwarcz, *Ex Ante Versus Ex Post Approaches to Financial Regulation*, 15 *Chap. L. Rev.* 257, 258 (2011) (discussing ex ante and ex post approaches to financial regulation).

203. See *id.* at 258–59.

204. See *id.*

205. See *id.* at 260; see also Awrey & Judge, *supra* note 4, at 2310–11 ("The financial system has crossed a threshold of complexity where the system is evolving faster than regulators and regulations can keep pace." (quoting Simon A. Levin & Andrew W. Lo, *Opinion, A New Approach to Financial Regulation*, 112 *PNAS* 12,543, 12,543 (2015))).

206. See Judge, *Fragmentation Nodes*, *supra* note 1, at 688 ("If a regulation makes it more expensive for financial institutions to hold X-type assets than Y-type assets . . . financial institutions will find ways to make Xs look like Ys for purposes of the regulation.").

207. Judge, *Information Gaps*, *supra* note 130, at 437; see also Judge, *Fragmentation Nodes*, *supra* note 1, at 688 ("Much of the demand for AAA-rated assets came from investors who faced regulatory or other constraints that required or made it less costly for them to hold such assets.").

208. Awrey & Judge, *supra* note 4, at 2320.

tinkering with preventative reforms.<sup>209</sup> The elaborate requirements of the mandatory disclosure regime almost certainly fuel a certain degree of inertia toward the status quo both by regulators and market participants. Moreover, the resource-intensive regulatory process is not politically attractive. Professors William Bratton and Adam Levitin observed this in the nature of regulations promulgated in the mortgage and structured finance markets after the GFC.<sup>210</sup> Each market played a central role in the GFC, but only in the mortgage market did regulators absolutely prohibit giving a mortgage without considering a borrower's willingness to pay.<sup>211</sup> Regulations promulgated in the structured finance market contained no absolute prohibitions whatsoever.<sup>212</sup> Bratton and Levitin attribute this difference to the fact that the mortgage market is more consumer facing and, in turn, more subject to political pressures: “[M]ore intense political pressure for reform in the consumer markets means that Congress and regulators are more likely to focus . . . on consumer markets than on capital markets.”<sup>213</sup> Despite the explosion in popularity of structured notes among retail investors, the debt securities markets and the capital markets writ large most certainly do not garner as much political attention for reforms as does the ubiquitous home mortgage market.

Despite these limitations, discussing and considering potential updates and improvements to the mandatory disclosure regime is still worthwhile. It is widely accepted that innovations can produce new, significant, and hidden market risks.<sup>214</sup> Failing to reconsider assumptions underlying the disclosure regime’s requirements to account for new innovations and risks is tantamount to waiting for something bad to happen to investors, and “the difficulty of anticipating the unknown does not relieve [the SEC] of [its] responsibility to be proactive.”<sup>215</sup> As the GFC made clear, the costs of allowing complexity and information loss to proliferate may eventually exceed the costs incurred by proactive reform efforts.<sup>216</sup>

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209. See *id.* at 2321.

210. See William W. Bratton & Adam J. Levitin, *A Tale of Two Markets: Regulation and Innovation in Post-Crisis Mortgage and Structured Finance Markets*, 2020 U. Ill. L. Rev. 47, 117.

211. *See id.*

212. *See id.*

213. *Id.*

214. See *supra* notes 112–124 and accompanying text.

215. Caroline A. Crenshaw, Comm’r, SEC, *Assessing the Unknown* (Sept. 24, 2021), <https://www.sec.gov/news/speech/crenshaw-2021-09-24> [<https://perma.cc/2RX4-7FLZ>].

216. See Awrey & Judge, *supra* note 4, at 2321 (warning that new and complex interconnections in today’s financial markets have been met with regulatory silence).

### B. *Enhancing Disclosure*

Parts II and III suggest that text disclosure as a means of informing investors may be inadequate. The English language has a limited ability to capture complex mathematical methodologies and concepts.<sup>217</sup> This inherently limits text disclosure and its readability.<sup>218</sup> In this respect, it is less useful for nearly all investors: Investors in or nearing retirement—the largest structured note investor demographic—are the most susceptible to information loss,<sup>219</sup> and younger investors are less likely to examine text disclosure at all.<sup>220</sup>

Even though technological innovations may be the source of the information challenges of disclosure, technology may also offer the best solution.<sup>221</sup> More specifically, web-based digital disclosure tools may serve to combat information loss resulting from more complex structured notes. Choice engines are one such tool. Investors could input their unique risk-reward profiles and investment objectives into a choice engine and the engine would return targeted, interactive disclosure for prospective and suitable investments.<sup>222</sup> Proof of this concept already exists: The Financial Industry Regulatory Authority (FINRA) currently offers a similar tool that allows investors to analyze and compare various types of investment funds.<sup>223</sup> Interactive digital calculators are another potentially helpful tool. Digital calculators could allow investors to test the consequences of their underlying assumptions about how the payoff structures of specific

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217. See *supra* notes 159–161 and accompanying text.

