The Broken Bond Market

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ABSTRACT

Valued at $11.2 trillion – equivalent in size to half the U.S. economy – the corporate bond market is opaque, illiquid and inefficient. This Article argues that the bond market – premised on contract – rests on a fundamentally flawed regulatory design that delivers neither investor protection nor market quality. It makes three contributions. First, it shows that bondholders face a conflict between securing creditor control using a tailorable contact – and the tradability of their bond claim. By tailoring a contract to match the riskiness of an issuer, bondholders end up holding a less standard claim that becomes harder and costlier to trade. Secondly, the Article develops the implications of this conflict for investor protection. Bondholders assume transaction costs that do not exist in equity markets. Activism is more difficult as investors cannot use the threat of exit cheaply to pressure managers. Monitoring costs are high as prices lack a credible surveillance function. Seen through the lens of this conflict, this Article refines the traditional notion of bondholders as being passive actors. Rather, the impossibility of achieving both control and tradability limits bondholders in their ability to push back against managerial and shareholder agency costs. In concluding, this Article sets out a three-part solution designed to create choice, control and liquidity. It proposes: (i) standardization through the creation of tiers of form contracts that can enhance liquidity while offering tailorability in the choice of model contract; (ii) a stronger role for trading platforms in monitoring and enforcing contract terms; and (iii) retaining features of the status quo as part of the new market to accommodate those that need full tailorabilty even at the cost to tradability. This solution seeks to repair the broken bond market and assure that bondholders enjoy both investor protection and market quality as a part of their claim.

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I. INTRODUCTION

Valued at $11.2 trillion dollars – or around half the size of the U.S. economy – the U.S. corporate bond market affords its investors neither effective protection nor efficient tradability.[1] Take the case of AMC Entertainment Holdings (AMC) – the world's largest movie theater operator. On Jan 19, 2021, shortly before it became a meme stock, AMC saw its share price surge 26% on news that it had raised $100 million in the bond market.[2] Defying bleak prognoses – that had seen COVID-19 shutter its theaters worldwide – AMC's shares became the most heavily traded on the New York Stock Exchange (NYSE), with 206.3 million shares changing hands during the day.[3] That AMC was able to borrow such sums came as a surprise. Carrying a "junk" rating and laden with $5.5 billion in debt, AMC had forced bondholders to take an almost 50% write-down on their claims in June 2020 and flirted with bankruptcy multiple times during the year.[4] Still, this episode is

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[1] Sam Goldfarb, *Pandemic Hangover: $11 Trillion in Corporate Debt*, WALL ST. J. JUN. 14, 2021.

[2] Tommy Kilgore, *AMC Stock Rockets on Very Heavy Volume after Issuing $100m in Notes Due 2026*, MARKETWATCH, JAN. 19, 2021. Importantly, this incident occurred around a week or so before AMC became one of the stocks subject to the Reddit trading frenzy, David Lynch et al., *GameStop, AMC Shares Surge after Reddit Users Lead Chaotic Revolt Against Big Wall Street Funds*, WASH. POST, JAN. 27, 2021.

[3] Kilgore, *supra* note [2]. On the fortunes of AMC over the COVID-19 pandemic and its corporate history, Brooks Barnes, *Can a Brash Executive in Kansas Save Movie Theatres?* N.Y. TIMES, JAN. 22, 2021.

[4] On the junk rating, Moody's Investor Service, *Rating Action: Moody's Affirms AMC's Caa3*, Aug. 3, 2020; Barnes, *supra* note [3]; Barnes, supra note [3]; Miezko Mazur et al., *COVID-19 and the March 2020 Stock*

telling for what it says about the relative workings of equity versus bond markets. It shows that shareholders value their ability to take risk using bondholder capital. It further highlights that shareholder claims – even those issued by companies circling insolvency – can trade fluidly. By contrast, bondholders face a stickier and costlier environment. On Jan 19, AMC's public bonds barely traded. When its stock became the most actively traded on the NYSE, AMC's public bonds – across all issues – were bought and sold just 38 times.[5] Despite facing the prospect of greater default risk and a more leveraged capital structure, AMC's public bondholders barely responded.[6]

Their inaction is to be expected given the costs facing investors when transacting in the bond market. This Article argues that the bond claim – rooted in contract rather than ownership – has produced a market that fails to provide investors with either effective creditor control or efficient trading. Part II identifies and describes the problem. Equityholders are insulated against managerial misbehavior through a slate of systematic corporate law safeguards (e.g., the fiduciary duty of loyalty) and the ability to trade a standard claim in a sophisticated, efficient secondary market.[7] By contrast, bondholder protection rests in the contract between the issuer and investors. Bondholders have flexibility to create a tailored document that mitigates the risks they face from managers and shareholders.[8] But it also makes the bond claim harder to buy and sell as contracts become highly tailored and non-standard. When investors and issuers choose to take advantage of contractual flexibility, the claim loses fungibility with past and future issues as well as with claims issued by peers.[9] Comparability becomes more difficult and time-consuming. And the document's drafting can assume legal and economic complexity to reflect the unique risks posed by the borrower and issue. By situating bondholder investor protection in contract, bondholders confront a conflict between choosing tailorable creditor control and maintaining the claim's tradability in public secondary markets.[10]

This conflict has resulted in a bond market that internalizes both imperfect creditor control and costly tradability as a fact of doing

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Market Crash. Evidence from S&P1500, 101 FIN. RES. LETTERS 101690 (JAN. 2020) (detailing the relative impact of the stock market on different sectors of the economy); *See e.g.*, Yun Li, *This Was the Fastest 30% Sell-Off Ever, Exceeding the Pace of Declines during the Great Depression*, CNBC, MAR. 23, 2020.

[5] FIN. IND. REG. AUTH., *Bonds*, http://finra-markets.morningstar.com/BondCenter/Default.jsp (we calculated the number of trades on the TRACE database for AMC Entertainment Holdings for 19 Jan.)

[6] Joy Wilterbuth, *U.S. Corporate Debt Soars to Record $10.5 Trillion*, MARKETWATCH, AUG. 31, 2020.

[7] See discussion and sources *infra* Part II(A).

[8] See discussion and sources *infra* Part II(A).

[9] See discussion and sources *infra* Part II(A)&(B)(1).

[10] See discussion and sources *infra* Part II(A)&(B)(1).

business. As Part II describes, the bond market accommodates this trade-off between tailorable creditor control and liquidity with the result that investors achieve neither value fully.

Modern bond contracting reflects an uneasy effort to tailor investor protection while also seeking to create tradability. On the one hand, bond contracts routinely run to over 100 pages. They can restrict how freely an issuer can borrow, its ability to declare dividends or spend heavily. Terms can be densely crafted to match the risk posed by an issuer/issue with tighter constraints for those closer to default.[11]

But investors also seek out similarity and boilerplate in contract design as a way to retain liquidity. In trying to achieve both, the result is often a hodge-podge where investors sacrifice some precision tailoring in favor of enhancing the claim's tradability.[12] Continuity in contract design enables bonds to trade more easily and affords the issuer a lower cost of capital.[13] Investors, predictably, appear to tolerate reduced tailoring in favor of retaining some contractual familiarity. Scholars remark on the path dependencies seen in bond drafting, with boilerplates and language often reused from past issues.[14] While investors might ideally wish to have a crafted set of creditor control levers, the trade-off with liquidity supports industry contracting practices that favor a mish-mash of boilerplates, recycled drafting as well some tailoring for a particular issue/issuer.[15] In attempting to navigate between tailorability and tradability, bond contracts have come to be criticized for their bulk, opacity, complexity and a limited capacity to adapt. Interpretation can be difficult, diminishing enforceability because investors must work hard to understand their entitlements and detect breaches.[16]

On the trading side, the contractually complex nature of the claim has contributed to the creation of a secondary market whose operations are opaque, slow, expensive and inefficient – diminishing investor incentives to trade their claim.[17] Equityholders can transact on a network of exchanges and platforms in milliseconds.[18] They generally enjoy cheap access to ample liquidity. The market can produce efficient prices that signal the worth of firm cash flows.[19]

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[11] See discussion and sources *infra* Part II (B)(2).

[12] See discussion and sources *infra* Part II (B)(1)&(2).

[13] See discussion and sources *infra* Part II (B)(1).

[14] See discussion and sources *infra* Part II (B)(1).

[15] See discussion and sources *infra* Part II (B)(1)&(2).

[16] See discussion and sources *infra* Part II (B)(1)&(2).

[17] See discussion and sources *infra* Part II(B)(1)&(2.

[18] See discussion and sources *infra* notes [112]-[116]

[19] See discussion and sources *infra* Part II (B)(2).

Bondholders, by contrast, enjoy none of these advantages.[20] Their trading is curtailed by expense, time, uncertainty and a lack of price transparency. [21] The secondary market is intermediated by large finance firms that match buyers and sellers outside of organized platforms.[22] To keep the market moving, they also tap into deep pockets and take risk onto their own balance sheets by buying or selling directly with investors.[23] While these "dealers" provide the infrastructure for trading, the outcomes diverge markedly from those in equity.[24] Pre-trade price quotes for investors can be unreliable – advertised offers can change or be retracted.[25] Execution quality is *ad hoc*. Dealers are known to give higher-quality service to their favored clients.[26] And execution costs are markedly higher than in equity, adding delay and high fees to trades.[27]

Illiquid trading also raises doubts about the market's ability to produce informative price efficiencies. An average day in the U.S. equity market sees around $500 billion worth of turnover, while the comparable figure for corporate bonds stands at $25-30 billion.[28] Just over 50% of the corporate bonds that were bought and sold in 2019 saw trading only around once in three weeks.[29] Some did not trade at all.[30] Uncertainties in pricing have led to considerable divergence among investors about what similar portfolios of bonds are worth,[31] further adding to bondholders' costs of market participation.[32]

The conflict between creditor control and tradability diminishes the ability of bondholders to control the risk of managerial

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[20] See discussion and sources *infra* Part II (B)(2).

[21] See discussion and sources *infra* Part II (B)(2).

[22] See discussion and sources *infra* Part II (B)(2).

[23] See discussion and sources *infra* Part II (B)(2).

[24] See discussion and sources *infra* Part II (B)(2).

[25] See discussion and sources *infra* Part II (B)(2).

[26] See discussion and sources *infra* Part II (B)(2).

[27] Louis Ederington et al., *infra* note [203] (highlighting the high search costs in dealer markets); Larry Harris & Michael Piwowar, *Secondary Trading Costs in the Municipal Bond Market*, 61 J. FIN. 1361 (2006) (noting bid-ask spread of 2% on a $20,000 trade in municipal bonds); On equity market spreads, Tarun Chordia et al., *Liquidity and Market Efficiency*, 87 J. FIN. ECON. 249 (2008)(pointing to a median bid-ask speed of around 3.3 cents for equity). See discussion and sources *infra* Part III (B).

[28] Eric Jacobson & Maciej Kowara, *When Bond Prices Are A Matter of Opinion*, Morningstar Research, Jan 20, 2021, https://www.morningstar.com/articles/1018099/when-bond-prices-are-a-matter-of-opinion.

[29] Jacobson & Kowara, *supra* note [28].

[30] Jacobson & Kowara, *supra* note [28].

[31] Jacobson & Kowara, *supra* note [28]; Eric Jacobson & Maciej Kowara, *Bond Pricing: Agreeing to Disagree*, Morningstar Research (Jan. 20, 2021).

[32] Jacobson & Kowara, *supra* note [28] (highlighting the need for investors to undertake research and analysis to determine the worth of their bond).

and shareholder misbehavior – the agency costs of debt. In Part III, we show that bond investors face a slew of agency costs that do not burden counterparts in equity markets. We make three points. First, the conflict leaves bond investors without important disciplinary levers against shareholders and management. Specifically, bondholders face high costs in using threats to sell or actual sales to convey a negative view about the firm. Scholars point to the power of the "Wall Street Walk" – when large investors wield the promise of a sale to coerce management – as a tool to promote good behavior in the C-Suite.[33] In equity "exit" and "voice" are aligned. Shareholders that wish to show disapproval can threaten exit credibly knowing they can sell into a liquid and informative market where this signal will be efficiently incorporated into prices. For debt, the alignment is much less neat.[34] Bondholders confront pervasively costlier and more uncertain secondary market liquidity in threatening exit. Bond price informativeness is debatable in its quality. Managers and shareholders thus gain room to misbehave and increase default risk because investors face systematic costs in actualizing threatened exit – and where the informational signal in prices is weaker owing to infrequent trading and limited price transparency.[35]

Secondly, a diminished price mechanism adds to the costs of bondholder discipline.[36] The efficiency of the equity market – where share prices generally reflect available information – has resulted in prices playing a critical role for investor monitoring.[37] For example, in a market with informative prices, managers have an incentive to maintain a well-functioning firm whose strength can be observed in stable prices. [38] Large shareholders with fundamental insights can use price signals to convey information through trading, reinforcing pressure on managers to perform.[39] Corporate raiders often use prices as a basis for launching an action against a firm, ousting inefficient or underperforming managers. And anti-fraud securities class actions often react to equity price fluctuations as a sign of possible deception and misbehavior.[40]

The disciplinary power afforded by informative prices is much less achievable in bond markets. This absence represents a specific

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[33] See discussion and sources *infra* Part III (A).

[34] See discussion and sources *infra* Part III (A).

[35] See discussion and sources *infra* Part III (B).

[36] See discussion and sources *infra* Part III (B).

[37] See discussion and sources *infra* Part III (B).

[38] See discussion and sources *infra* Part III (B).

[39] See discussion and sources *infra* Part III (B).

[40] See discussion and sources *infra* Part III (B).

gap. Bondholders cannot simply piggyback on equity prices to inform their disciplinary actions. Rather, bond prices have their own focus. Given the importance of non-payment in debt, bond prices are sensitive to news of a firm's default risk – negative information that suggests that an issuer cannot pay or comply with bond terms.[41] Equity prices capture both positive and negative developments. Bond prices, however, are (understandably) most concerned with and sensitive to negative news.[42] Illiquidity and its harm for price efficiency carries real costs for bondholders by reducing the disciplinary power that a workable price mechanism might be able to provide about the likelihood of a firm's default.[43]

Thirdly, we refine the conventional, scholarly view that bondholders are passive, apathetic monitors owing to collective action and coordination costs.[44] It is well-known that bond-terms are underenforced. Dispersed investors in public markets suffer coordination costs in a market where claims can be complicated legally and economically. Importantly, bond markets have failed to provide a fix to collective action difficulties. The indenture trustee – required in public issues – is mostly a ministerial agent that lacks the monetary incentive or legal firepower to protect bondholder rights effectively.[45]

We update this account to observe that the conflict between contractual tailorability and tradability reinforces bondholder disinterest.[46] This tension creates a unique bundle of costs for bondholders. Investors cannot rely on tools like threats to sell or actual sales to steer managers away from actions that create high default risk. Prices represent a less credible monitoring lever to acquire cheap, ongoing insight into a firm's riskiness. Crucially, in determining whether to modify contract terms, bondholders must balance possible harm to the claim's tradability with the gains that might accrue to creditor control. This can limit incentives to agitate for contract changes or to invest optimally in the contracting process. Bondholders thus face several built-in deficiencies: (i) information and enforcement costs; (ii) limited incentives for intensive engagement in contract drafting; (iii) reduced insights about an issuer from the contracting process; (iv) a smaller toolkit for investor activists; and (v) prices that lack credibility to fill the monitoring gap. With these systematic deficiencies – in addition to collective action costs – what looks like simple bondholder apathy can instead reflect a rational attempt by

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[41] See discussion and sources *infra* Part III (B).

[42] See discussion and sources *infra* Part III (B).

[43] See discussion and sources *infra* Part III (B).

[44] See discussion and sources *infra* Part III (C).

[45] See discussion and sources *infra* Parts II(A) & III (C).

[46] See discussion and sources *infra* Part III (C).

bondholders to navigate the tradeoffs of modifying and enforcing complex, lengthy bond contracts.[47]

The conflict between tailorability and tradability in contract design points to a bond market that is broken and unable to meet fundamental investor needs. In Part IV, we propose a solution to repair the bond market with the goal of creating greater control, liquidity and choice. Our solution is composed of three parts. First, with bond markets moving towards electronic trading, we propose the development of a more standardized set of bonds that provide a tiered menu of form contracts with progressively thicker restrictions depending on issuer and investor preferences.[48] Tailorability exists. However, it does so within the context of participants choosing a standard-form contract from a menu of tiered choices. The aim lies in ensuring that contracts become clear, comparable and capable of being traded owing to greater standardization. Secondly, as electronic platforms grow in popularity, they offer a viable and incentivized actor to take on the role of indenture trustee.[49] Our solution anticipates allowing platforms to contract to offer services that go beyond the minimal requirements demanded of traditional trustees. Platforms have expertise, collect and disseminate vast quantities of data and, importantly, have long been relied on by regulation to offer private oversight in capital markets.[50] An active role in bondholder protection for platforms would be consistent with regulation's historic reliance on private industry self-regulation to also protect investors and markets. Thirdly, to allow investors to also choose fullest tailorability, we suggest maintaining the status quo as part of the market. Those that need to tailor, even at the cost of tradability, can rely on current types of contracts and the over-the-counter dealer market for trading. We posit that the co-existence of a more standardized as well as traditional market will have benefits for both segments. Investors that prize precision activism can gravitate towards the traditional market – and through their intervention reduce agency costs for all. In turn, more liquid, electronic trading of standard-form contracts can nourish efficient prices and the dissemination of information.[51] This three-part solution preserves the basic private nature of bond market regulation. But when implemented, it represents a way to repair the rupture in bond markets that forces investors to choose between tailorability or tradability in the vindication of their claim.

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[47] See discussion and sources *infra* Part III (C).

[48] See discussion and sources *infra* Part IV (A).

[49] See discussion and sources *infra* Part IV (B).

[50] See discussion and sources *infra* Part IV (B).

[51] See discussion and sources *infra* Part IV (C).

II. THE BROKEN BOND MARKET

Shares and bonds constitute the building blocks of capital markets. Shares give holders ownership in a firm – a claim to a portion of the profits the business generates as well as the right to have a say in firm governance.[52] Bonds represent a debt owed to investors without any proprietary stake and formal voting power.[53] Instead bondholders are supposed to exert control using their negotiated, tailored contact (or indenture) with an issuer.[54]

As securities, shares and bonds exist within the context of a public marketplace where claims can be traded between investors.[55] The ability to buy and sell claims quickly and cheaply without affecting prices ("liquidity") means that investors avoid carrying securities that they do not want, and being able to buy those they do.[56] For the market, liquid secondary trading encourages securities prices to be informative as traders enter and exit smoothly with insights about the present value of the firm's future cash flows.[57]

Despite the economic significance of control rights and liquidity, this Part shows that these features are incompatible in bond claims. It lays out the central concern of this Article. While equity investors generally enjoy a suite of control rights as well as robust liquidity, bondholders face a trade-off between creditor control and liquidity. Common equity claims are standard entitlements, allowing

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[52] *United Housing Foundation, Inc. v. Forman*, 421 U. S. 837 (1975); *Landreth Timber Co. v. Landreth*, 471 U.S. 681 (1985) (establishing the defining characteristic of "shares" under Section 2(1) of the Securities Act 1933).

[53] *Reves v. Ernst & Young*, 494 U.S. 56 (1990) (describing the characteristics of a "note" under Section 2(a)(1) of the Securities Act 1933).

[54] *See e.g.* Bratton *infra* note [131].