218. See *supra* note 199 and accompanying text.

219. See Olazábal & Marmorstein, *supra* note 21, at 627 (“The older target market for these structured notes is prone to be the least numerate class of investors, that is, those least likely to possess the complex . . . skills necessary to evaluate structured products, even though they may have years of investing experience.”).

220. Mike Boese, Opinion, *Advisors Must Meet the Digital Demands of Young Investors*, CNBC (Apr. 19, 2021), <https://www.cnbc.com/2021/04/19/op-ed-advisors-must-meet-the-digital-demands-of-young-investors.html> [https://perma.cc/NV4Y-E5T6] (noting that younger investors “expect to interact and learn digitally”).

221. See Hu, *supra* note 21, at 1610.

222. See Nat'l Sci. & Tech. Council, Exec. Off. of the President, Smart Disclosure and Consumer Decision Making: Report of the Task Force on Smart Disclosure 7 (2013), [https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/report\\_of\\_the\\_task\\_force\\_on\\_smart\\_disclosure.pdf](https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/report_of_the_task_force_on_smart_disclosure.pdf) [https://perma.cc/47UB-MZHG] (“Choice engines’ . . . help consumers make informed decisions in the marketplace through platforms such as product-comparison websites, mobile shopping applications, and government information platforms.”).

223. Fund Analyzer, FINRA, [https://tools.finra.org/fund\\_analyzer/](https://tools.finra.org/fund_analyzer/) [https://perma.cc/ZNY4-54WC] (last visited Dec. 23, 2021).

structured notes operate.<sup>224</sup> This could demonstrate to an investor, for example, how a structured note's return is affected by underlier performance, the presence of a participation rate or a redemption feature, and even macroeconomic forces.<sup>225</sup> Digital calculators are also already in use: “[T]he CFPB has begun offering online calculators to help citizens shop for and understand consumer loans.”<sup>226</sup>

Regulators might also consider working with issuers to standardize the presentation of information in disclosure documents. Updating the standards by which information should be expressed in disclosure documents could reduce the costs imposed on investors when comparing structured notes.<sup>227</sup>

### C. Strengthening Oversight

Beyond leveraging technology to modernize disclosure, improving regulatory oversight over the offering process helps protect structured note investors. Currently, the SEC and FINRA oversee distinct parts of the structured notes market.<sup>228</sup> This dichotomy reflects a “categorization of different species of markets and institutions” by which each entity pursues its regulatory mandate with a “deeply engrained path dependence.”<sup>229</sup> This path dependence may lead the SEC and FINRA to overlook problematic market dynamics and trends, particularly proliferating systemic risk.<sup>230</sup> As a result, the SEC may not be properly equipped or prepared to protect investors or promote stability in the capital markets.<sup>231</sup>

Giving another regulatory entity the responsibility to oversee the structured notes market but with a particular eye toward systemic risk concerns could be one solution. FSOC, for example, has a broad, holistic

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224. See Erik F. Gerding, Disclosure 2.0: Can Technology Solve Overload, Complexity, and Other Information Failures?, 90 Tul. L. Rev. 1143, 1174 (2016) (noting that interactive disclosure “might enable investors to change particular assumptions behind certain financial presentations and then see how the results would change”).

225. See id.

226. Id.

227. See id. at 1156 (“[C]ertain patterns of contractual provisions can form standardized agreements . . . and certain patterns of agreements can form standardized transactions . . . ”).

228. See supra note 39 and accompanying text.

229. See Awrey & Judge, supra note 4, at 2351.

230. Id. at 2351 n.264 (providing as a prominent example the SEC’s failure to “adequately consider the broader systemic implications of their approach toward the design and supervision of capital rules for large investment banks” before the GFC).

231. But see Hilary J. Allen, The SEC as Financial Stability Regulator, 43 J. Corp. L. 715, 728–29 (2018) (arguing that the SEC has an unspecified mandate to promote financial stability).

statutory mandate to “identify risks to . . . financial stability,” “promote market discipline,” and “respond to emerging threats to the stability of the [U.S.] financial system.”<sup>232</sup> Giving an FSOC-like body oversight and rulemaking responsibility could add a dynamic and valuable complement to the SEC.