[55] Section 2(1) of the Securities Act of 1933. See Securities Act of 1933, ch. 38, § 2(1), 48 Stat. 74, 74 (codified as amended at 15 U.S.C. § 77b(a)(1) (2012); *Reves v. Ernst & Young*, 494 U.S. 56 (1990) (identifying a "plan of distribution" as a characteristic of a note); in *United Housing Foundation, Inc. v. Forman*, 421 U. S. 837 (1975) (negotiability and tradability are one of the four main features of a share).

[56] Aswath Damodaran, *Comatose Markets: What if Liquidity is Not the Norm?* Working Paper, 3-4 (Dec. 2010) (defining liquidity as "you should be able to buy or sell an asset instantaneously at the prevailing market price and bear no transactions costs").

[57] James Dow & Gary Gorton, *Stock Market Efficiency and Economic Efficiency: Is There a Connection?* 2–4 (Nat'l Bureau of Econ. Research Working Paper Series, Working Paper No. 5233, 1995); Bengt Holmstrom & Jean Tirole, *Market Liquidity and Performance Monitoring*, 101 J. POL. ECON. 678, 679□80 (1993); The literature on efficient markets and the Efficient Capital Markets Hypothesis (ECMH) is extensive and highly debated, highlighting (for example) behavioral biases that complicate the the ECMH. On the ECMH, see for example, Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1970); Ronald Gilson & Reinier R. Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549 (1984). On the challenge posed by behavioral impulses, see, for example, Nicholas Barberis, Andrei Shleifer & Robert W. Vishny, *A Model of Investor Sentiment*, 49 J. FIN. ECON. 307, 315-20 (1998).

them to be fungible. Bond contracts, however, aspire to the opposite. To control risk, bondholders ought to negotiate tailor the contract to the specific risk of the instrument and issuer. By doing so, the tradability of claims diminishes as they become less standard and less fungible with other bonds issued by the borrower (as well as by peers).

This Part moves to describe the real-world adaptations made in the bond market to adjust to this conflict between tailorable creditor control and tradability with the result that investors receive neither value fully. Investors have come to rely on standardized boilerplates and familiar reused language, aiding liquidity, but at a cost to tailorability. Contracts have become dense, complex and difficult to interpret. From the standpoint of liquidity, trading in bonds is largely carried out off-exchange by a set of expert intermediaries on opaque and expensive over-the-counter networks. With bondholders confronting a trade-off between creditor control and liquidity, this Part underscores the systematically greater costs they face to participate in public markets relative to those transacting in equities.

A. *Bonds versus Equity*

Bond claims represent a debt obligation owed to investors in securities markets.[58] They memorialize a promise to repay a sum of money over a period of time and at a specific rate of interest ("coupon" rate).[59] This rate is calculated to compensate the bondholder for the risk of defaulting on the debt and for giving up on other investment opportunities.[60] By contrast, shareholders enjoy ownership in the company but lack the right to demand repayment.[61] Bond debt enables

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[58] Securities Act 1933 § 2(a)(1) Pub. L. No. 112-106, 48 Stat. 74 (codified as amended at 15 U.S.C. §§ 77a et seq.) (loans are not listed within the recognized categories of claims within the definition of security). But see, Smita Madhur, *Loan Buyback-Related Ratings Action Stir Debate*, REUTERS, May 22, 2009 (on the potential for tradable loans to be securities); Reves v. Ernst & Young, 494 U.S. 56 (1990) (describing the characteristics of a "note" under the Securities Act 1933).

[59] RICHARD BREALEY ET AL., PRINCIPLES OF CORPORATE FINANCE (12TH ED), 48-73, 598-630 (setting out the features of bonds); Securities & Exchange Commission, What Are Corporate Bonds? https://www.investor.gov/introduction-investing/general-resources/news-alerts/alerts-bulletins/investor-bulletins/what-are. For analysis of debt claims and capital structure, Paolo Colla et al., *Debt Specialization*, 68 J. FIN. 2117 (2013).

[60] BREALEY ET AL., *supra* note [59], 48-74; Ashwath Damodaran, *Valuing Declining and Distressed Companies*, Working Paper (2009) (showing how to calculate the time value of money, reflecting default risk, inflation, and opportunity costs of capital).

[61] Joan Farra-Mensa et al., *Financing Payouts*, Harvard Business School Working Paper, No. 15-049, (2019) (detailing pressure on companies to declare dividends and providing evidence that companies access debt and equity capital markets to make dividend payments); Jesse Fried & Charles Wang, *Short-Termism and Capital Flows*, 8 REV. CORP. FIN. STUD. 207 (2019) (discussing the trade-offs facing managers between declaring dividends/engaging in share buybacks and reinvesting profits).

a form of funding that is contractual rather than proprietary in nature, time-limited and able to be tailored between the firm and investors.[62]

By virtue of ownership, shareholders also represent those whose capital is designed to absorb losses: the value of their interest can be reduced to zero if the company ends up liquidated or restructured.[63] Equity thus enjoys exponential upside should things go well, but stands last in line to be paid out if they do not.[64] Bondholders cannot experience unlimited growth.[65] But they are more insulated against the downside, with priority that requires that they be repaid ahead of equity if a company becomes insolvent.[66]

Investors in publicly traded stocks and bonds confront a slew of unavoidable risks arising from the dispersed nature of their holdings and the economic need to trade them.[67] First, both types of investors are vulnerable to seeing their capital dissipated by incompetent, greedy and misbehaving managers. An inability to monitor and discipline the firm's C-suite puts shareholders and bondholders at risk where those charged with stewarding capital lack accountability. These "agency costs" can seed behaviors that result in a firm misusing investor capital by spending it on frivolous, value-destroying projects

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62 Securities & Exchange Commission, What Are Corporate Bonds?, *supra* note [59], 3-4; Certain categories of equity – notably preferred stock – can give its holders the right to be repaid a fixed dividend. For discussion, Ronald Gilson & David M. Schizer, *Understanding Venture Capital Structure: A Tax Explanation for Convertible Preferred Stock*, Stanford Law and Economics Olin Working Paper No. 230 (2002) (detailing the utility of preferred stock in venture capital).

63 Lucian Bebchuk & Jesse Fried, *The Uneasy Case for the Priority of Secured Claims in Bankruptcy*, 105 YALE L. J. 857 (1996) (detailing priority for repayment in bankruptcy and noting the assumption that shareholders are last to be repaid). As Bebchuk and Fried observe, restructurings can include situations in which the plan proposes to give value to shareholders. Allan C. Eberhart et al., *Security Pricing and Deviations from the Absolute Priority Rule in Bankruptcy Proceedings*, 44 J. FIN. 747 (1989); Lynn M. LoPucki & William C. Whitford, *Bargaining over Equity's Share in the Bankruptcy Reorganization of Large, Publicly Held Companies*, 139 U. PA. L. REV. 125 (1990) (detailing the consequences of equity as residual default claim holders in restructuring).

64 Scholars have noted that older investors tend to become more risk averse and demand higher compensation for risk. This makes bonds a popular choice. See, for example, Gurdip Bakshi & Zhiwu Chen, *Baby Boom, Population Aging, and Capital Markets*, 67 J. BUS. 165(1994); Michael Pollack, *How Retirees Should Invest at a Time of Low Interest Rates*, WALL ST. J. APR. 21, 2019.

65 Scholars debate the status of shareholders as owners and whether the property-rights paradigm is suitable. For some, ownership represents a poor fit. For others, the language of ownership fails to recognize the firm as one constituted by a range of stakeholders. See generally, Melvin Eisenberg, *The Conception that the Corporation is a Nexus of Contracts and the Dual Nature of the Firm*, 24 J. CORP. L. 819; Oliver Hart, *An Economist's Perspective on the Nature of the Firm*, 89 COLUM. L. REV. 1757, 1766-70 (1989); MARGARET BLAIR, OWNERSHIP AND CONTROL: RE-THINKING CORPORATE GOVERNANCE FOR THE TWENTY-FIRST CENTURY, 4-8 (1995).

66 §1129(b)(2)(B), United States Bankruptcy Code §11 U.S.C. Dish Network Corp. v. DBSD N. Am., Inc. (In re DBSD N. Am., Inc.), Nos. 10-1175, 10-1201, 10-1352, 2011 WL 350480 (2d Cir. Feb. 7, 2011).

67 ADOLF A. BERLE & GARDINER C. MEANS, THE MODERN CORPORATION AND PRIVATE PROPERTY 40–75, 110–15 (1968). See generally, John C. Coffee, Jr., *The Rise of Dispersed Ownership: The Roles of Law and the State in the Separation of Ownership and Control*, 111 YALE L.J. 1 (2001).

that fail to generate future cash flows, pay dividend/coupon payments or grow the value of the claim.[68] To protect themselves and enhance the efficiency of their capital, investors need protective measures to exercise control over managers.[69]

Secondly, the ability to buy and sell claims offers a mechanism by which investors can mitigate risk as well as exercise discipline over the firm. If markets cannot enable claims to be bought and sold smoothly, cheaply and at stable prices, investors have to worry about keeping a sticky security on their books, or being unable to buy at the right moment in response to private beliefs and research. Illiquidity adds time, uncertainty and expense to the exercise of investor choices. It also limits investors' incentives to signal their approval/disapproval of management by buying and selling their claims strategically.[70] With trading subject to a variety of transaction costs, a lack of liquidity diminishes the informativeness of prices and harms their ability to signal the quality of a firm's governance.[71]

This subsection shows that, while bondholders and shareholders confront common sources of risk (agency costs and illiquidity), they possess diverging means of controlling them. Bondholders and shareholders inhabit two different legal and economic environments when seeking to control agency costs using control and trading. Broadly, shareholders enjoy an expansive repertoire of systematic legal protections (e.g. a fiduciary duty). Bondholders, however, are left mostly to their own devices, relying on their skill in negotiating, monitoring and enforcing the indenture.

1. The Primacy and Protection of Equity

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[68] Michael Jensen, *The Agency Costs of Free Cash Flow, Corporate Finance & Takeovers*, 76 AMER. ECON. REV. 323 (1986); On the agency costs of debt, see generally, Michael Jensen & William Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure*, 3 J. FIN. ECON. 305 (1976); Stewart Myers, *Determinants of Corporate Borrowing*, 5 J. FIN. ECON. 145 (1977); Clifford Smith & Jerold Warner, *On Financial Contracting,* 7 J. FIN. ECON. 117 (1979). Discussing literature on agency costs is outside the scope of this Article. See literature review in Coffee, *supra* note [67], 5-7.

[69] *See e.g.*, Eugene Fama & Michael Jensen, *Separation of Ownership & Control*, J. L. ECON. 301, 304-305 (1983) (describing the need for residual claimants to monitor manages owing to divergence of interests between these groups).

[70] On the monitoring power of liquid markets, see, for example, Holmstrom & Tirole, *Market supra* note [57], 679-80.

[71] *See generally*, Dow & Gorton, supra note [57] 2–4) (on fundamental price efficiency); Lucian A. Bebchuk, Alma Cohen & Allen Ferrell, *What Matters in Corporate Governance?* 22 REV. FIN. STUD. 783,789–98(2009) (noting the significance of shareholder monitoring and the market for corporate control).

Dispersed shareholders need to rely on managers for running the firm, giving rise to agency costs that corporate and securities regulation seeks to control.[72] Managers may be profligate, greedy or self-serving with shareholder funds.[73] While too extensive to fully discuss here, shareholders have recourse to a slate of state and federal remedies that help to safeguard their interest and lower their costs of participating in the capital market.

Perhaps most noteworthy is the fiduciary duty of care and loyalty owed to shareholders by management.[74] Directors are also bound to embody good faith in the performance of their functions.[75] Fiduciary safeguards offer a systematic and tangible source of reassurance for investors that directorial discretion will be exercised in ways that benefit the firm rather than the pocketbooks of those running it day-to-day.[76] As Leo Strine Jnr. et al. highlight, insofar as Delaware's corporate canon is concerned, "the duty of loyalty has… been central to Delaware's approach to corporate law."[77] With directors afforded an otherwise expansive berth in how they run a firm, a fiduciary duty of loyalty, underpinned by good faith, provides a check to motivate directors to pursue firm-wide interests.[78] Rather than narrowly stopping directors from pursuing their own self-interest, Delaware's "capacious articulation" of the fiduciary standard requires them to explicitly forward the aims of the corporation and protect shareholders.[79] The fiduciary duty thus provides equityholders with a constant lever of scrutiny to monitor director actions and assure that these are aligned with their own.[80] For example, the fiduciary duty bites to curtail directors from trading on insider information against

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[72] BERLE & MEANS, *supra* note [67], 40–75.

[73] BERLE & MEANS, *supra* note [67], 40–75. Recent years have seen a shift towards classes of shares that break the link between one share, one vote. For discussion see, Dorothy Lund, *Nonvoting Shares and Efficient Corporate Governance*, 71 STAN. L. J. 687 (2019).

[74] *Cede & Co. v. Technicolor, Inc*., 634 A.2d 345, 361 (Del. 1993) (directors owe a "triad[]" of fiduciary duties, including not only the traditional duties of loyalty and care, but a third duty of "good faith.").

[75] DEL. CODE ANN. tit. 8, § 102(b)(7) (2001); *Stone v. Ritter*, 911 A.2d 362 (2006), 370-372 (stating that the duty of good faith was a component of the duty of loyalty, rather than a distinct duty in its own right); Claire A. Hill & Brett H. McDonnell, *Stone v. Ritter and the Expanding Duty of Loyalty*,76 FORDHAM L. REV. 1769, 1770-1772 (2007) (elaborating on the scope of liability under *Stone*); Melvin Eisenberg, *The Duty of Good Faith in Corporate Law*, 31 DEL. J. CORP. L. 1,11-16 (2006) (arguing for the centrality of a duty of good faith); For emphasizing that good faith constitutes a central means of evidencing compliance with the duty of loyalty see, Leo Strine Jnr. et al., *Loyalty's Core Demand: The Defining Role of Good Faith in Corporation Law*, 98 GEO. L. J. (2010). The literature is extensive.

[76] Strine Jnr. et al., *supra* note [75], 633-634.

[77] Strine Jnr. et al., *supra* note [75], 633-634.

[78] Strine Jnr. et al., *supra* note [75], 633-635.

[79] Strine Jnr. et al., *supra* note [75], 633-634.

[80] Strine Jnr. et al., *supra* note [75], 633-634.

shareholders without first disclosing it.[81] At a deeper level, it prevents directors from engaging in actions that would harm shareholder interests or result in them losing profitable opportunity.[82]

To be sure, fiduciary duties are far from a failsafe. Marcel Kahan, for example, points to their vagueness.[83] Eric Talley and Gabriel Rauterberg observe that public companies have taken enthusiastic advantage of provisions in state corporate laws that permit companies to contract out of the fiduciary duty of loyalty.[84] Nevertheless, their significance and persistence in the canon underlines the centrality of shareholder interests as worthy of systematic and inherent legal protection.

In addition to fiduciary duties, corporate law seeks to protect the value of shareholder interests through remedies that bring the weight of court scrutiny on efforts to restructure investor entitlements.[85] Courts proactively police actions that result in stockholders being shortchanged and having their claims disposed of at an undervalue.[86] This is exemplified by appraisal rights that give shareholders a remedy in case their interest is divested against their will at a low price.[87] Such a claim protects minority shareholders that do not go along with a deal (e.g. a merger) and feel that their claim deserves higher value.[88] Appraisal rights exist on the books of state laws and afford investors the right to petition the court for a hearing and assessment of their claims.[89] In theory, this judicial scrutiny

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[81] *Chiarella v. United States*, 445 U.S. at 223–26 (1980).

[82] Ivanhoe Partners v. Newmont Mining Corp., 535 A.2d 1334, 1345-47 (Del. 1987). For discussion on the duty of loyalty, Lyman Johnson, *After Enron: Remembering Loyalty Discourse in Corporate Law*, 2, 8-12 DEL. J. CORP. L. 27 (2003); Adam Winkler, *Corporate Law or the Law of Business: Stakeholders and Corporate Governance at the End of History*, 67 CONTEMP. PROBS. 109 (2004) (setting out the types of legal protections afforded to shareholders beyond corporate law).

[83] Marcel Kahan, *A Qualified Case Against Mandatory Terms in Bonds*, 89 NW. U. L. REV. 565, 595-620 (1996)(observing the vague nature of the fiduciary standard and the leeway afforded under the business judgment rule).

[84] Gabriel Rauterberg & Eric Talley, *Contracting Out of the Fiduciary Duty of Loyalty: An Empirical Analysis of Corporate Opportunity Waivers*, 117 COLUM. L. REV. 1075 (2017) (noting the weakening of the fiduciary duty in Delaware and other states through use of opportunity waivers).

[85] Sullivan & Cromwell, *Review and Analysis of 2020 Shareholder Activism and Activist Settlements*, Dec. 2, 2020, https://www.sullcrom.com/files/upload/sc-publication-review-analysis-2020-US-shareholder-activism.pdf.

[86] *See e.g.*, Cinerama, Inc. v. Technicolor, Inc. (Technicolor III), 663 A.2d 1156, 1163 (Del. 1995); In re Trados Inc. Shareholder Litigation, Consol. C.A. No. 1512-VCL, mem. op. (Del. Ch. Aug. 16, 2013) (appraisal litigation applying the entire fairness standard to a deal in which the shareholder received zero consideration).

[87] Gil Matthews, *The "Market Exception" in Appraisal Statutes*, Harvard Law School Forum on Corporate Governance, Mar. 3, 2020, https://corpgov.law.harvard.edu/2020/03/30/the-market-exception-in-appraisal-statues/.

[88] Matthews, *supra* note [87].

[89] Matthews, *supra* note [87].

creates a mechanism whereby fair value in shareholder claims is publicly protected. It highlights the state's interest in assuring that shareholder rights are properly valued, motivating compliance by directors and others *ex ante* to establish processes that produce a well-considered valuation.[90] They help reduce agency costs by maintaining management's focus on complying with fiduciary standards and achieving compensation for shareholders' entitlements.[91]

This is not to suggest that such mechanisms work perfectly, nor that their application is without controversy.[92] Scholars debate the balance of power between the firm's shareholders, managers and community of stakeholders. But they serve to briefly illustrate the commitment and resources afforded to shareholders by public institutions in a bid to secure the integrity of equity. By dint of an elaborate framework of statutes, standards and judicial attentiveness, shareholders acquire substantive support when entering the public markets.[93] Systematic legal protections mean that investors save on monitoring and negotiation, reducing the need to discount how much they charge issuers for capital.[94]

This outsize significance of equity as the core unit of governance is strengthened by a securities market in which the claims trade efficiently. The ability to buy and sell stock easily gives investors the ability to optimize the economic value of their asset as well as more fully exercise the governance levers at their disposal.

First, investors benefit from being able to trade their claims quickly and cheaply.[95] Otherwise, investors will price in the costs of "illiquidity" by requiring higher returns, reducing the amount of capital they invest, being more selective about which companies they

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[90] On the challenges of valuing shareholder claims in appraisals, Guhan Subramanian, *Appraisal After Dell*, Chap. 10, in STEVEN DAVIDOFF SOLOMON & RANDALL THOMAS (EDS), THE CORPORATE CONTRACT IN CHANGING TIMES: IS THE LAW KEEPING UP? (2019) (highlighting divergence in valuations in ensuring fair value for claims). On controlling shareholders, Ronald Gilson & Jeffrey Gordon, *Controlling Shareholders*, Stanford Law School John M. Olin Program in Law and Economics Working Paper No. 262 (2003). On the real-world use of appraisal remedies in mergers, Wei Jiang et al., *Appraisal: Shareholder Remedy or Litigation Arbitrage?* 29 J. L. ECON. 697 (2016).

[91] *See e.g.*, In re Trados Inc. Shareholder Litigation, 40-41, *supra* note [86].

[92] Subramanian, *supra* note [90].

[93] Strine Jnr et al., *supra* note [75].

[94] Edward B. Rock, *Adapting to the New Shareholder-Centric Reality*; 161 U. PA. L. REV. 1907, 1908 (2013) (noting that the "master problem" of agency costs for shareholders has largely been brought under control in the U.S.).

[95] *See for example*, Michael Barclay & Terrence Hendershott, *Liquidity Externalities & Adverse Selection*: *Evidence from Trading After Hours*, 2 J. FIN. 681 (2004) (showing the "substantially higher" costs arising on account of reduced liquidity); David Easley et al., *Liquidity, Information and Infrequently Traded Stocks*, 51 J. FIN. 1405 (1996); Ananth Madhavan, *Market Microstructure: A Survey*, 3 J. FIN. MKTS 205 (2000)(highlighting the significance of network effects and liquidity externalities for market quality). The literature is extensive.

choose, or possibly not investing at all.[96] With discounting, illiquidity can cause capital to be allocated less efficiently, undermining the production of economic value.[97] This explanation is simplified. The literature is complex. However, ensuring the creation of efficient, liquid markets constitutes a prized goal of regulatory policy.[98]

Secondly, the emphasis placed by policymakers on ensuring efficient markets can be further explained by the importance of securities prices for promoting monitoring and discipline.[99] According to theory, markets work most efficiently when prices reveal the weight of publicly available information about a firm.[100] Efficient markets produce prices that are informative about a public company.[101] By encouraging a diverse cross-section of informed and other traders to interact through trading, markets help reveal the sum of their private information through prices.[102]

The self-interested incentives of informed and other traders can work to generate a public good with the potential to reveal a company's workings in securities prices. Investors and policymakers can look to prices as a monitoring mechanism and use them to discipline a firm where prices suggest that something is amiss.

A few examples serve to illustrate this utility. For a start, informative prices ought to create incentives for managers to run the

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96 *See generally*, swath Damodaran, *Marketability and Value: Measuring the Illiquidity Discount*, Working Paper (2005)(showing that investors pay for liquid assets relative to illiquid ones and discussing factors impacting the illiquidity premium).

97 The literature here is extensive. For perspectives Franklin Allen, see for example, *Stock Markets and Resource Allocation*, *in* CAPITAL MARKETS AND FINANCIAL INTERMEDIATION 81, 81–108 (Colin Mayer and Xavier Vives eds., 1993); Jeffrey Wurgler, *Financial Markets and the Allocation of Capital*, 58 J. FIN. ECON. 187 (2000) (highlighting the positive role of stock markets in capital allocation); but see, Joseph E. Stiglitz, *The Allocation Role of the Stock Market*, 2 J. FIN. 235, 235-240 (1981) (analyzing the empirical challenge of measuring social capital allocation benefits).

98 SECURITIES & EXCHANGE COMMISSION, WHAT WE DO, https://www.sec.gov/Article/whatwedo.html#intro.

99 Holmstrom & Tirole, *supra* note [57].

100 The literature on efficient markets and the Efficient Capital Markets Hypothesis (ECMH) is extensive, highlighting (for example) behavioral biases that complicate the applicability of the ECMH. On the ECMH, see for example, Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1970) (setting out the "strong," "semi-strong" and "weak" form of the ECMH. The "semi-strong" form of market efficiency states that in efficient markets, securities prices reveal publicly available information on a company); Ronald Gilson & Reinier R. Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549 (1984). On the challenge posed by behavioral impulses as well as general critiques, see, for example, Nicholas Barberis, Andrei Shleifer & Robert W. Vishny, *A Model of Investor Sentiment*, 49 J. FIN. ECON. 307, 315□20 (1998); Sanford J. Grossman & Joseph E. Stiglitz, *On the Impossibility of Informationally Efficient Markets*, 70 AM. ECON. REV. 393 (1980) (arguing that the ECMH is contradictory as informed markets remove the incentives of traders to participate).

101 *See generally*, Fama, *supra* note [100].

102 *See generally*, Gilson & Kraakman, *supra* note [100].

firm well.[103] Where securities prices can efficiently uncover negative news, managers are under constant scrutiny from capital markets to perform and avoid risky pitfalls that reflect in lower prices.[104] As Ed Rock points out, industry practice deepens this interrelationship by linking executive pay to securities prices.[105] In tying compensation to prices (through the grant of equity/options), managers have powerful incentives to achieve publicly productive ends.[106]

The revelatory ability of prices is also at work when managers seek out ways to perpetrate a fraud on investors.[107] Cooking-the-books, hiding bad news or engaging in misconduct can harm a company's prospects and cause prices to crater when the truth comes out. In efficient markets, sudden price drops are a common signal for investors to launch high-dollar class-actions.[108] While controversial, this litigation vividly highlights the role routinely played by equity prices in helping to nudge management toward good behavior.[109]

The full gains of market efficiency and its positive effects on agency costs are actually realizable in the context of common equity. Shares are designed to be tradable. They provide holders with a standard set of entitlements as well as robust legal infrastructure for enforcing claims. This uniformity and systematization offer clarity about the content of claims. It also ensures the possibility of fungibility, such that shares in the same class are interchangeable with one

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[103] For a detailed discussion and on related literature, Yesha Yadav, *How Algorithmic Trading Undermines Efficiency in Capital Markets*, 68 VAND. L. REV. 1605, 1637-1644 (2015) (hereinafter, "*Algorithmic Trading*").

[104] Dow & Gorton, *supra* note [57], 2-4 (underscoring the feedback loop between prices and performance).

[105] Ed Rock, *supra* note [94], 1914-19120 (noting that from the 1980s CEOs have come to see an alignment of their incentives with those of shareholders); Michael Jensen & Kevin Murphy, *CEO Incentives—It's Not How Much You Pay, But How*, HARV. BUS. REV., 1990, at 138, 138-140; Michael Jensen, *Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers*, 76 AM. ECON. REV. (PAPERS & PROC.) 323 (1986) (analyzing the significance of ensuring that management is subject to market discipline through compensation arrangements).

[106] Ed Rock, *supra* note [94], 1917 (noting that shareholder-manager agency costs are largely controlled through mechanisms like equity-linked compensation).

[107] Section 10(b) of the Securities Exchange Act of 1934, 5 U.S.C. §78j(b)(2012). Halliburton Co. v. Erica P. John Fund Inc., 134 S. Ct. 2398 (2014); Basic Inc. v. Levinson, 485 U.S. 224 (1988).

[108] Elisa Mendoza & Jeff Lubitz, *Event Driven Securities Litigation*, Harvard Law School Forum on Corporate Governance, Dec. 18, 2020, https://corpgov.law.harvard.edu/2020/12/18/event-driven-securities-litigation/.

[109] See, for example, John C. Coffee, Jr., *Reforming the Securities Class Action: An Essay on Deterrence and Its Implementation*, 106 COLUM. L. REV. 1534, 1556–65 (2006); Amanda M. Rose, *The Multienforcer Approach to Securities Fraud Deterrence: A Critical Analysis*, 158 U. PA. L. REV. 2173, 2179–85 (2010); Amanda Rose, *Reforming Securities Litigation Reform: Restructuring the Relationship between Public and Private Enforcement*, 108 COLUM. L. REV. 1301(2008) (noting the role of securities class actions and the costs of the class action for compensating and deterring investorst); Urska Velikonja, *Public Compensation for Private Harm: Evidence from the SEC's Fair Fund Distributions*, 67 STAN. L. J. 331(2015) (detailing the important compensatory value of the SEC's fair fund distributions).

another.[110] Investors are spared from spending resources on studying terms and conditions, negotiating with an issuer and facing varying enforcement environments for each claim.

U.S. securities markets have invested in a sophisticated infrastructure to produce efficient trading outcomes. The public equity market is composed of a sprawling network of sixteen national exchanges and around 30-40 off-exchange alternative trading venues that offer investors enormous choice in how they execute securities transactions.[111] Trading firms compete fiercely to supply opportunities for investors to buy and sell stock, lowering transaction costs and increasing predictability.[112] The market is supported by rapid dissemination of price-related data, with regulators promising enhanced detail and speed in the information flows that go out for free to the public.[113] Equity markets enjoy robust trading and have gained popularity among a diverse cross-section of investors – both retail and institutional.[114] Securities of major public firms turnover in milliseconds (or less) millions of times a day, responding virtually instantaneously to news.[115] To be clear, the system is far from perfect. Critiques can be leveled on multiple fronts, for example, structural fragilities that arise on account of a high-speed and interconnected trading structure.[116] Broadly, however, the secondary market for

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[110] Krim v. pcOrder.com, Inc. 402 F.3d 489 (5th Cir. 2015) (noting the fungibility of stock that makes one indistinguishable from the other).

[111] For discussion of this network and implications for self-regulation, including the trade-offs between competition and governance, see generally, Yesha Yadav, *Oversight Failure in Securities Markets*, 104 CORNELL L. REV. 1799 (2019); See also, Jonathan Brogaard & Jing Pan, *Dark Pool Trading and Information Acquisition*, Working Paper (2020) (observing benefits of alternative trading systems, or dark pools, for market quality). But see, Haoxiang Zhu, *Do Dark Pools Harm Price Discovery*, *Trading*, 27 REV. FIN. STUD. 747, 749–55 (2014) (detailing the negative impact of dark pool on price discovery on regulated exchanges). A discussion is outside the scope of this Article.

[112] Albert J. Menkveld, *High Frequency Trading and the New Market Makers*, 16 J. FIN. MKTS. 712, 714-18 (2013) (observing the lowered spreads enjoyed by investors following the arrival of a high-speed automated liquidity provider).

[113] Securities and Exchange Commission, *SEC Adopts Rules to Modernize Key Market Infrastructure Responsible for Collecting, Consolidating, and Disseminating Equity Market Data*, Press Release (Dec. 9, 2020), https://www.sec.gov/news/press-release/2020-311.

[114] *See for example*, Telis Demos, *Stock Exchanges Present Opportunity as Volumes Surge*, WALL ST. J., Sept. 23, 2020 (highlighting the surge of retail investors in 2020); Justin Baer & Peter Rudegair, *Trading Surge Strains Online Brokerages*, WALL ST. J., Jan. 26, 2021.

[115] *See for example*, YCharts, Tesla Inc: Average Daily Trading Volume (31. Dec. 2020), https://ycharts.com/companies/TSLA/average_volume_30 (noting average daily trading volume of around 54 million shares). On the efficiency of equity markets, see for example, Jonathan Brogaard et al., *High Frequency Trading and Price Discovery* 27 REV. FIN. STUD. 2267, 2268-2273 (2015); For a literature review, Securities and Exchange Commission, *Staff Report on Algorithmic Trading in U.S. Capital Markets*, 30-51 Aug. 5, 2020, https://www.sec.gov/files/Algo_Trading_Report_2020.pdf (hereinafter, "Algorithmic Report"). See also, in general, Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *The New Stock Market: Sense and Nonsense*, 65 Duke L.J. 191 (2015) (providing an overview of equity market structure and its advantages and frictions).

[116] Securities and Exchange Commission, *Algorithmic Report*, *supra* note [115], 60-69.

equities provides liquid, informed and low-cost trading. Combined with the protections afforded to equity at state and federal levels, shareholders enjoy an alignment of control as well as liquidity as part of their claim.

2. Self-Reliance in Bond Claims

Bondholders must exhibit self-reliance to a far greater degree. This is despite the fact that they are especially susceptible to the risk that managers mismanage or misappropriate their capital. Unprotected by a fiduciary duty of loyalty, bondholders contend with agency costs on two fronts: (i) as between themselves and shareholders; and (ii) as between themselves and managers.[117]

Bondholders face the agency costs of debt.[118] Shareholders are motivated to use bondholder dollars to pursue risky, profitable goals. By adding debt to the balance sheet, shareholders can boost the cash available to a company to chase lucrative projects.[119] The gains of such a strategy will accrue to shareholders (through dividends and a more valuable claim). Bondholder returns, however, are capped. Shareholders enjoy the benefits without having to dilute their ownership. Importantly, if plans go awry, losses will fall heavily on creditors. If the company lacks cash, bondholders may not get paid. Shareholders are last in line to be repaid and accept the likelihood of being wiped out.[120] But failure forces creditors to the negotiating table and to reorganize and reduce the debt.[121]

The shareholder-bondholder conflict can manifest in a number of ways. For example, shareholders might seek out additional debt,

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[117] Bratton, *infra* note [131]; Yakov Amihud et al., *A New Governance Structure for Corporate Bonds*, 51 STAN. L. REV. 447, 450–460 (1999) (detailing agency conflicts affecting bondholders); Victor Brudney, *Insiders, Outsiders, and Informational Advantages under the Federal Securities Laws*, 93 HARV. L. REV. 322 (1979) (noting informational disadvantages suffered by bondholders).

[118] On the agency costs of debt, see generally, Michael Jensen & William Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure*, 3 J. FIN. ECON. 305 (1976); Stewart Myers, *Determinants of Corporate Borrowing*, 5 J. FIN. ECON. 145 (1977); Clifford Smith & Jerold Warner, *On Financial Contracting,* 7 J. FIN. ECON. 117 (1979).

[119] Richard Squire, *Shareholder Opportunism in a World of Risky Debt*, 123 HARV. L. REV. 1151, 1156-1163 (2010) (detailing risk-chasing incentives of shareholders vis-à-vis bondholders).

[120] Richard Squire, *supra* note [119],1180-1190 (2010); Richard Squire, *Strategic Liability in the Corporate Group*, 78 U. CHI. L. REV. 605 (2011).

[121] *See for example,* Sris Chatterjee et al., *Coercive Tender and Exchange Offers in Distressed High- Yield Debt Restructurings: An Empirical Analysis*, 38 J. FIN ECON. 333 (1995) (noting the willingness of bondholders to accept losses and oppressive firm behavior to avoid costly bankruptcy).

pushing existing bondholders down the priority ladder.[122] This can result in current bondholders facing a higher risk of default.[123] Managers – who may be invested in the company's equity – can take on debt to pay shareholders through dividends or buybacks, or to use free cash to pay shareholders instead of creditors. Dividend declarations constitute a particular point of contestation between bondholders and shareholders/managers, where they deplete the company's cash reserves. Relatedly, managers might reward themselves with generous bonuses, especially if the company might go bust, and they have little to lose in the long-run.[124]

Agency costs can also manifest in how management chooses to invest bondholder capital. One danger lies in asset substitution – which describes the tendency of managers to choose riskier projects than those presented to bondholders at the time of the issue.[125] Instead of investing in a stable asset, management might opt for a riskier choice that, while capable of producing more lucrative gains than the original, also amplifies default risk.[126] Asset substitution can be appealing to shareholders. They can pocket the profits if the bet pays off, but transmit the costs of failure to creditors if it does not.[127]

Managers can pose a common threat to both equity and bond investors. Agency costs that typically afflict shareholders also impact bondholders. Chava et al., underscore the costs to creditors and shareholders alike resulting from managerial efforts to use investor capital for empire building, self-enrichment and entrenchment.[128] Excessive greed can lead managers to self-dealing, fraud, embezzlement and concealment. Failure to produce high-quality information limits the ability of investors to discover wrongdoing and

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[122] *See e.g.*, Chihwa Kao & Chunchi Wu, *Sinking Funds and the Agency Costs of Corporate Debt*, 25 FIN. REV. 605. 95 (1990).

[123] Jensen & Meckling, *supra* note [118]; Smith & Warner, *supra* note [118]; Martijn Cremers et al., *Governance Mechanisms and Bond Prices*, International Center for Finance at Yale University Working Paper Number 06-30 (2006) (showing divergence of interest between shareholders and bondholders without the presence of covenants and noting that bond yields are higher where shareholder control leaves the firm exposed to takeovers).

[124] *See e.g.*, Peter Eavis, *These Companies Gave Their C.E.O.s Millions, Just Before Bankruptcy*, N.Y. TIMES, Jun. 23, 2020.

[125] Jensen & Meckling, *supra* note [118]; Amihud et al., *supra* note [117].

[126] Jensen & Meckling, *supra* note [118].

[127] Jensen & Meckling, *supra* note [118]; Amihud et al., *supra* note [117].

[128] Sudheer Chava et al., *Managerial Agency and Bond Covenants*, 23 REV. FIN. STUD. 1120 (2010); On entrenchment and empire building, see, Andrei Schleifer & Robert Vishny, *Management Entrenchment: the Case of Manager Specific Investments*, 25 J. FIN. ECON. 123 (1989) (highlighting the tendency towards managerial entrenchment for shareholders); Rene Stulz, *Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control*, 20 J. FIN. ECON. 25 (1988); Arthur Warga & Ivo Welch, *Bondholder Losses in Leveraged Buyouts*, 6 REV. FIN. STUD. 959 (1993).

price the risk of misbehavior into the cost of capital.[129] These agency risks allow managers to capture private rents and increase odds that companies default on debt as well as wipe-out shareholders.[130]

Despite these agency costs of debt, bondholders are not meaningfully protected by a system of state and federal protections outside of bankruptcy.[131] To be sure, securities laws offer the usual safeguards against fraud and manipulation or erroneous corporate disclosures. They help investors obtain information through mandated supply of issuer data.[132] As securities, bonds fall under the purview of the SEC.[133] But even here, bondholder protections can lag those common to equity. James Park highlights the historically limited participation of bondholders in securities class actions, while noting that it has begun to increase gradually over the last decade.[134] Significantly, bondholders do not benefit from a fiduciary duty of loyalty in their favor that can attenuate managerial agency costs in the day-to-day running of the firm.[135] And, unlike equity, the law does not generally aid minority bondholders whose interests may be diminished by the decisions of the majority.[136]

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[129] Chava et al., *supra* note [128].

[130] Chava et al., *supra* note [128] (detailing the importance of debt covenants in safeguarding against managerial agency costs).

[131] *See e.g.*, William Bratton, *Bond Covenants and Creditor Protection: Economics and Law, Theory and Practice, Substance and Process*, 7 EUR. BUS. ORG. L. REV. 39, 40-45 (2006)(highlighting the largely contractual nature of bondholder protection).

[132] *See e.g.*, James Park, *Bondholders and Securities Class Actions*, 99 MINN. L. REV. 585, 586-589 (2014)(highlighting the growing role of bondholders in securities class actions but also showing that they have tended to play a muted role historically); *Insider Trading In Junk Bonds*, 105 HARV. L. REV. 1720, 1720-1725 (1992) (noting insider trading in junk bond markets and the SEC' efforts to tackle insider trading had seen scant action in this area); Laurie P. Cohen & Kevin G. Salwen, *SEC Starts Insider-Trading Probe in Junk- Bond Market*, WALL ST. J., Apr. 10, 1991. Felice Friedman, *Regulation of Fixed Income Securities Markets in the United States* (Apr. 2004), 21-25, http://documents1.worldbank.org/curated/pt/473991468761716543/121521322_20041117183544/additional/wps3283markets.pdf.

[133] Friedman, *supra* note [132], 21.

[134] Park, supra note [132], 586-589.