More frequent oversight over the structured notes that issuers are selling might also be a solution. The ability of disclosure to inform and protect investors is a product of how effectively disclosure rules are governed.<sup>233</sup> There is a concerning lack of data about just how complex the structured notes that end up in the hands of retail investors are and how those retail investors acquire them. One potential safeguard could be specialized or enhanced regulatory requirements for structured notes above a certain level of complexity. Some have proposed per se unsuitability designations for notes that are sufficiently complex. In other words, notes that exceed a complexity threshold determined by considering a note’s underliers, payoff structure, or some combination, would be considered too intrinsically complex and thus per se unsuitable for retail investors.<sup>234</sup> Some European countries have gone this route, which effectively bans the sale of some notes to retail investors.<sup>235</sup>

Another iteration that some have proposed is a system of mandatory government licensing of complex financial products whereby “financial institutions [would need] to make an affirmative showing that each complex financial product they intend to market meets” several predetermined “statutory tests.”<sup>236</sup> Both of these proposals have significant drawbacks. A complete ban would likely inadvertently ban beneficial transactions and run afoul of the SEC’s mandate to facilitate capital formation.<sup>237</sup> Mandatory government licensing would likely face the same issue and would almost certainly buckle under the SEC’s limited

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232. See 12 U.S.C. § 5322(a)(1) (2018) (defining FSOC’s general purposes).

233. See Niamh Moloney, *Regulating the Retail Markets: Law, Policy, and the Financial Crisis*, 63 *Current Legal Probs.* 375, 383 (2010) (“The achievement of good investor protection outcomes depends . . . on how investor protection rules are, on a day-to-day basis, supervised.”).

234. See, e.g., Gerding, *supra* note 225, at 1176–77 (“[I]f the risks of an issuer indeed cause information overload and are ‘too complex to depict,’ then perhaps that issuer’s securities are too complex to sell.”); cf. Deng et al., *Structured Products*, *supra* note 176, at 2 (concluding that notes sold to investors that were dominated by other readily available instruments should have been recognized as per se unsuitable for any investor).

235. See, e.g., *FSMA Bans 12 Structured Products, Detects KID Shortcomings*, *supra* note 104, at 5 (describing Belgium’s moratorium on complex structured products for retail investors, including proprietary indexes with overly complex calculation formulas).

236. E.g., Saule T. Omarova, *License to Deal: Mandatory Approval of Complex Financial Products*, 90 *Wash. U. L. Rev.* 63, 67 (2012) (proposing three tests examining: (1) economic purpose; (2) institutional capacity; and (3) systemic effects).

237. See Schwarcz, *Regulating Complexity*, *supra* note 21, at 239.

institutional capacity. A more feasible approach might be to require issuers to make additional disclosures for structured notes above a certain complexity threshold to ensure that intermediaries and retail investors fundamentally understand the investments. Private-sector certifications, akin to credit agency ratings, of the complexity of a note or the quality of disclosure could also serve to protect investors.<sup>238</sup>

#### CONCLUSION

While the global financial crisis fades in the rear view mirror, the extent to which investors are protected from the next crisis relies on how the regulatory landscape adapts to the challenges ahead. This Note examined how complexity arising from financial innovations may lead to information loss that impairs the creation, comprehension, and enforcement of mandatory disclosure, and it supplemented this discussion with a brief empirical study of disclosure readability. By assessing mandatory disclosure rules in the context of structured notes, this Note adds to the body of work focused on protecting retail investors amid a growing, innovating, and increasingly popular complex security.

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238. See id. at 242.

## APPENDIX: NOVEL DATA SET

Year	#	%	#	#	#	#	%
	Total Filings	Total Filings	Reviewed	Removed	Data Set	Data Set	
	424(b)(2)	424(b)(2)					
2010	8,869	2.86%	57	35	22	2.20%	
2011	12,391	4.00%	95	51	44	4.40%	
2012	13,762	4.44%	81	41	40	4.00%	
2013	13,937	4.50%	95	53	42	4.20%	
2014	15,513	5.01%	103	47	56	5.59%	
2015	16,771	5.42%	109	47	62	6.19%	
2016	24,654	7.96%	146	79	67	6.69%	
2017	37,462	12.10%	245	129	116	11.59%	
2018	46,817	15.12%	312	169	143	14.29%	
2019	51,858	16.75%	338	169	169	16.88%	
2020	67,616	21.84%	456	216	240	23.98%	
	309,650	-	2,037	1,036	1,001	-	