[135] Jared Ellias & Robert Stark, *Bankruptcy Hardball*, CAL. L. REV (*forthcoming*) (highlighting the *Gheewala* decision and noting the diminishing legal protections for creditors even around the zone of insolvency).

[136] *See generally*, Victor Brudney, *Corporate Bondholders and Debtor Opportunism*, 105 HARV. L. REV. 1821 (1992) (noting bargaining weaknesses faced by bondholders); John Coffee & William Klein, *Bondholder Coercion: the Problem of Constrained Choice in Debt Tender Offers and Recapitalizations*, 58 U. CHI. L. REV. 1207(1991) (arguing that consent solicitation can be coercive and a prisoner's dilemma). On uncertain empirical evidence for coercion, Jamie Anderson-Parson, *Bond Indenture Consent Solicitations as a Debt Management Tool*, 3 INT'L J. FIN STUD. 230 (2015). Kahan & Tuckman, *infra* note [144] (noting lack of conclusive evidence on coercion); Sris Chatterjee et al., *Coercive Tender and Exchange Offers in Distressed High- Yield Debt Restructurings: An Empirical Analysis*, 38 J. FIN ECON. 333 (1995) (analyzing coercive aspects of the process but also underscoring benefits for bondholders of bond tenders and consent solicitations).

Rather, bondholders are expected to protect themselves privately against agency costs by using their contract with the issuer. This means that each bond must provide terms and conditions that are negotiated and tailorable to manage the risks posed by the firm, its shareholders and managers. In the context of corporate debt, scholars have pointed to the power of creditor control – using the hard and soft constraints created by the debt – to act as a source of monitoring and discipline on managers and shareholders.[137] By agreeing *ex ante* to a set of conditions against which the debt is extended, creditors stipulate the discretion available to managers and assure themselves of a tolerable level of default risk.[138]

Bond contracts typically contain restrictions designed to curb the ability of managers to take actions that add to pre-agreed levels of risk.[139] These include terms that limit shareholder dividends, change of control, asset sales, capital expenditures, borrowing or giving new lenders priority over existing ones. Such terms are "incurrence-based," designed to prevent the occurrence of a specified event/state. The borrower can also be obliged to ensure a level of continuing financial solvency, a pre-agreed debt-equity ratio or cash balance. "Maintenance covenants" represent the paradigmatic "trip wire," giving bondholders a way of continuously monitoring an issuer for signs that it may be faltering.[140] Maintenance covenants afford lenders the power to punish debtors if, for any reason, the borrower falls outside of compliance. While incurrence-based covenants lead to discipline only when an issuer is actively engaging in a prohibited activity (e.g. declaring a dividend), maintenance covenants can lead to defaults in circumstances even outside of the issuer's control.[141] In light of COVID-19, for example, a number of companies sought to postpone their reporting obligations or to substitute 2019 sales figures for their

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[137] George Triantis & Ronald Daniels, *The Role of Debt in Interactive Corporate Governance*, 83 CALIF. L. REV. 1073 (1995); Douglas Baird & Robert Rasmussen, *Private Debt and the Missing Lever of Corporate Governance*, 154 U. PA. L. REV. 1209 (2006); Frederick Tung, *Leverage in the Board Room: The Unsung Influence of Private Lenders in Corporate Governance*, 57 UCLA L. REV. 115 (2009); Michael Roberts & Amir Sufi, *Control Rights and Capital Structure: An Empirical Investigation*, 4 J. FIN. 1657 (2009).

[138] Baird & Rasmussen, *supra* note [137], 1212-1220; Tung, *supra* note [137] 118-130.

[139] Michael Bradley & Michael Roberts, *The Structure and Pricing of Corporate Debt Covenants*, 5 Q. J. FIN. 1 (2015); Marcel Kahan & Bruce Tuckman, *Private vs. Public Lending: Evidence from Covenants* 11–13 (UCLA Anderson Grad. Sch. Mgmt., Paper No. 13-93, 1993).

[140] On covenants as "trip wires" in debt governance for credit agreements, Greg Nini et al., *Creditor Control Rights, Corporate Governance and Firm Value*, 25 REV. FIN. STUD. 1713 (2012); Tung, *supra* note [137].

[141] William Whelan III, *Bond Indentures and Bond Characteristics*, in WILLIAM MAXWELL & MARK SHENKMAN (eds.), LEVERAGED FINANCIAL MARKETS (2010).

2020 reporting as a way to avoid triggering a possible default on their bond maintenance covenants.[142]

Tailorable contractual protection allows bondholders to craft terms to reflect the riskiness of the issuer and its management.[143] Rather than look to a standard set of entitlements (e.g. one share, one vote) as the basis for investor protection, contractually based controls can generate a more expansive and deliberate menu of options. Terms can also be amended, increasing or decreasing the intensity of control depending on a company's performance.[144] Issuers and investors can design more efficient contractual safeguards. These can evolve and be renegotiated, becoming less restrictive if the company's cash flows allow it to take larger risks for a chance to earn greater profits.[145]

Reflecting this tailorability, indenture terms in public bond markets vary in their strictness depending on the credit risk that the issuer or the particular bond issue poses. Firms rated as falling within the "junk" category (BBB- and below) face tougher constraints than those carrying a top AAA rating. The higher the rating usually, the less onerous the package of covenants, with safer companies facing restrictions mostly on change of control or major asset sales.[146] As issuers and bond issues slide down the ratings ladder, contractual constraints harden to include heavier restrictions, such as limitations on dividends, transactions between subsidiaries/affiliates, investments and stronger proscriptions on further borrowing.[147]

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142 Nikou Asgari and Kaye Wiggins, *Debt Investors Let Borrowers Go Back to the Future*, FIN. TIMES, JUN. 16, 2020.

143 Patrick Bolton and David Scharfstein, *Optimal Debt Structure and the Number of Creditors*, 104 J. POL. ECON. 1(1996) (on optimal contracting in debt); Jensen & Meckling, *supra* note [68]; Myers, *supra* note [68]; Smith & Warner, *supra* note [68].

144 Marcel Kahan & Bruce Tuckman, *Do Bondholders Lose from Junk Bond Covenant Changes?* 66 J. BUS. 499, 500-505 (1993) (observing that successful issuers might see a reduced need for covenants as their finances improve through the course of the debt).

145 Kahan & Tuckman, *supra* note [144], 500-505.

146 Ari Blaut, *Market Trends 2017/18: Investment Grade Debt Offerings*, Sullivan & Cromwell (June 2018), https://www.sullcrom.com/files/upload/Blaut_LexisPracticeAdvisor_InvestmentGradeDebtOfferings_June2018.pdf. But see, Joy Begley, *Restrictive Covenants Included in Public Debt Agreements: An Empirical Investigation* (Unpublished Manuscript) (1994) (noting that for risky firms, the cost of covenants tends to much higher as these firms are focused on growth. In this study, less risky firms showed a thicker set of covenants than those that were issuing subordinated (lower ranked) debt, owing to the relatively higher cost attaching to the debt issued by the riskier firm).

147 Blaut, *supra* note [146]. Recent years have seen some easing in this process of contractual ordering. The expansive availability of credit post-2010 has resulted in a loosening of covenants attaching even to high yield offerings. As Moody's has observed, the quality of covenants in junk-rated debt has fallen to record lows. This rise of so-called "cov-lite" bonds over the last decade has prompted concern about the ability of bondholders to monitor issuers and to punish risky behavior through incurrence covenants. Kadhim Shubber, *Concern over Waning Use of Covenants in Debt Markets*, AUG. 17, 2015.

Importantly, even straight-forward restrictions can be drafted in ways that reflect tailoring and complex drafting.[148] The outward commonality of certain terms – for example, a restriction on dividend declarations – can unspool into a term that is constructed in such a way as to be unique to a single issuer and bond issue.

This complex drafting can reveal itself through contract terms that begin by stipulating a standard prohibition on certain activity (e.g. dividends), conditions to its application, before moving to include carve-outs common to the category of issuer and then further exceptions that are specific for the firm.[149] For example, contract terms routinely allow start-up firms to offer up equity as collateral for future borrowing.[150] Covenants can also be particular about which of the issuer's subsidiaries are also subject to the indenture ("restricted subsidiaries") and which are not ("unrestricted" subsidiaries). Decisions about which subsidiaries should fall into which category can be a matter of economic and legal significance. Including a loss-making subsidiary within the scope of the contract can damage an issuer's ability to comply with solvency covenants. If accounts are presented on a consolidated basis, the inclusion of unprofitable subsidiaries worsens the financial picture. A firm benefits by negotiating terms, definitions and carve-outs that optimally reflect its corporate profile and the level of risk that bondholders will accept.[151]

While contract provides the mainstay protection for bondholders, it has nevertheless faced criticism about its effectiveness. First, scholars have long pointed to the underenforcement problem in bond contracts as a feature rather than bug of corporate bond markets.[152] Collective action costs mean that single bondholders will lack the motivation to litigate difficulties on behalf of themselves and other investors.[153] The practical steps involved in enforcing bond terms are cumbersome and make the processes expensive and unappealing. To declare an event of default, holders of at least 25% of the bonds have to give a notice of default and the issuer some time to cure it (e.g. 30 days). The indenture trustee (on which more below) plays a role in launching a suit on behalf of the bondholders. Holders of 25% of the bonds must instruct the trustee to do so, as well as provide protection

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148 Kahan, *supra* note [83] (noting the difficulty in pricing the terms of the indenture).

149 De Franco et al., *infra* note [188]; Whelan III, *supra* note [141], 4-6.

150 Whelan III, *supra* note [141], 4-6.

151 Whelan III, *supra* note [141], 4-6.

152 Bratton, *supra* note [131]; Marcel Kahan & Edward Rock, *Hedge Fund Activism in the Enforcement of Bondholder Rights*, 103 NW. U. L. REV. 281, 284–286 (2009).

153 Amihud et al., *supra* note [117], 450-451; Marco Becht et al., *Corporate Governance & Control*, ECGI - Finance Working Paper No. 02/2002 (2002) (describing collective action between claimholders in corporate governance).

for the indenture trustee through an indemnity. If bondholders wish to pursue a private remedy, they must find resources to locate and organize holders of 25% of the bond holders and cover the exposure of the trustee – or ensure that a majority of them can order the trustee to bring a case.[154] The consequence, unsurprisingly, is an "historic underenforcement" problem in bond markets, where violations go largely unnoticed and unpunished.[155]

There are signs that this state of apathy may be shifting somewhat. Importantly, Kahan and Rock credit hedge fund activists for engaging in a slew of high-profile enforcement actions for default of bond terms. While resulting in a growing number of actions and greater attention being paid to the consequences of default, the gains to market quality from these efforts are less clear-cut. According to Kahan and Rock, activists search for and purchase bonds that are already in default and use these as a staging ground for opportunistic interventions. Another study by Guo et al. observes that gains from these strategies accrue mostly to hedge fund activists themselves. The targets for enforcement are typically companies that are more likely to have cash and less likely to be close to bankruptcy. In other words, private enforcement by hedge funds is strategically designed to capture gains from those that can pay.[156]

Mechanisms to overcome collective action costs in bond markets have proven to be ineffective. Bond markets look to the indenture trustee to monitor and enforce claims on behalf of bondholders.[157] Trustees are required in public bond offerings.[158] They are supposed to take care of administrative tasks (e.g. signing documents) and to coordinate action on behalf of bondholders, such as by filing an action against an issuer.[159] But their practical usefulness has long been debatable. Trustees are not obliged to monitor the debt on an ongoing basis, meaning that bondholders have to maintain surveillance privately.[160] Trustees also possess weak incentives to vigorously represent their bondholders. One, they do not owe a fiduciary duty of care and loyalty to bondholders. Crucially, their

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154 Kahan & Rock, supra note [152], 298-300.

155 Kahan & Rock, *supra* note [152], 283.

156 Yu Gao et al., *Hedge Fund Activism in the Corporate Bond Market: Evidence from Bondholders' Responses to Delay in Financial Reporting*, Working Paper (Apr. 2018) (the author examined defaults in relation to financial reporting and filing). A full discussion is outside the scope of this Article.

157 The role of the trustee has been established by the Trust Indenture Act 1939, 15 U.S.C. §§ 77aaa–77bbbb, § 77jjj.

158 Trust Indenture Act 1939, 15 U.S.C. §§ 77aaa–77bbbb, § 77jjj.

159 Amihud et al., *supra* note [117], 450-455; Kahan & Rock, *supra* note [152]; Steven Schwarcz & Gregory Sergi, *Bond Defaults and the Dilemma of the Indenture Trustee*, 59 ALABAMA R. REV. 1037 (2008).

160 *See e.g.*, George Corey et al., *Are Bondholders Owed a Fiduciary Duty?* 18 U. FL. ST. REV. 971, 980 (1991) (noting the limited obligations owed by bondholder trustees during period of solvency).

compensation is limited.[161] As a result, scholars have recommended reform of the indenture trusteeship so bondholders can have access to a mechanism for reducing collective action problems that has the potential to actually work in practice.[162]

Secondly, the flexible quality of contractual protection can result in a dismantling of minority investor rights where a simple majority of bondholders decide to change the terms of the indenture. On the one hand, to guard against this risk, the Trust Indenture Act requires that any amendments to the payment-related terms of a bond must gain essentially unanimous consent from bondholders.[163] This creates extreme contractual rigidity.[164] However, the law takes a more permissive approach in relation to the bond's non-payment terms (the control covenants). Issuers can amend non-payment control provisions provided they secure consent from a majority of bondholders.[165] This raises the possibility that bondholders get strong-armed into accepting a sweeping restructuring of their control rights so long as a majority consents.[166] In equity markets, disenfranchised minorities are afforded legal protection. As noted above, this can happen through an appraisal of their claims by the court.[167] In bond markets, however, the contractual nature of the claim precludes such safeguards.

To summarize this subsection, securities markets create a bifurcation in the strength of protections enjoyed by equityholders on the one hand and bondholders on the other. Shareholders represent a fortified constituency whose ability to enforce claims is subsidized by laws and a dedicated court system. Additionally, holding a standardized instrument, shareholders enjoy ample liquidity, supported by a network of trading venues, choice and transparency. Bondholders inhabit a self-reliant ecosystem. Facing agency costs from both managers and shareholders, they are protected by their contract with the issuer and their ability to tailor terms that reflects their desire for creditor control. Minority investors enjoy no safeguards for control

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161 Schwarcz & Sergi, *supra* note [160].

162 Amihud et al., *supra* note [117] (suggesting a supertrustee in order to impose stronger monitoring and disciplinary powers); Schwarcz & Sergi, *supra* note [160] (noting poor incentives for trustees to perform, including an absence of a fiduciary duty for bondholders).

163 Section 319(b), 15 U.S.C. § 77bbb (1939).

164 *See generally*, William Bratton & Adam Levitin, *The New Bond Workouts*, 166 PA. L. REV. 1597 (discussing the role of exchange offers in light of the impracticability of informal workouts of bond contracts given the strictness of the TIA).

165 Kahan & Tuckman, *supra* note [144].

166 On the bond tender offer and consent solicitation process, 15 U.S.C. § 240.14d-1(a) (2008); 15 U.S.C. § 240.14e-1(a)- (2008); Charles Haag & Zachary Keller, *Honored in the Breach: Issues in the Regulation of Tender Offers for Debt Securities*, 9 NYU J. L. BUS. 199(2012).

167 *See for example,* William Carney & Keith Scharfman, *Appraisal in Delaware: Possible Improvement From the Bottom Up?* Working Paper (Mar. 11, 2018).

rights. This emphasis on contract as mainstay, forces bondholders to confront a trade-off between tailorable creditor control and liquidity, diminishing their ability to enjoy the gains of either value.

B. *Tailorability versus Tradability*

This subsection lays out the central dilemma confronting bondholders where contract is the principal basis for addressing the agency cost of debt. When investors closely tailor a contract to a firm/issue, resulting in an indenture that becomes non-standard, this claim becomes harder to trade in the secondary market.

In its second part, we show that bond market structure reflects an imperfect set of compromises to manage this trade-off in practical terms. Bond indentures are a mish-mash of tailored provisions, industry boilerplate and recycled language from past firm issues. Neither closely tailored nor highly standard, bond contracts are often dense, complex documents that fail to unlock liquidity or deliver effective, enforceable creditor control. Conversely, secondary trading mechanisms must enable the buying and selling of tailorable claims between investors. Trading in bonds takes place largely off-exchange, intermediated by financial firms with client networks, capital and expertise to create a market. The end result, however, delivers an unsatisfying outcome for investors whose access to liquidity is beset with opacity, expense, uncertainty and delay.

1. Creditor Control vs. Liquidity

Bondholder protection depends on the workability of tailorable contracts to safeguard against default risk and agency costs. Because bondholders do not benefit from a fiduciary duty of loyalty and minority claims are not protected by judicial review, ensuring effective contract drafting represents a singularly important economic task.[168]

Contract tailoring means that bonds can lose a number of features that help make them more liquid.[169] First, the claim becomes

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[168] Adam Badawi, *Debt Contract Terms and Creditor Control*, Working Paper (Nov. 20, 2018) (highlighting the importance of bondholder contracting and noting that bondholders are sensitive to legal changes that result in diminishing their rights).

[169] Brian Chappatta, *The Bond-Trading Revolution Is Real This Time*, BLOOMBERG, FEB. 9, 2021 (highlighting the complexity of bond trades that require personal negotiation as a preclusive factor to electronic trading); Charles Whitehead, *The Evolution of Debt: Covenants, the Credit Market, and Corporate*

less standard. This can add complexity to the task of substituting one security for another. Unlike common equity, bonds issued by the same company even for similar maturities may not be economically interchangeable (e.g. repayment priorities may differ, one issue may be collateralized while another is not). Public issuers routinely have multiple bond issues outstanding with varying maturities and contract terms. In February 2021, for example, AT&T had around 224 distinct issues in the market.[170] Overall, in early 2021, U.S. markets were home to around 300,000 unique bonds.[171] When seeking to trade a bond parties are liable to confront logistical challenges when looking for available securities that conform to desired risk parameters.[172]

Secondly, contractual tailoring can increase the transaction costs involved in trading a bond. Investors need to understand detailed particulars. This process adds time, interpretative uncertainties and imports related concerns about valuation into their decision to buy or sell.[173] Unlike common equity, where individual claims are standard and whose terms and protections are well-known, building a high degree of tailorability into indentures can heighten the claim's inherent complexity and reduce its ease of comparability with others.

Practically, bond indentures are usually lengthy and detailed documents.[174] Routinely totaling more than 100 pages, even straightforward covenants (e.g. limitation on dividends) can reveal layers of meaning (e.g. which subsidiaries will be covered by the limitation).[175] Indeed, far from being a clear roadmap defining the relationship between issuer and investor, the indenture often suffers from ambiguity and incompleteness. Stephen Choi and Mitu Gulati criticize the view that contracts between sophisticated parties always will offer a precise accounting of their bargain, or that when a contract is lacking or contains a mistake, then parties will renegotiate and improve upon

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Governance, 34 J. CORP. L. 641, 650–60 (2009) (linking liquidity and covenants in the context of the loan markets).

[170] THE ECONOMIST, *A New Epoch for Retail Investors Is Just The Beginning*, FEB. 6, 2021; See also, Bruce Mizrach, *Analysis of Corporate Bond Liquidity*, FINRA Corporate Bond Research Note (2015), https://www.finra.org/sites/default/files/OCE_researchnote_liquidity_2015_12.pdf (reporting that 33,945 unique bonds were reported to FINRA has having been traded in the first nine-months of 2015. In December 2017, companies in the Standard & Poor's 500 had 11,900 separate issues. Hendrik Bessembinder et al., *A Survey of the Microstructure of Fixed-Income Markets*, 55 J. FIN. Q. A. 1(2020), 14.

[171] THE ECONOMIST, *A New Epoch*, *supra* note [170].

[172] THE ECONOMIST, *A New Epoch*, *supra* note [170].

[173] Peter Feldhütter et al., *The Value of Creditor Control in Corporate Bonds*, 121 J. FIN. ECON. 1 (2016) (on the valuation of creditor control rights); Rainer Jankowitsch et al., *The Determinants of Recovery Rates in the US Corporate Bond Market*, 114 J. FIN. ECON. 155, 159-160 (2014); Leland Crabbe, *Event Risk: An Analysis of Losses to Bondholders and "Super Poison Put" Bond Covenants*, 46 J. FIN. 689 (1991) (showing that the inclusion of event risk covenants reduced the cost of capital for firms).

[174] Kahan & Gulati, *infra* note [186].

[175] Whelan, *supra* note [141].

their initial effort. Choi and Gulati argue that this assumption falls apart under the weight of market practice.[176] Widely used contractual terms can be misunderstood or lack meaning.[177] Language may be unclear or ambiguous.[178] Bond contracts are also incomplete, agreed at a point in time and supposed to endure for years.[179]

Contractual complexities increase investor transaction costs when it comes to trading.[180] Investors must read the terms, interpret them and decide whether the transaction is worthwhile.[181] To state the obvious, close reading is crucial for bondholders. It reduces information asymmetries: the issuer will have more information about itself than the investor and be reluctant to disclose problems. Further, the seller may be looking to offload a bad security to the buyer.[182]

Understanding detail also helps investors determine whether the contract is workable from the standpoint of promised entitlements. Importantly, contractual complexities can impact both senior as well as lower-rated securities. In theory, highly-rated debt is less sensitive to information.[183] Because the debt is safer and should pay out,

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176 Stephen Choi & Mitu Gulati, *Contract as Statute*, 104 MICH. L. REV. 1129 (2006); Kahan & Gulati, *Cash America*, *supra* [186].

177 Stephen Choi et al., *The Black Hole Problem in Commercial Boilerplate*, 67 DUKE. L. J. 1 (2017) ("The first effect is "rote usage": some standardized terms may get used by rote so consistently that they lose a shared meaning and become a ritualized legal incantation…")); MITU GULATI & ROBERT SCOTT, THE THREE AND A HALF MINUTE TRANSACTION: BOILERPLATE AND THE LIMITS OF CONTRACTUAL DESIGN, 109-120 (2013); On the role and use of standard-form terms in contracts, Lon Fuller, *Consideration and Form*, 41 COLUM. L. REV. 799, 801–10 (1941). For the classic account of the challenges and considerations involved in interpreting contracts, Alan Schwartz & Robert E. Scott, *Contract Theory and the Limits of Contract Law*, 113 YALE L. J. 541, 560–70 (2003). The literature on contract interpretation is extensive.

178 Kahan & Gulati, *Contracts of Inattention*, *infra* note [186]; Stephen Choi et al., *The Dynamics of Contract Evolution*, John M. Olin Law & Economics Working Paper No. 605, (2012) (highlighting the repeat use of in-house template contracts in sovereign bonds and describing a process of how these template standards can change after shocks, leading to new standards).

179 Kahan & Tuckman, *supra* note [144] (on the reasonableness of issuers seeking to amend contract terms over the life of a bond). In the case of loans, Michael Roberts and Amir Sufi find that over 90% of long-term private credit agreements entered into by public companies were renegotiated prior to maturity. Michael Roberts & Amir Sufi, *Renegotiation of Financial Contracts: Evidence from Private Credit Agreements*, 93 J. FIN. ECON. 159 (2009).

180 Kenneth Ayotte & Patrick Bolton, *Covenant Lite Lending, Liquidity and Standardization of Financial Contracts*, Working Paper (2009) (investigating standardization as a technology that reduces reading costs for debt buyers in the context of securitization generally); Yakov Amihud & Haim Mendelsohn, *Liquidity and Asset Prices: Financial Management Implications*, 17 FIN. MGM'T. 5 (1988) (positing the costs of reading on asset prices and liquidity).

181 Douglas Gale, *Standard Securities*, 59 REV. ECON. STUD. 731 (1992).

182 Ayotte & Bolton, *supra* note [180].

183 *See for example,* Gary Gorton & George Pennachi, *Banks and Loan Sales: Marketing Non-Marketable Assets*, NBER Working Paper 3551 (1990); Holmstrom & Tirole, *supra* note [57].

investors lack an incentive to collect information on its credit risk.[184] But this assumption may be problematic. Kenneth Ayotte and Patrick Bolton caution that the terms of higher-rated securities ought to be studied especially carefully. Because they promise safety and protection from default, the contract must be probed to see if it can deliver in practice.[185] Understanding the particulars of even a safe claim means that trading it requires time, analysis and effort.

2. Inefficient, Opaque and Costly Tradability

Industry practice reflects compromises between contract tailorability and liquidity with the consequence that investors achieve either goal effectively: (i) indentures often contain a hodge-podge of tailored terms, standardized boilerplate and language from a firm's earlier issues. Documents appear dauntingly complex, dense and lengthy; and (ii) to trade such claims, bonds are mostly intermediated by financial firms off-exchange. While this system enables trading, it is also inefficient, opaque and costly.

A Mix of Tailoring, Boilerplates and Past Practice: Indentures are complex documents that usually come with a mix of tailoring, standard boilerplate terms and language from past issues. Some standardization can help increase comparability and improve the liquidity of the claim. It should not be surprising that market practice would seek to build it into otherwise tailorable instruments. For example, bond contracts exhibit some standardization in terminology. With standard terms and definitions, investors can more easily understand the content of claims as well as potentially determine whether they can act as substitutes for one another.[186] Industry has

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184 *See e.g.*, Tri Vi Dang et al., *The Information View of Financial Crisis*, Working Paper (Jul. 2019), 1-2 ("A security is said to be information sensitive if the benefit of producing costly private information about a security's payoff outweighs the cost; otherwise, the security is information-sensitive.").

185 Ayotte & Bolton, *supra* note [180].

186 Phillipe Aghion & Patrick Bolton, *An Incomplete Contracts Approach to Financial Contracting*, 59 REV. ECON. STUD. 473(1992); Julian Nyarko, *Stickiness & Incomplete Contracts*, U. CHI. L. REV. (*forthcoming*)(2020)(empirically showing high levels of stickiness in relation to forum-selection clauses in bonds); Gus de Franco et al., *Similarity in Bond Covenants*, Working Paper (2016) (showing recurring similarities in the bonds issued by the same issuers); Marcel Kahan & Michael Klausner, *Standardization and Innovation in Corporate Contracting (or "The Economics of Boilerplate")*, 83 VA. L. REV. 713 (1997); Marcel Kahan & Michael Klausner, *Anti-Takeover Provisions in Bonds: Bondholder Protection or Management Retrenchment?* 40 UCLA. L. REV. 931 (1993) (highlighting high levels of stickiness in bond agreements). But see, Marcel Kahan & Mitu Gulati, *Cash America and the Structure of Bondholder Remedies*, CAP. MKTS. L. J. (*forthcoming*) (on *Cash America* decision and the action taken by bondholders to remedy unfavorable drafting); Marcel Kahan & Mitu Gulati, *Contracts of Inattention*, NYU Law and Economics Research Paper No. 19-35 (2019) (exploring dynamics where investors fail to fully understand the significance of a contract term and the potential for revision).

produced model indentures – with law firms and underwriters also having their own in-house models.[187] Further, issuers frequently reuse language from previous bond offerings and that used by peer firms.[188] Marcel Kahan and Michael Klausner observe that using common terms can encourage comparability, lowering the cost of investigating and evaluating claims.[189] Importantly, this reliance on boilerplates and shared language can improve the liquidity of bond claims. As shown by de Franco et al., commonality between a firm's past and current issues as well as between its issues and those of peer firms results in improved liquidity for claims.[190] This practice is also advantageous for issuer firms. With investors enjoying greater liquidity, issuers benefit by taking advantage of lower borrowing costs.[191]

Compromises in Trading Structure: Rather than transact quickly, cheaply and transparently on exchanges, complexity in bonds contributes to trading occurring mostly over-the-counter (OTC) intermediated by financial firms, known as "dealers."[192]

OTC markets rely on a more informal, decentralized system for matching and executing trades. Dealers match investors with one another using their own internal book of clients as well as harnessing the wider network of dealers beyond their own firm. In bond markets, this system of secondary trading means that dealers fulfill two roles: (i) matching buyers and sellers; and (ii) providing liquidity to investors by trading using dealers' own money.[193] OTC bond markets operate using a system where investors submit a request to dealers to supply

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187 THE MODEL NEGOTIATED COVENANTS AND RELATED COVENANTS, 61 BUS. L. 1439, 1440-1441 (2006).

188 Gus de Franco et al., *supra* note [186]); On boilerplates, Nyarko, *supra* note [186]; Kahan & Klausner (1993), *supra* note [186].

189 Kahan & Klausner (1993), *supra* note [186].

190 De Franco et al., *supra* note [186].

191 De Franco et al., *supra* note [186]. De Franco et al.'s study also finds that issuers that use the same legal counsel tend to have greater similarity in bond covenants than those that do not.

192 THE ECONOMIST, *A New Epoch*, *supra* note [170] (noting complexity and non-fungibility of bonds as contributing to difficulty of building a market); Bessembiner et al., *supra* note [170]("with few exceptions…fixed income instruments trade in over-the-counter, dealer-orientated search markets). On market making and automated trading, Albert J. Menkveld, *High Frequency Trading and the New Market-Makers*, 16 J. FIN. MKTS. 712, 714 (2013). On the role and risks of market-makers, see e.g., Lawrence Glosten & Larry Harris, *Estimating the Components of the Bid-Ask Spread*, 21 J. FIN. ECON. 123 (1987). The literature is extensive.

193 Bessembinder et al., *supra* note [170], 2-4; Larry Harris, *Transaction Costs, Trade Throughs, and Riskless Principal Trading in Corporate Bond Markets*, Working Paper (2015), 2-4. A Dealer that is asked by a Mutual Fund to sell 1000 bonds of a Company can fulfill this order in one of three main ways: (i) the Dealer can buy the bonds from the Mutual Fund and take on the risk. However, the purchase also shifts the credit risk attaching to the Company from the Mutual Fund to the Dealer; (ii) the Dealer can search its own client network for a Buyer. Alternatively, the Dealer can connect with other peer dealers in order to find a counterparty; or (iii) the Dealer might already have lined up a Buyer in advance and simply matches the Mutual Fund with the Buyer in a perfectly offsetting transaction.

their best quotes for a particular order – for example, an order to sell 1000 bonds of the Company. Once an investor privately receives replies from dealers, they can select the one that offers the best deal.[194]

Importantly, unlike equity, the prices that dealers quote are not binding. Equity markets continually and publicly announce prices for buying and selling which, once advertised, are binding as soon as an order matches at that price. By contrast, bond prices are private and indicative. Dealers can modify the price or retract their offer.[195] Even when an investor returns a response to a dealer, there is no guarantee that the trade will be fulfilled at that price.[196]

This system of trading creates costs. First, it elevates reliance on a system of dealers and makes execution quality contingent on their networks and practices.[197] Studies reveal that dealers do not provide uniform execution quality. Rather, they tend to provide higher execution quality to their most frequent customers. Maureen O' Hara et al., show that the more active customers of a dealer are able to obtain "significantly" better execution quality relative to less active ones. O'Hara et al. underscore the concentrated nature of the dealer market, with the top-three dealers having around 92% of the market share for their sample bond. Trading with the top dealer worsens outcomes for less active investors – and concentration by itself – results in poorer execution for the corporate bond market as a whole.[198]

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[194] This describes a Request-for-Quote system that is used in over-the-counter markets and now largely facilitated through electronic interfaces, rather than using telephones. For discussion, Bessembinder et al., *supra* note [170], 3-4. A dealer might also proactively send out quotes to its main customers, indicating the prices and volume of bond securities that it is willing to buy or sell. Hendrik Bessembinder et al., *Capital Commitment and Illiquidity in Corporate Bonds*, 73 FIN. ECON. 1615 (2018) (the authors study a shift away from bank-affiliated dealers and towards non-banks in corporate bond markets. The authors posit that post-Crisis regulations may be a contributing factor to banks reducing their capital commitment); Jack Bao et al., *The Volcker Rule and Market Making in Times of Stress*, 130 FIN. ECON. 95 (2018) (pointing to the role of the Volcker Rule in pushing a changing of the composition of bond dealers away from banks and toward asset management firms).

[195] Bessembinder et al., *supra* note [170], 3-4; Harris, *supra* note [193], 4-7.

[196] Bessembinder et al., *supra* note [170], 3-4

[197] Bond markets have seen the introduction of some electronic trading platforms. The trend, although growing during the COVID-19 pandemic, remains nascent. In one recent paper, scholars noted that electronic trading comprised around 14% of the market's volume. Maureen O'Hara & Xing Zhou, *The Electronic Evolution of Corporate Bond Dealers* (*forthcoming*, Journal of Financial Economics) (2020) (noting that electronic trading, while growing, still remains "small and segmented").

[198] Maureen O'Hara et al., *The Execution Quality of Corporate Bonds*, Working Paper (2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2680480; See also, Terrence Hendershott et al., *Relationship Trading in OTC Markets*, Working Paper (2015) (noting the significance of an investor's network of dealers in determining the quality of execution). See also, Marco di Maggio et al., *The Value of Trading Relations in Turbulent Times*, 124 FIN. ECON. 266 (2017) (They find that dealers charge clients "significantly" more than what they charge one another).

Secondly, bond trading is expensive – in marked contrast to equity.[199] The concentrated structure of the market can reduce motivation between dealers to be competitive on matters of price.[200] Limited transparency can also result in diminished scrutiny of elevated transaction prices.[201] Dealers face a number of costs when seeking to provide liquidity to corporate bonds.[202] Louis Ederington et al., observe that corporate bond dealers charge large spreads when they have to act as agents to seek out the right bonds for clients, particularly for bigger trades.[203] Search costs can be high as dealers have to look through their networks to find a counterparty.[204] Dealers also take risks onto their balance sheets.[205] In his study into the transaction costs of corporate bond trading, Larry Harris concludes that 43% of customer trades do not get the cheapest price for their orders. Put differently, dealers were putting a mark-up on the trades that they were intermediating, even in situations where they were not directly taking any risk onto their books.[206] According to Harris, in

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[199] For municipal bonds, Larry Harris and Michael Piwowar show that the bid-ask spread – or the difference in price between what a dealer quotes to buy versus what it quotes to sell – for a $20,000 trade was 2% ($400); To compare, Tarun Chordia et al., show that the median bid-ask spread in equities was about 3.3 cents. See, Larry Harris & Michael Piwowar, *Secondary Trading Costs in the Municipal Bond Market*, 61 J. FIN. 1361 (2006). Tarun Chordia et al., *Liquidity and Market Efficiency*, 87 J. FIN. ECON. 249 (2008).

[200] *See generally*, William Christie & Paul Schultz, *Why Do NASDAQ Market-Makers Avoid Odd-Eighths Quotes*, 124 49 J. FIN. 1813 (1994) (showing that NASDAQ dealers were quoting in spreads of 1/8th, maintaining artificially high spreads); Prajit K. Dutta & Ananth Madhavan, *Competition and Collusion in Dealer Markets*, 52 J. FIN. 245, 248- 268 (1997)(noting the tendency between groups of competing dealers to keep prices high); But see, But see Hendrik Bessembinder et al., *Why Designate Market Makers? Affirmative Obligations and Market Quality* (Working Paper, 2011) (on the risks faced by market makers and the benefits of creating a cohort of designated market makers).

[201] Amy Edwards et al., *Corporate Bond Market, Transparency and Transaction Costs*, 62 J. FIN. 1421 (2007) (highlighting that transparency about prices reduced costs); See also, O'Hara et al., *supra* note [198]; Harris, *supra* note [193].

[202] Bessembinder et al., *supra* note [170], 5-6. However, scholars report that costs have not gone up in recent years, even though bank dealers have reduced how fully they are willing to make markets using their balance sheet. Bessembinder et al., *Trading Activity & Transaction Costs, supra* note [194].

[203] Louis Ederington et al., *Dealer Spreads in the Corporate Bond Market: Agent v. Market Making Roles* (Working Paper)(2014) (showing that customers that transact directly with dealers, that take risks onto their own books face lower costs than those that rely on dealers to act as agents. In the case of agents, dealers search for counterparties, rather than taking risks onto their books).

[204] Ederington et al., *supra* note [203]; Darrell Duffie et al., *Over-the-Counter Markets*, 73 ECONOMETRICA. 1815 (2005) (providing a model of OTC dealers to show that bargaining power plays a central role in transaction costs); Peter Feldhuetter, *The Same Bond at Different Prices: Identifying Search Frictions and Selling Pressures*, 25 REV. FIN. STUD. 1155 (2012).

[205] Ederington et al., *supra* note [203] (noting that customer-dealer trades are cheaper than when a dealer acts as an agent).

[206] Harris, *supra* note [188]. This refers to the practice of "trade throughs" – or charging clients more than the best available price on the market. Harris finds that around 41% of the trades that were not executed at the best available price were those in which the dealer did not take risk on its books. It had prearranged a trade in advance.

2015, bond customers spent around $26 billion in transaction costs alone.[207] Ederington et al., further observe that empirical studies underestimate bond trading costs.[208]

Perhaps in light of the expense, bonds tend not to trade very often. In 2016, 9.3% of corporate bonds never traded at all, 39% saw trades occur only on 5 days or fewer and a handful of bonds – just 1.5% were traded on a daily basis.[209] Investment grade bonds tend to trade more frequently than those in the "junk" category, with the former trading on 179 days in the year on average, compared to 150 for the latter (for issues totaling over $1 billion).[210] Reflecting the heavily institutional nature of the market, the size of the average trade is around $1 million dollars, compared to $2 million in 2006-2007.[211] By contrast, average trade size in public equity markets is only 100 shares typically valued at approximately $3000-$5000.[212]

In summary, this Part shows that bondholders confront a conflict between tailorable creditor control and liquidity arising from the contractual nature of investor protection.[213] Those choosing to closely tailor their indenture can lose liquidity in their claim. Or, they can see increased agency cost and default risk if they decide not to do so. This trade-off is reflected in industry practice that puts bondholders in the worst of both worlds. Dense contracts, comprising a mix of the tailored and familiar, constitute a norm – while the infrastructure for trading bonds is slow, opaque, and expensive. This tension thus leaves

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[207] Harris, *supra* note [188], 2-3.

[208] Ederington et al., *supra* note [203].

[209] This study references bonds that are reported to FINRA's bond reporting system for secondary market trades called the Trade Reporting and Compliance Engine (TRACE). FINRA, FINRA Rule 6730, https://www.finra.org/rules-guidance/rulebooks/finra-rules/6730; On the definition of which corporate bonds quality for reporting into TRACE, FINRA, FINRA Rule 6710(a), https://www.finra.org/rules-guidance/rulebooks/finra-rules/6710; Securities and Exchange Commission, Remarks by Sonali Theisen at the Fixed Income Market Structure Advisory Committee Meeting, Jan. 11, 2019, https://www.sec.gov/spotlight/fixed-income-advisory-committee/citi-developments-in-credit-market-liquidity-fimsa-011118.pdf; Bessembinder et al., *supra* note [170]14-15. See also, Jacobsen & Kowara, *supra* note [28].

[210] Bessembinder et al., *supra* note [170]14-15.

[211] Bessembinder et al., *supra* note [170]14-15.

[212] Bessembinder et al., *supra* note [170], 5.

[213] For a review of the literature, see generally, James Angel et al., *Equity Trading in the 21st Century*, Marshall School of Business Working Paper No. FBE 09-10 (2010) ("Virtually every measurable dimension of U.S. equity market quality has improved."); James Angel et al., *Equity Trading in the 21st Century*: *An Update*, 5 Q. J. FIN. 1 (2015)(noting various problems in equity market structure but pointing to the "very healthy" state of U.S. equity markets); Albert Menkveld, *The Economics of High Frequency Trading: Taking Stock*, 8 ANNUAL REV. FIN. ECON. 1 (2016) (providing a literature review of automation and high frequency trading); U.S. SEC. & EXCH. COMM'N, EQUITY MARKET STRUCTURE LITERATURE REVIEW: HIGH FREQUENCY TRADING (2014). On the pricing efficiencies of automated trading in equities over near-term horizons, Jonathan Brogaard et al., *High Frequency Trading and Price Discovery*, 27 REV.FIN. STUD. 2267 (2014).

a swath of debt's investor base underprotected and, as analyzed below, creates inefficiencies for capital allocation more broadly.

III. BONDHOLDERS AND THE AGENCY COSTS OF DEBT

The conflict between tailorability and tradability diminishes the ability of bondholders to mitigate the agency costs of debt. In Part II of this Article, we describe why bond market design is flawed from the standpoint of investor protection. Bondholders inhabit a marketplace in which their entitlement imposes a trade-off between reducing agency costs through tailorable creditor control versus improving risk management through liquidity. This tension remains underexplored in the literature – unlike equity that enjoys expansive attention to the ways in which shareholder rights are exercised.[214] This prime position for equity is unsurprising. As residual claimholders, equity represents a vulnerable category of investor. Further, corporate law has long hewn to a framework that emphasizes the maximization of shareholder value as anchoring principle.[215] Such dedicated attention to shareholder welfare is laudable. But a limited view of bondholder entitlements and unquestioned acceptance of their abridgement comes with costs for the efficiency of capital allocation through credit markets.

This Part sets out these costs. In its first contribution, it examines the significance of bond market illiquidity for the effective exercise of control rights and contract enforcement. Scholars point to

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[214] *See e.g.*, Lucian Bebchuk, *The Case for Increasing Shareholder Power*, 118 HARV. L. REV. 833, 908–13 (2005) (arguing that shareholders are unable to effectively intervene in important firm decision-making and proposing a framework to increase shareholder voice); Lucian Bebchuk, *The Myth of the Shareholder Franchise,* 93 VA. L. REV. 675 (2007)(arguing for strengthening the election process for directorial election to vindicate shareholder rights); Oliver Hart & Luigi Zingales, *Companies Should Maximize Shareholder Welfare Not Market Value*, ECGI - Finance Working Paper No. 521/2017 (Aug. 2017) (advocating for managers to reflect the preferences of prosocial shareholders and that this is not the same as increasing market value). On stakeholder governance vs. stockholder governance. See, Martin Lipton, *Reclaiming "Value" in the True Purpose of the Corporation, Harvard Corporate Governance Forum*, Oct. 10, 2020, https://corpgov.law.harvard.edu/2020/10/10/reclaiming-value-in-the-true-purpose-of-the-corporation/; Chris Brummer & Leo Strine Jnr., *Duty and Diversity*, Working Paper (Jan. 20) (unpublished on file with the author) (highlighting the importance of ensuring racial diversity on boards as a part of shareholder value maximization); Business Roundtable, Statement on the Purpose of a Corporation, Press Release, Aug. 19, 2019; Lucian Bebchuk & Roberto Tallarita, *The Illusory Promise of Stakeholder Governance*, CORNELL. L. REV. (*forthcoming*); Margaret Blair & Lynn Stout, *A Team Production Theory of Corporate Law*, 85 VA. L. REV. 247, 305-320 (1999) (arguing for reframing corporate purpose to underscore the significance of stakeholders); Elizabeth Pollman, *Team Production Theory and Private Company Boards*, 38 SEATTLE L. REV. 615 (2015).

[215] Unocal Corp. v. Mesa Petroleum Co., 493 A.2d 946, 959 (Del. 1985) (highlighting the power of shareholders to control directorial conduct); Blasius Indus. v. Atlas Corp., 564 A.2d 651, 659 (Del. Ch. 1988) ("the shareholder franchise is the ideological underpinning upon which the legitimacy of directorial power rests"). See sources and discussion *supra* note [214].

the often synergistic interplay between investor "voice" and "exit" in creating an effective mechanism to discipline managers.[216] Borrowing from Albert Hirschman's treatise, they observe how the threat of a large investor's exit amplifies voice, pushing management toward better behavior.[217] We apply this framing to bond markets where exit is costly and bondholders cannot threaten exit as credibly. Secondly, we examine the impact of opacity and efficient price mechanisms for bondholder monitoring. [218] Limited trading and high transaction costs in bonds preclude reliance on prices to act as a workable surveillance tool for credit risk, imposing monitoring costs on bondholders. Thirdly, this Part reimagines and updates the traditional account of bondholders as apathetic investors by viewing their inaction through the lens of the broken bond market that imposes a conflict between contractual creditor control and liquidity.[219] Blaming collective action costs for bondholder disinterest is insufficient.[220] Rather apathy also arises as a function of bondholders possessing a claim that places a cost on the exercise of both creditor control and liquidity that ought to be more fluidly aligned in the context of a public security.

A. *Exit versus Voice in Bondholder Discipline*

The interaction between investor discipline (voice) and liquidity (exit) reveals a complex dynamic whose implications for agency costs remain hotly debated in scholarship. Applying the theory to bondholder governance adds a further layer of difficulty exacerbated by an absence of scholarship on the issue.[221] As we posit below, however, a lack of alignment between creditor power and liquidity risks raising barriers to the effective exercise of bondholder discipline.

According to Anat Admati and Paul Pfleiderer, a large investor can act as a persuasive force in improving managerial behavior.[222] The

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216 *See sources infra* note [222].

217 The discussion of exit vs. voice is set out in Albert Hirschman's treatise. Hirschman also includes "loyalty" as part of the considerations that customers balance when seeking to influence and interact with management. ALBERT HIRSCHMAN, EXIT, VOICE AND LOYALTY (1970).

218 Douglas Peebles & Ashish Shah, *Playing with Fire: the Bond Liquidity Crunch and What to Do about It* (Mar. 2016) (highlighting the conditions that contribute to limit liquidity for bond investors); Matt Wirz and Tom McGinty, *Low Liquidity Fueled Hidden Flash Crash in Junk Bonds*, WALL ST. J. JAN. 10, 2020.

219 *See e.g.*, Kahan & Rock, *supra* note [144], 284–286.

220 As noted above, collective action costs are not mitigated by indenture trustees. See e.g., Schwarcz & Sergi, *supra* note [160].

221 On increasing liquidity for corporate loans, see, Whitehead, *supra* note [169].

222 Anat Admati & Paul Pfleiderer, *The 'Wall Street Walk' and Shareholder Activism: Exit as a Form of Voice*, 22 REV. FIN. STUD. 2645(2009) (calling the threat of exit the "Wall Street Walk").

mechanism lies in the investor threatening to exit the firm by selling their shares when a manager looks set to engage in a bad act.[223] Such a sale would be read by the market as a negative signal on the company's prospects, pushing down prices and opening management up to scrutiny. With managers also likely to have compensation linked to equity, deterioration in prices will also impact their pocketbook.[224] Punishment for the C-suite can also emerge from a variety of external sources like a takeover bid, an investor lawsuit, unwanted press attention or reputational damage.[225] Alex Edmans points to blockholder action as a particularly meaningful force. Possessing economic incentives to gather information about the firm, selling by equity blockholders can dent a firm's share prices.[226] A poor caliber of management will cause informed blockholders to sell their stake and prices to sink, while recognition of long-term value will motivate them to maintain their interest and keep them buoyed.[227]

Not everyone agrees. Others offer a bleaker prognosis for exit to act as a lever for good governance. Notably, the option to sell provides investors with reduced motivation to undertake monitoring and activism. According to Phillippe Aghion et al. liquidity runs counter to diligent investor discipline.[228] Joining this line of argument,

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223 Admati & Pfleiderer, *supra* note [222], 2649-2653 (noting that the threat may not apply if exit seeks to encourage a manager to take a good action).

224 *See generally*, *Alan Palmiter, Mutual Fund Voting of Portfolio Shares: Why Not Disclose?* 23 CARDOZO L. REV. 1419, 1437-1439 (2002) (highlighting the disciplinary effect of investor exit and reduced share prices on management compensation).

225 Radhakrishnan Gopalan, *Large Shareholder Trading and Takeovers: The Disciplinary Role of Voting With Your Feet*, Working Paper (2005) (arguing that institutional shareholders can exercise power by exit, which causes prices to fall, a trigger for the market for corporate control); Ben Eisen, *Warren Buffett's Berkshire Hathaway Unloads Bank Stocks*, WALL ST. J., AUG. 14, 2020.

226 Widely regarded as passive, some have expressed skepticism about mutual funds as a positive force in corporate governance. See for example, Lucian A. Bebchuk, Alma Cohen & Scott Hirst, *The Agency Problems of Institutional Investors*, 31 J. ECON. PERSP. 89, 90-93 (2017)(detailing the negative effects of index investment funds for reducing agency costs); Lucian Bebchuk & Scott Hirst, *Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy*, 119 COLUM. L. REV. 2029, 2037-2041 (arguing that index fund managers possess weak incentives for stewardship). However, other scholars point to the positive incentives of passive index funds to discipline. See generally, Jill Fisch et al., *The New Titans of Wall Street: A New Theoretical Framework for Passive Investors*, 168 U. PENN. L. REV. 17 (2019)(showing that index fund managers have incentives to conduct diligent oversight and power to persuade); Ed Rock & Marcel Kahan, *Index Funds and Corporate Governance: Let Shareholders be Shareholders*, NYU Law and Economics Research Paper No. 18-39 (October 2019)(arguing that big fund families have incentives to become informed owing to scale and scope).

227 Alex Edmans, *Blockholder Trading, Market Efficiency, and Managerial Myopia*, 64 J. FIN. 2481(2009). On the monitoring role of prices, see generally, Holmstrom & Tirole, *supra* note [57]; See also, Robert Parrino et al., *Voting with Their Feet: Institutional Ownership Changes around Forced CEO Turnover*, 68 J. FIN. ECON. 3 (2003) (observing the informed quality of blockholders); Richard Sias et al., *The Price Impact of Institutional Trading*, 79 J. BUS. (2001) (noting that institutional trading impacts prices because large shareholders are likely to have better information).

228 Phillippe Aghion et al., *Exit Options in Corporate Finance: Liquidity versus Incentives*, 8 REV. FIN. 327 (2004).

Jack Coffee and Amir Bhide separately note that exit erodes the incentives of investors to spend on activism if they can simply sell-up and leave.[229]

That deeply-studied equity markets have yielded contrasting takes on the impact of exit for investor discipline bodes poorly for finding answers to this question in bond markets. For a start, the tension between creditor control and liquidity in bondholder monitoring precludes scholars from fully understanding the dynamic. If a claim is liquid, the bondholder likely holds a less tailored indenture with a blunter set of powers. This is not the same as saying that bondholders hold a weak deck of cards. Rather, it implies that their capacity to intervene is shaped by a bargain that does not exactly capture the firm's default risk (e.g. spending restrictions are a holdover from past issues). This inexactness can reduce how fully bondholders leverage a threat of exit to nudge management. Conversely, if a bondholder possesses a tailored indenture and lacks liquidity, it is harder to decipher how fluidly exit and voice might complement one another to improve default outcomes.

This being said, it is arguable that the tension between exit and voice risks reduces the impact of creditor control and exacerbates agency costs in bond markets. First, though the threat of exit is likely to carry special resonance, bondholders struggle to use it effectively. As institutional investors, bondholders are well-resourced and motivated economically to pay for information and monitoring.[230] Equityholders hold the residual risk. But bondholders, too, (especially those that are unsecured and ranking low in priority) have real exposure to default risk – but without fiduciary protection.[231] For junk issuers – those posing the highest danger of default – bond maturities tend to skew longer than in safer firms.[232] Crucially, bond investors are repeat players. 80% of the investor-base is dominated by banks, insurance companies, mutual and pension funds, hedge funds as well

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[229] Jack Coffee, *Liquidity versus Control: The Institutional Investor as Corporate Monitor*, 91 COLUM. L. REV. 1277, 1281 (1991) ("Investors that want liquidity may hesitate to accept control."); Amir Bhide, *The Hidden Costs of Stock Market Liquidity*, 34 J. FIN. ECON. 31(1993) ("stock liquidity discourages internal monitoring by reducing the costs of 'exit' of unhappy stockholders… the benefits of stock market liquidity must be weighed against the costs of impaired…governance."); Alex Edmans, *Blockholders & Corporate Governance*, 6 ANN. REV. FIN. 23 (2014) (reviewing the impact of blockholders on governance).

[230] In equities, Fisch et al., *supra* note [226] (noting the economic incentives of large index funds to invest in information.

[231] In Chapter 11, junior unsecured creditors can constitute the "fulcrum" class where they exchange their interest for ownership. For discussion, Adam Levitin, *Bankruptcy Markets: Making Sense of Claims Trading*, 4 BROOK. J. CORP. FIN. L. 67, 92-95 (2009).

[232] S&P Global, *U.S. Corporate Debt Market: The State of Play in 2019* (May 17, 2019), https://www.spglobal.com/en/research-insights/articles/u-s-corporate-debt-market-the-state-of-play-in-2019.

as foreign entities.[233] As repeat players, they might well be investing in a company over multiple issues and also at various levels of riskiness (i.e. varying levels of the priority ladder). This can heighten signaling power, where strong, repeat investors sell their stake in the firm.

Importantly, given this informed, repeat character, the threat of a bondholder exit in a (theoretically) liquid market ought to be especially persuasive in steering management away from actions that increase default risk. Informed bondholder selling will be influential and depress the price and value of the claim. In bond markets, selling has the potential to be extremely damaging for managers and the firm's cost of capital. One, institutional bond investors often replicate each other's behavior when (panic) selling. Cumulatively, this can result in a steeper price plunge than would be experienced by just a single large sale. Fang Cai et al., show that corporate bonds tend to exhibit herding among institutional investors. Herding is "substantially higher" for sales than it is for purchases. This collective race to exit can become disruptive for bond prices that might then suffer from large, albeit temporary, dislocations.[234] That herding should be more pronounced for bond sales than for purchases makes sense given the nature of the claim. Inferences of negative information are of special importance for bond investors – indicating a greater chance of default and amplified risk.[235]

Moreover, price plunges and a devaluing of the bond claim can directly harm a firm's longer-term cost of capital. Investors like mutual or pension funds can place constraints on the ratings quality of the bonds they hold.[236] Informed selling by prominent investors – and the consequences – can mean that the firm might suffer an adverse credit event like a default or downgrade. Internal restrictions on the ability of important investors to buy or keep a risky bond will limit how easily a struggling firm can raise debt going forward. Because markets ought to internalize information about default risk from the exit of informed investors, a firm can face higher hurdles in its future efforts to raise capital in public markets.

In theory, bondholders that can threaten exit effectively should be well-placed to pressure management to act in their interest to reduce excessive risk-chasing using borrowed capital. They represent

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[233] Sonali Theisen, *supra* note [209]. On the potential for common control through debt arising out of the same bondholders having repeat holdings, Danny Sokol, *Debt Control and Collusion*, Working Paper (Feb 2021).

[234] Fang Cai et al., *Institutional Herding and its Price Impact: Evidence from the Corporate Bond Market*, 131 J. FIN. ECON. 139(2019).

[235] Cai et al., *supra* note [234].

[236] *See e.g.*, Eric Rosenbaum, *Fed Adds its Voice to Rising Fears about Retirement Investor Core Bond Holdings*, CNBC, NOV. 30, 2018, https://www.cnbc.com/2018/11/30/fed-fears-trouble-for-retirement-investor-core-bond-holdings.html.

informed, well-resourced institutional investors.[237] Selling carries persuasive force, especially where it might trigger herd behavior and reduce the firm's ability to raise money in credit markets.[238] Extending the Admati and Pfleiderer and Edmans thesis, liquidity can present bondholders with a mechanism that decreases the costs of investor discipline by enlarging the scope of soft power and helps bridge the gap between their interests with those of managers and shareholders.[239]

The tension between creditor control and liquidity distorts the efficacy of threatened exit and investor discipline. Because liquidity is expensive, slow and uncertain, a diligent investor will have to pay more to use it. It is worth repeating that bondholders already confront a number of costs when engaging in activism. Bondholders rely on private negotiation and contract enforcement.[240] Indentures are dense, a mix of tailored and standard terms and often beset with interpretative complexity.[241] Default declarations require process and coordination. And trustees are not solving these problems.[242]

Limited liquidity adds further cost to the decision about whether exit can work as a viable threat. Investors that are considering it must contend with the inefficiencies of a dealer market where transactions can take time to match and spreads as well as opacity are high.[243] Prices will move against them as dealers recognize the risks of being adversely selected by an informed counterparty.[244]

Practically, issuers that are most likely to create worries for investors – junk-rated companies or those facing a downgrade – are also those whose bonds are among the least liquid and most expensive to trade. For example, during market turmoil in November 2019, high-risk issuers – and especially the riskiest ones (those rated C-grade) – showed extreme illiquidity. Violent bond price swings were commonplace, with some issuers experiencing an almost 50% crash in prices.[245] In the March 2020 COVID-19 crisis, the Federal Reserve Bank of Philadelphia reported that, while disruption impacted all corporate bonds, high-yield bond trading showed sharpest increases in

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[237] Cai et al., *supra* note [234], 1-2.

[238] Cai et al., *supra* note [234].

[239] Admati & Pfleiderer, *supra* note [222], 2649-2653; Edmans, *supra* note [227]. See also, Gopalan, *supra* note [225].

[240] Kahan & Rock, *supra* note [152].

[241] Choi & Gulati, *supra* note [186].

[242] Sergei & Schwarcz, *supra* note [160].

[243] Bessembinder et al., *supra* note [170], 3-4; Harris, *supra* note [188], 4-7.

[244] *See e.g.*, Glosten & Harrris, *supra* note [170], 125-130; Glosten & Milgrom, *supra* note [170].

[245] Matt Wirz and Tom McGinty, *Low Liquidity Fueled Hidden Flash Crash in Junk Bonds*, WALL ST. J. JAN. 10, 2020.

execution costs.[246] Scholars, too, underscore the importance of liquidity costs in analyzing bond prices for riskier credits. In their 2012 study of over 30,000 corporate bonds, Nils Friewald et al., show that liquidity tends to be lower for high-yield bonds and that their prices respond to shifts in liquidity more strongly than those of safer, higher-rated investment grade claims.[247]

Putting this together, investors contemplating use of exit as threat will look to this as negotiating lever only where they are realistically positioned to use it (and when an issuer will believe the threat to be real). That is, the company's behavior is sufficiently concerning that investors are willing to absorb the costs of bondholder engagement as well as the additional transaction costs involved in selling their interest. Unlike shareholders who can exit into a market where liquidity is generally cheap and ample, bondholders are stymied in exerting this kind of soft power as fluidly.

Managers thus have more room to misbehave using bondholder capital – a wider berth within which to take outsize risks because of diminished and expensive secondary market liquidity. The conflict between tailorable contracts and liquidity places bondholders in a bind. On the one hand, a tailored bond indenture means that creditor control can be exercised more precisely. On the other, it increases bondholder costs. The ability to use soft-power and threat is reduced because investors must factor in illiquidity and a lowered ability to credibly rely on exit. This affords a firm and its managers opportunity to deviate from the bargain with bondholders and take risks outside of what is permitted in the contract. Managers are unlikely to face bondholder agitation if bad actions do not look serious enough for bondholders to reach the threshold at which it becomes profitable to negotiate, with the threat of a viable sale in their back-pocket.

Stated differently, a tightly drafted contract can still result in agency costs for bondholders. Companies that are most likely to need detailed contracts – those rated as being junk credits or vulnerable to a downgrade – will also make the most from the insulating buffer created by the costs of higher bond illiquidity.

To be sure, bondholders can threaten an issuer in other ways. A well-designed contract will afford investors an opportunity to declare a default and use the threat to do so as a negotiating tool.[248] A bond issue that comes with tight contractual trip wires mean that investors can be aggressive about policing companies by monitoring compliance

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[246] Mayhar Kargar et al., *Corporate Bond Liquidity During the COVID-19 Crisis*, Federal Reserve Bank of Philadelphia Research Brief, 6-7 (April 2020).

[247] Niels Friewald et al., *Illiquidity or Credit Deterioration: A Study of Liquidity in the US Corporate Bond Market during Financial Crises*, 105 J. FIN. ECON. 18, 21-25 (2012).

[248] Kahan & Rock, *supra* note [152], 284–286.

with covenants and acting decisively when managers or shareholders behave badly.[249] But this strategy also comes with costs and trade-offs. First, investors must still incur monitoring costs to keep track of compliance and there will be further negotiation expenses when it comes to time to push issuers toward modifying their behavior. Where monitoring is expensive and negotiations complex, issuers will have some room to misbehave without fear of being detected and sanctioned. Secondly, a strategy anchored in regularly threatening issuers with declarations of default can ultimately damage an investor's own pocketbook. Bonds that are in default are very likely to see their prices fall.[250] The instrument becomes riskier as the issuer's ability to pay is formally called into question.[251] Insolvency and restructurings emerge as likely entanglements on the horizon. In these conditions, investors will rationally charge a higher coupon rate to lend more money to the firm, if they are willing to lend at all.[252] Importantly, with these deteriorating prospects, the bond's liquidity also suffers, further depressing the price and the attractiveness of the claim.[253]

In other words, a strategy that leans heavily on default as the go-to tactic for motivating compliance is not without serious costs for bondholders. Investors might lose financially by engaging in it. Studies also suggest it can be economically wasteful. As Guo et al., highlight, the recent trend of hedge funds hunting for companies already in default of their bonds – and forcing payouts – has fostered opportunism in debt markets. This dynamic has largely worked to benefit the interests of hedge funds rather than creating gains for efficient credit allocation.[254] This suggests that the option to credibly threaten exit (as well as default) can provide bond investors with a way to engage with issuers using soft power without having to play a game of chicken.

Alternatively, it is arguable that illiquidity – especially for well-tailored contracts – represents an overall good for encouraging

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[249] Tung, *supra* note [137], 135-150.

[250] Fidelity, *Bond Prices, Rates and Yields*, https://www.fidelity.com/learning-center/investment-products/fixed-income-bonds/bond-prices-rates-yields; Moody's, Investor's Service, *Bond Prices at Default and at Emergence from Bankruptcy for US Corporate Issuers*, Special Comment (Jun. 2005).

[251] Investors may have purchased credit protection against the risk that the debtor defaults. This kind of contract can result in bondholders acquiring an incentive to push an issuer towards default. See e.g., Henry T.C. Hu & Bernard Black, *Debt, Equity and Hybrid Decoupling: Governance and Systemic Risk Implications*, 14 EUR. FIN. MGMT. 663 (2008) (detailing the empty creditor problem and its costs); Yesha Yadav, *The Case for a Market in Debt Governance*, 67 VAND. L. REV. 101 (2014)(suggesting that empty creditors and credit protection sellers have incentives to cooperate in mitigating default risk).

[252] *See e.g.*, Jeremy Hill & Max Reyes, *Bond Defaults Deliver 99% Losses in New Era of U.S. Bankruptcies*, BLOOMBERG, OCT. 26, 2020 (detailing the negative economic consequences of default).

[253] On the interlinkages between liquidity and default risk and showing that liquidity measures account for a meaningful component of bond spreads, Hui Chen et al., *Quantifying Liquidity and Default Risks of Corporate Bonds over the Business Cycle*, 31 REV. FIN. STUD. 852 (2018).

[254] See generally, Guo et al., *supra* note [156]; Kahan & Rock, *supra* note [152].

bondholder engagement in monitoring. Following the work of Aghion and Bolton, Coffee and Bhide, liquidity can discourage monitoring. With easy exit, investors simply disengage and sell.[255] In the context of bond markets, this argument suggests that a illiquidity should foster more commitment to discipline. Because they face higher costs in selling, bondholders ought to be committed monitors.

But this argument is strained in its application to bondholders specifically. Crucially, bondholders internalize the costs of their own self-protection. Even if they have incentives to monitor, these have to be balanced against the costs involved in information gathering, monitoring, coordination and negotiation with an issuer. Illiquidity can mean that investors become even more reticent to take on more expense to protect their contractual rights. As discussed below, bondholders are generally viewed as apathetic.[256] The reduced ability to exit does not appear to have focused bondholder attention on aggressively policing their risks. This hints that illiquidity has failed to sharpen investor appetite for discipline in public debt markets.

Summarizing this subsection, we argue here that the conflict between exit and voice in bond claims limits the levers available to bondholders to control a firm's agency costs. Whereas equity markets offer investors an alignment between activism and liquidity – such that threats to exit by prominent investors amplify voice – bondholders face higher costs to do so. This weaker capacity to commit to a persuasive negotiating tactic adds difficulty to bondholder monitoring – and gives issuers room to misbehave. Without large investors able to signal their choices as fully, or to trade as cheaply as they might in equity, debt markets can lack a critical window into a firm's default risk.

B. *The Limited (and Limiting) Role of Prices*

Bondholder discipline is further hobbled by an ineffective price mechanism. As detailed in Part II, stock prices carry tangible weight in firm monitoring thanks to the confidence placed by regulators and markets in their ability to reflect available information on public firms.[257] With turnover in milliseconds and trading algorithms crunching vast amounts of price and news-related data, today's equity markets are regarded as informationally efficient – at least in the near-

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255 See generally, Aghion & Bolton, *supra* note [186]; Bhide, *supra* note [229]; Coffee, *supra* note [229].

256 *See e.g.* Kahan & Rock, *supra* note [152], 283.

257 *See discussion and sources supra* Part [II](A).

term.[258] Even before equity markets came to be dominated by hyper-fast and data-driven automated trading, stock prices were already serving as a lever for investors looking to discipline firms.[259] An emphatic example is the anti-fraud securities class action that looks to efficient prices as a proxy for system-wide investor reliance on misinformation.[260] With equity markets seen as producing informative prices, liquidity affords equity investors a device by which to subsidize the cost of everyday monitoring.[261]

The conflict between tailorable contractual control and liquidity in bond markets results in prices being much less powerful tools for investor monitoring. As detailed in Part II, a sizable proportion of bonds simply do not trade, or trade only infrequently.[262] Transaction sizes remain high, falling from an average of $2 million dollars a decade ago to around $1 million dollar per trade today. Large *average* transaction sizes point to the kinds of investors that dominate the market.[263] They tend to be institutional and informed.[264] But participation by informed institutions also creates risk for liquidity and price formation. Major investors may hold similar viewpoints and not wish to trade with one another.[265] Fewer small, inexpert, retail and uninformed traders limit the chances for key participants making money from trades. Importantly, dealers may be put off by the prospect of trading with informed traders without also having uninformed or lesser informed traders against which they can make money. And without dealers offering cheap and ready liquidity, the prices produced by the market are liable to be tarnished by expensive dealer spreads rather than reflecting deep informational insight.

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258 *See discussion and sources supra* Part [II(A)]. See, for example, Brogaard et al., *Price Discovery, supra* note [115]. But, on more fundamental informational efficiency, see Yadav, *Algorithmic Trading*, *supra* note [103].

259 See also, Holmstrom & Tirole, *supra* note [57].

260 Section 10(b) of the Securities Exchange Act of 1934, 5 U.S.C. §78j(b)(2012). Halliburton Co. v. Erica P. John Fund Inc., 134 S. Ct. 2398 (2014); Basic Inc. v. Levinson, 485 U.S. 224 (1988). The literature on this topic is extensive.

261 Yadav, *Algorithmic Trading*, *supra* note [103], 1625-1642.

262 Bessembinder et al., *supra* note [170],14-15.

263 Bessembinder et al., *supra* note [170], 14-15.

264 On the informed investor base in bond markets, see, for example, Sudip Datta & Mai Iskander-Datta, *Does Insider Trading Have Information Content for the Bond Market*, 20 J. BANKING & FIN. 555 (1996); Simi Kedia and Xing Zhou, *Informed Trading Around Acquisitions: Evidence from Corporate Bonds*, 18 J. FIN. MKTS. 182 (2014); Jason Wei & Xing Zhou, *Informed Trading in Corporate Bonds Prior to Earnings Announcements*, 45 FIN. MGMT. 641 (2016); *Insider Trading In Junk Bonds*, 105 HARV. L. REV. 1720 (1992) (noting insider trading in junk bond markets); Laurie P. Cohen & Kevin G. Salwen, *SEC Starts Insider-Trading Probe In Junk- Bond Market*, WALL ST. J., Apr. 10, 1991; Yesha Yadav, *Insider Trading in the Derivatives Markets*, 103 GEO. L.J..381 (2015) (highlighting banks as insiders in debt markets).

265 *See e.g.*, Gilson & Kraakman, *supra* note [57], 565-592.

In addition, the tension between creditor control and liquidity further diminishes the quality of prices.[266] First, investors that have crafted a tailored contract possess an indenture that is less fungible. Tailored indentures are also likely to also be the most informative. The process of bargaining for a crafted contract ought to result in information transfers between the issuer and bondholders (e.g. via underwriters).[267] Disclosures demands may also be more specific.

Investors holding informationally richer, carefully crafted contracts are also those more likely to be facing poorer liquidity for their claims. Illiquidity and trading costs may cause selling investors to keep their claim instead. As a consequence, information embedded in the tailored, negotiated bond contract is suppressed because it does not get frequently bought, sold and priced. Rather, a contract that is less detailed and negotiated, more fungible and liquid represents one that attracts greater trading even if it embeds less information in its terms. In this way, the conflict between tradability and tailorability becomes pernicious. More informative contracts become less tradable, limiting the introduction of higher quality information into prices.

Put simply, investors that might have sold their stake in a world of cheap liquidity, or sought to threaten a sale, may not do so, do so less often in the bond market. This barrier prevents useful, default-relevant information from percolating into bond prices. Informative transactions that might have been consummated in equity markets and impounded into prices might just not happen in the bond market, leaving prices emptier of content. Also, rather than actively following signals from informed investors, other traders have a smaller, shallower pool of actions from which to extrapolate insider insights.[268]

Empirical evidence on the efficiency of public bond markets, relative to equity, remains a work-in-progress.[269] Some scholars observe, for example, that bond prices tend to lag stock prices, meaning that stocks are better at reflecting information and the direction of price changes.[270] Others suggest that both markets are roughly

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266 Yakov Amihud et al., *Liquidity and Asset Prices*, 1 FOUNDATIONS & TRENDS IN FIN. 269 (2005)(detailing the relationship between liquidity and securities prices and highlighting the impact of liquidity factors in asset prices).

267 On the information transfers between lenders and borrowers in the context of corporate loans as well as covenant violations, Tung, *supra* note [137], 138-140.

268 On the mechanisms by which lesser informed traders follow and copy the actions of informed traders, Gilson & Kraakman, *supra* note [57].

269 *See notably*, Securities and Exchange Commission, *Algorithmic Study*, *supra* note [116] (for the extensive depth of research on the current dynamics of equity market efficiency).

270 *See e.g.*, Chris Downing et al., *The Relative Informational Efficiency of Stocks and Bonds: An Intraday Analysis*, 44 J. FIN. QUAN. A. 1081 (2009).

equally adept at incorporating new data.[271] Most logical is the finding that bond prices are attuned to capturing data that relates to a firm's chances of defaulting. Mark DeFond & Jieying Zhang show that bond prices demonstrate faster uptake of negative news – shock earnings announcements, for instance, or changes to the composition of a firm's balance sheet. Equity prices respond to both good and bad news. [272] But bond prices focus more closely on negative information.[273] This observation aligns with the diverging nature of equity versus bond claims. Equity's cash flows are sensitive to both positive as well as negative news, with investors able to capture unlimited upside. Whether a company builds a new product or cannot pay its debts are relevant to determining the availability of future cash flows (dividends).[274] Bonds do not promise such upside.[275] Returns are capped. How successful a company's sales figures are constitutes news insofar as they indicate ongoing solvency. By contrast, events that suggest problems in paying back debt carry obvious relevance. That bondholders would focus more on a company's shock earnings announcements makes sense within the asymmetric context of a bond claims' limited upside, but unlimited downside upon firm failure.[276]

This sensitivity to default-related information does, however, suggest that simply substituting insights gleaned from a company's share prices to inform bondholders about their risks would be inadequate. Bond prices serve their own unique informative purpose designed to match the peculiarities of the bond claim. As set out in this subsection, the lack of liquidity in public debt puts an insurmountable roadblock on the ability of bond prices to credibly serve a formal regulatory and surveillance purpose as those in equity have long been able to do. We argue that the divergence between contractual creditor control and liquidity is a key contributor to the poorer quality of bond prices. Informed engaged investors are dissuaded from selling. Their insights cannot emerge into prices without these prices also reflecting the heavy costs of illiquidity. The weakness of bond prices to offer a lever for real-time monitoring and discipline amplifies the burden faced by bondholders in protecting themselves against agency costs. In

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271 *See e.g.*, Edith Hotchkiss & Tavy Ronen, *The Informational Efficiency of the Corporate Bond Market: An Intra-day Analysis*, 15 REV. FIN. STUD. 1325 (2002); Tavy Ronen & Xing Zhou, *Where Did All the Information Go? Trade in the Corporate Bond Market*, Working Paper (2016) (noting the liquidity and efficiency of corporate bond prices as being comparable with equities).

272 Mark L. DeFond & Jieying Zhang, *The Timeliness of the Bond Market Reaction to Bad News Earnings Surprises*, 31 CONTEMP.FIN. RES. 911 (2014).

273 DeFond & Zhang, *supra* note [272].

274 BREALEY ET AL., *supra* note [59], 46-51;160-165; 218-226; 351-359; 427-445.

275 BREALEY ET AL., *supra* note [59], 46-51;160-165; 218-226; 351-359; 427-445.

276 BREALEY ET AL., *supra* note [59, 218-226; 351-359; Ashwath Damodaran, *Valuing Declining and Distressed Companies*, Working Paper (2009).

addition to lacking fiduciary and minority safeguards, bondholders are left without a cost-saving private mechanism – securities prices – that can facilitate investor self-protection.

C. *Beyond Bondholder Apathy*

Our argument nuances and updates the view that bondholders are simply passive actors in corporate governance. Scholars have long observed that bondholders are apathetic agents in governance.[277] Marcel Kahan and Ed Rock describe an "underenforcement problem" and lack of engagement on the part of public bond investors in enforcing bargained-for indenture entitlements.[278] As described in Part II, the rise of hedge fund activism only draws attention to the profound ineffectiveness of bondholder discipline by highlighting the exceptionalism of recent enforcement action. Indeed, it is far from clear that efforts by hedge funds are contributing to meaningfully improved discipline and capital efficiency. As Kahan and Rock, as well as Guo et al. point out, interventions are strategic, selective, opportunistic and rooted in finding technical defaults and acting for quick payouts.[279]

Explanations have emerged to account for bondholder disinterest in discipline despite being informed, institutional and well-resourced. Kahan and Rock, for instance, detail logistical hurdles that impede action. Investors must first discover a fault from the regular reports a company is supposed to file with the indenture trustee – or by themselves.[280] Then they need to enforce it after jumping through a series of contractual hoops that determine when and how a company can be judged as being in default of indenture terms.[281]

Gulati and Kahan note the complexity of the indenture as a cost in itself. That bond contracts can be hard to read, ambiguous and complex results in sowing path dependencies, inattentiveness and apathy among investors.[282] As a result, they seldom act decisively to

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[277] *See for example,* Kahan & Rock, *supra* note [152], 283.

[278] Kahan & Rock, *supra* note [152], 283.

[279] Kahan & Rock, *supra* note [152], 288-292; 301-306 (for example, highlighting actions resulting from failure to file disclosures).

[280] Kahan & Rock, *supra* note [152], 297-298.

[281] Kahan & Rock, *supra* note [152], 298-300.

[282] Marcel Kahan & Mitu Gulati, *Contracts of Inattention*, BLUE SKY BLOG Jan. 23, 2020, https://clsbluesky.law.columbia.edu/2020/01/23/contracts-of-inattention/ ("Although these investors look carefully at the pricing terms, they generally do not read, or spend resources on hiring their own lawyers to read, their bond contracts which can easily run to 100 or so pages. As to non-pricing terms, these investors are mostly interested in whether the terms in their deals broadly conform to the standard "market" forms…as far as the fine print in their contracts, investors are asleep.");

protect themselves and do so, in large part, when they are forced.[283] Finally, a reason for bondholder inaction lies in the collective action costs they face in organizing activism and contract enforcement. Investors are unwilling to cross logistical hurdles or to bother reading detailed contracts because they are poorly organized to share the costs involved.[284] In bond markets, coordination difficulties remain a constant feature given the ineffectiveness of the indenture trustee.[285]

We suggest that these explanations, while important, are also incomplete. This Article offers a refining rationale that locates bondholder inaction in the costs created by the structural conflict between tailorable contractual control and liquidity. In other words, because of the broken market, bondholders are on the backfoot even before they reckon with coordination and logistical difficulties.

First, the tension between tailorable creditor control and liquidity creates a cost for bondholders' ability to contract as flexibly as policy might assume.[286] As described in Part II, bond contracts, in practice, represent a dense, bulky mix of tailored provisions, reused language as well as industry boilerplates.[287] Despite the ability to contract flexibly, investors still choose language that may not be apt to the issuer and issue (e.g. on the scope of dividend restrictions) but is featured because it was used in an earlier issue or belonging to a peer. Clauses require work to change. Path dependencies are common.[288]

In other words, the importance of ensuring that the claim be tradable limits contractual freedom from the outset and restricts how

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Marcel Kahan & Mitu Gulati, *Contracts of Inattention*, NYU Law and Economics Research Paper No. 19-35 (2019).

283 For a prominent example, Wilmington Savings Fund Society, FSB v. Cash America International, Inc., No. 1:2015cv05027 - Document 49 (S.D.N.Y. 2016). The *Cash America* decision concerned the availability of a "make whole" premium on an Event of Default. A make-whole provision is exercised at the option of an issuer, providing bondholders with a premium above par value. In *Cash America*, the court held that a "voluntary" Event of Default by an issuer gave bondholders the chance to receive a premium payment. Following the decision, an effort was made by lawyers to change bond contract wording in order to negate the effects of the case. Covenant Review, a publication disseminating insights for bondholders, launched a campaign to ensure that the holding of *Cash America* could stand and to stop drafting changes from taking place. See also, Matt Levine, *Bond Covenants and Skeptic Skepticism*, BLOOMBERG, JAN. 12, 2017; Marcel Kahan & Mitu Gulati, *Cash America and the Structure of Bondholder Remedies*, CAP. MKTS. L. J. (*forthcoming*). See also, Badawai, *supra* note [168].

284 Kahan & Rock, *supra* note [152], 298-300.

285 Amihud et al., *supra* note [117].

286 Marcel Kahan & Michael Klausner, *Standardization and Innovation in Corporate Contracting (or "The Economics of Boilerplate')*, 83 VA. L. REV. 713 (1997) (describing the role of intermediaries in spreading innovations in boilerplate changes); Marcel Kahan & Michael Klausner, *Anti-Takeover Provisions in Bonds: Bondholder Protection or Management Retrenchment?* 40 UCLA. L. REV. 931 (1993) (noting high levels of stickiness in bond agreements); See also, Mark C. Weidemaier, *Disputing Boilerplate*, 82 TEMPLE L. REV. 101(2009)(observing the role of smaller-scale players in developing shifts in boilerplate design).

287 See e.g., Nyarko, *supra* note [186] (on common choice of law clauses).

288 Stephen Choi et al., *Black Hole Problem*, *supra* note [186] (noting that boilerplates can become used in an unthinking way); Gulati & Kahan, *supra* note [186], *Contracts of Inattention*, *supra* note [186].

freely new contract innovations can be designed. [289] If investors have to choose between a set of clauses, compromise is likely to push investors towards a version of the clause that can best enable the claim's liquidity. Contract terms that hew closest to a standard and are familiar to intermediaries (e.g. dealers) are thus likely to emerge as winners in a contest.[290] Indeed, it would make sense for only those contract options to be put forward that fit within existing contractual paradigms with proven liquidity.[291] The need to produce liquidity for contracts thus fetters fullest contractual choice as a matter of industry realism and rational compromise.

The costliest practical constraints on choice apply in precisely the context where investors need them the least: that is, for the riskiest type of issuer. Riskier credits demand that investors pay close attention to designing or modifying terms to reflect changing risks.[292] Indentures belonging to this category of company also tend to be more illiquid.[293] Beyond this, if a company becomes riskier or if circumstances dictate modification, further major contractual tailoring is likely to come at a cost to liquidity. [294] Deviations from industry standard or changes from prior drafting, for example, are liable to drain liquidity from an already illiquid claim.[295]

Secondly, bondholder apathy looks like an understandable and rational choice when such contracting constraints are taken into account. Bondholders appear to lack motivation to investigate and enforce indenture breaches or to agitate for contractual changes unless the damage being done to them is simply too visible to ignore.[296]

But a stymied ability to contract exacerbates inertias created by collective action costs among dispersed investors. Because close tailoring is expensive (owing to a future loss of liquidity), investors

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289 *See e.g.*, Amihud et al., *supra* note [266](showcasing the nexus between liquidity and the price of an asset); Feldhütter et al., *supra* note [204].

290 On the importance of intermediary uptake for corporate innovation in bond markets, Kahan & Klausner, *Economics of Boilerplate, supra* note [186]; On stickiness in bond boilerplates, Nyarko, *supra* note [186].

291 Choi & Gulati, *supra* note [176] (highlighting the difficulties of contract modification even as between sophisticated parties).

292 *See e.g.*, Whelan II, *supra* note [ ]; In the context of changing covenants in the wake of COVID-19, Abby Latour, *COVID-Era Private Credit Trends: Liquidity Covenants In, DDTLs Out*, S&P Global Market Intelligence, Aug. 4, 2020, https://www.spglobal.com/marketintelligence/en/news-insights/blog/covid-era-private-credit-trends-liquidity-covenants-in-ddtls-out.

293 Friewald et al., *supra* note [247].

294 *See for example*, Barclay & Hendershott, *supra* note [95] (highlighting the "substantially higher" costs of reduced liquidity in equity.

295 De Franco et al., *supra* note [186] (on the reduced liquidity and higher issuer costs faced by claims that lack comparability to past and peer issues).

296 Kahan & Rock, *supra* note [152]; 283–286 (2009); Kahan & Gulati, *Contracts of Inattention*, *supra* note [186]. See also, Brudney, *supra* note [136].

have fewer incentives to devote resources to the contracting process. Resources must be spent to procure information, analyze it, hire lawyers to negotiate with underwriters involved in the bond issue, negotiate and craft a contract.[297] Where expensive due diligence is unlikely to yield major contractual shifts because such shifts would create illiquidity, it makes little sense to spend financial and analytical resources in doing so. What looks like a tendency towards passivity highlights the consequences of a cost-benefit trade-off between the desire to act and the expense and uncertain pay-off of doing so.

Thirdly, bond investors lack access to levers of control that could mitigate their costs of creditor activism and enforcement. Bondholders are limited in their abilities to convey a negative signal by selling or threatening to sell. Though informed investors should be able to leverage exit effectively, expensive execution costs diminish motivation to use this signal. Price transparency is also lacking. Bond trading remains infrequent, slow, uncertain, expensive, undertaken within an opaque market structure that does not advertise its prices. With price informativeness low, this missing monitoring mechanism forces bondholders to find other ways to gather information about firms. Putting these costs together, bondholder apathy appears unavoidable. Indeed, the challenges outlined in this Part reinforce a tendency towards inaction or only superficial intervention in bond market governance.

In short, constraints on contracting, limited price transparency and poorly crafted contracts create a complex set of tradeoffs. If investors wish to acquire more information using the contract (e.g. through negotiation, drafting, imposing specific disclosure requirements), they will likely suffer some reduced liquidity and thus lower price efficiency for the claim. By contrast, if investors prize liquidity, they gain by holding a more standardized contract that is tradeable. This can offer the possibility of more liquid trading. But investors lose the chance at wielding a more effective set of specific governance levers. Further, even though investors are able to trade the claim more easily, it is debatable whether this trading will necessarily reflect high-quality information into prices. Because the contract memorializes a more standard bargain, investors probably hold a contract that is less negotiated and lacking terms that might enable a selling investor to acquire depth of insight about the firm.[298]

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[297] Kahan & Klausner, *supra* note [186].

[298] For example, in its annual report on compliance to the indenture trustee, an issuer attests to compliance across fewer and more generic set of covenants. A lighter and less specific set of maintenance covenants can mean less detail on an issuer's financial condition. A bond that largely focuses on incurrence covenants will highlight breaches upon the occurrence of certain prohibited events, rather than offering a continuing picture of an issuer's activities. For a discussion of incurrence vs. maintenance covenants, Whelan II, *supra* note [141].

This suggests that the conventional view of bondholders as simply disinterested needs refinement. Their scope for action is restricted by the tradeoffs generated by the need for a tailored bond contract as investor protection. With costs embedded in each choice – whether to enhance control or liquidity – bondholders are limited in using their institutional expertise to limit the agency costs created by shareholders and managers. This raises the risk that bondholder capital remains persistently vulnerable to the agency costs of debt.

In summary, this Part shows that the contest between control versus liquidity in bond markets amplifies the agency costs of debt. Unlike in equity, bondholders pay for voice by losing their ease of exit. The inability to align the utility of both exit and voice means that bondholders lose out on the option to use exit to underscore voice, diminishing power vis-à-vis managers and shareholders. Managers/shareholders enjoy latitude to increase default risks. Importantly, this liquidity tax on the exercise of creditor control impacts the quality of securities prices that – unlike those in equity – cannot act as a method to continuously monitor the firm. And equity/bond prices are not substitutable one for the other, with the result that bondholders lose an important window into the measure of a firm's creditworthiness. Finally, in addition to these costs, the trade-off constrains bondholders' freedom to contract. In order to preserve some liquidity in the claim, investors are dissuaded from using the full power of contractual flexibility to create a strong and workable framework of constraints on the borrower. This results in hollowed-out private creditor control where bondholders have few incentives to negotiate for information as well as a sub-optimal set of control levers that are ill-matched for the task of monitoring the issuer.

IV. A SOLUTION

This Part outlines a solution to repair the broken bond market. In Parts II and III, we show that bond markets suffer from a fundamental flaw that diminishes the ability of investors to police the agency costs of debt. A tailorable contract allows terms to be adaptable and gives investors a mechanism that can be crafted to control a firm/issue's default risk. But this process of chiseling an indenture to fit an issuer exactly extracts a price in the form of liquidity. Bondholders struggle to exercise creditor control as well as manage their risk through trading. The economic damage of this conflict for firm discipline and capital allocation is, we believe, intolerably high.

This solution does not provide a single universal solution to solve the multiple defects discussed in this Article: (i) weaknesses in bondholder-led monitoring and discipline; (ii) poor-quality liquidity;

(iii) pricing inefficiencies and opacity; and (iv) a lack of alignment between creditor control and liquidity, resulting in a host of negative externalities for market discipline. Rather it addresses these problems through a three-pronged approach that, together, affords investors choice, control, liquidity and pricing efficiencies. Our proposal is market-focused, recognizing the fundamental contract-based paradigm for investor protection in corporate law and securities regulation. Below we suggest the creation of: (i) greater standardization in contract design; (ii) a stronger role for platforms in monitoring and enforcement; and (iii) retaining the status quo to accommodate those looking for fullest tailorability.

A. *A Menu of (Standardizing) Choices*

Contractual standardization provides a way to bring deeper liquidity to the bond market. We propose that issuers and bondholders craft bonds that carry an established set of core covenants with defined tiers of variation between covenant bundles. Such standard contracts can be amenable to trading on transparent electronic platforms rather than OTC. This idea, detailed below, is not especially radical nor new. Model indentures are common.[299] But, if such standardization is implemented systematically, it holds out the possibility of transformation in the current design of corporate debt markets.

For a start, it is possible for bonds to be liquid – in other words, bonds are not doomed to be illiquid in all cases. Certain bonds can be (extremely) liquid. Notably, the market for U.S. government bond debt (or Treasuries) ranks among the among the most liquid in the world.[300] In corporate debt, the bond market has shown real, recent appetite for electronic and liquid trading.[301] Even though corporate bond markets are mostly dealer-based and OTC, some trading is migrating to electronic venues. One 2020 study estimated that around 14% of the market's volume is handled by electronic platforms rather than OTC dealers.[302] This trend has been notable among lower-rated and junk bonds – perhaps in the hope of increasing their liquidity.[303] Indeed,

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299 THE MODEL NEGOTIATED COVENANTS AND RELATED COVENANTS, 61 BUS. L. 1439, 1440-1441 (2006).

300 Antoine Bouveret et al., *Fragilities in the U.S. Treasury Market: Lessons from the "Flash Rally" of October 15, 2014*, IMF Working Paper, 5-6 (Oct. 2015).

301 Robin Wigglesworth, *Bond Trading Finally Dragged into the Digital Age*, FIN. TIMES, FEB 21, 2021.

302 *See generally*, O'Hara & Zhou, *supra* note [197].

303 THE ECONOMIST, *Electronic Platforms are Challenging Bond Broker-Dealers*, Mar. 7, 2020; Chappatta, *The Bond Trading Revolution*, *supra* note [170].

COVID-19 has reinforced the shift, with electronic platforms experiencing record volumes – with one firm, MarketAxess, reporting around $12.4 billion in daily trading in January 2021.[304]

This emerging popularity of electronic trading suggests that accompanying changes to indentures can act not just as catalysts but also follow as a consequence of such a change.

This trend raises two future dangers for creditor control. For starters, to reap the gains offered by liquidity, issuers decide to overcorrect to dismantle creditor control rights and leave investors with a bare set of (ultra-standard) protections. This reduces contractual density and complexity. Indentures become fungible and comparable – but at a cost. Investors lose out on tailored, valuable creditor protections that reduce agency costs and promote investor discipline. Moreover, platforms competing to attract trading business stipulate/recommend contractual formats that reflect their preferences to make contracts most amenable to trading. This dynamic can foster fragmentation it the look and composition of contracts if platforms stipulate varying conditions.[305] The end result can reflect a multiplicity of contract-types – where single venues dominate in trading a certain type of claim (e.g. junk bonds) – but where claims cannot be easily traded across platforms and the market. In addition, as above, platforms propagate norms that reflect only the barest bundle of contractual rights for bondholders.

To mitigate these risks and in anticipation of electronic trading, our solution first proposes systematic standardization in indenture design. This consists of the following: (i) the development of a set of industry standard-form contracts tiered accordance with the risk posed by the issuer and issue; (ii) an accompanying menu of established, well-vetted, modifying clauses that attach to each tier of contract. We suggest that bond issues come with an explainer stating why a tier of standard form contact and modifying clauses were chosen; (iii) a certification process, likely led by credit rating agencies, that classifies new contract innovations for inclusion in one or more of the contract tiers. Further, we anticipate that, given their longstanding certification role, credit rating agencies also highlight whether an issue/issuer has picked the appropriate tier of contract for the particular risk of the issue/issuer at hand.[306] In combining standardization with a menu of well-studied, modifying clauses, this

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[304] Chappatta, *The Bond Trading Revolution*, *supra* note [169].

[305] In the context of equities, there are differences between the New York Stock Exchange and Nasdaq, see, for example, Sarah Fisher, *NASDAQ vs. NYSE: Key Differences*, Yahoo Finance, Dec. 31, 2019.

[306] Moody's, Covenants, https://www.moodys.com/newsandevents/topics/Covenants-007001 (a service that specificially opines on covenant quality).

model can secure a core, robust set of control rights for investors while also promoting conditions that lead to greater liquidity for claims.

A Tiered Menu of Contracts: we propose the creation of a set of standard-form contracts that are tiered in accordance with the risk of the issuer/issue as agreed industry norm. Just as rating agencies have several grades of credit ratings, we envision several grades of contract, each containing a progressively stricter set of constraints. That is, each contract – irrespective of tier – contains a core set of restrictions. For example, these might include provisions restricting change of control and large asset sales.[307] In addition, the indenture specifies a noted set of common terms and conditions, such as those regarding payment schedules, reporting and disclosure, prepayment (e.g. terms allowing the issuer to call the debt), default processes, penalties (e.g. make-whole clauses), or choice of governing law.

As tiers become riskier, these standard forms expand to include a stricter set of constraints in relation to issue and issuer. For example, in a risky tier – corresponding to a BBB- rating, for example – each standard comes with additional constraints in the base, such as a prescribed restriction on borrowing (e.g. negative pledge), dividends, or asset substitution. Reporting and disclosure can be designed to be more frequent and detailed (to ensure stronger monitoring for riskier firms). For the riskiest tiers, a standard-form contract comes with the thickest set of constraints: language in relation to borrowing is tighter; dividend and borrowing restrictions cover a wider (or entire) set of subsidiaries; maintenance covenants are heavier, pertaining to the company's solvency, financial health and management.

This description is simplified. For example, there may be specific tiers for issues that are collateralized, to include standard clauses that regulate how an issuer treats collateral, reports on it, and preserves its value (e.g. property insurance). Moreover, tiers may vary by relatively fine differences in wording and economic design. Tiers may feature restrictions on future borrowing that allow a company to acquire a certain amount of bank debt, a common practice for riskier issuers.[308]Finally, though the contracts will be standard-form, parties will still have to write-in particularized information about a deal, such as the amount of borrowing permitted by a restriction and which subsidiaries are covered. Crucially, though, the goal lies in streamlining, linguistically standardizing and also simplifying contract language, look and density. Tiers offer investors a menu of options. Tailoring exists by choosing a tier of standard contract, rather than in crafting a distinct set of terms for each issue and issuer.

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[307] Blaut, *supra* note [146].

[308] THE MODEL NEGOTIATED COVENANTS, *supra* note [299], 1501-1503.

Certification: Finally, we propose the creation of a certification process designed to vet new clauses for inclusion in industry standards. Where contract design needs to innovate – for example to be responsive to new norms (e.g. to promote environmental protection, diversity), such a process would provide a mechanism to do so. It would help overcome the path dependencies in contract design that are endemic to bond markets. It would offer a forum for investor representatives, issuers, regulators and platforms to debate contract language with a view to determining whether and how it should be included within standard-form tiered structures. This process has the advantage of assuring that contracts do not ossify on account of collective action and coordination costs. Through a process of study and certification, it also helps bring new standard language into the larger consciousness of market stakeholders and thereby reduce any negative effects it might have on liquidity on account of novelty or complexity.

Relatedly, we envision that ratings agencies will likely play a role in certifying what contractual tier an issuer/issue ought to pick given their longstanding centrality to debt markets, expertise and experience.[309] We suggest that each issue be accompanied by a recommendation for an appropriate contractual tier depending on the riskiness of the issuer and issue. If an issuer decides to use a contract from another tier – for example, to adopt a lighter set of restraints – the market can factor this choice into its cost of capital for the firm.

Our model would safeguard against cyclical erosion by ensuring that standards maintain a core level of protection across tiers. A frothy credit market can place credit discipline at risk as issuers can borrow with fewer covenants, such that investors find themselves exposed when the tide turns.[310] With standardization, investors can be assured of maintaining a core and constant set of rights through which to exercise monitoring and discipline in all seasons. This contractual stability can thus provide a kind of counter-cyclical buffer to bolster credit discipline, so that investors remain covered by a core set of terms during periods of financial distress.

Importantly, this design seeks to encourage liquidity in bond claims. By creating standardization and continuity in contract design, claims ought to become clearer, require less time to evaluate and allow comparability. A standard claim is an insufficient condition for

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309 *See for example*, Frank Partnoy, *How and Why Credit Rating Agencies are Not Like Other Gatekeepers*, San Diego Legal Studies Paper No. 07-46 (2006)(describing the unique position of credit ratings agencies and highlighting problems like conflicts of interest).

310 For loans, see for example, Mark Carey, *Financial Innovation May Cause the Next Recession as Protection-Lite Loans Falter*, Barron's (Apr. 8, 2020); Larry Light, *A Decade After the Financial Crisis, Corporate Finance Must Contend with These New Ticking Debt Time Bombs*, Fortune (Dec. 29, 2019). For analysis, Bo Becker & Victoria Ivashina, *Covenant-Light Contracts and Creditor Coordination*, 3-4 (Swedish House of Finance Research Paper, No . 16-09, 2016) (analyzing market environment, creditor coordination or borrower demand for cov-lite loans).

liquidity. But, it is a necessary one. With increased electronic trading, shifts in contract design might bring a greater diversity of traders to the market. With a mix of informed and lesser information traders, dealers ought to be more enthusiastic about supplying trading opportunities. Indeed, one prominent investment bank has contracted to make markets on MarketAxess.[311] In all, this holds out the promise of bond markets becoming more reliably capable of generating informative prices that promote cheaper monitoring for investors.

B. *Strengthening Enforcement*

In the second part of our solution, we advocate for policymakers and market participants to develop structural solutions that can ease the enforcement burden on bondholders. As detailed in Part III, public bond markets suffer from anemic or opportunistic enforcement of bond terms.[312] Bondholders are subject to procedural hurdles that limit ease of enforceability and minimally supported by an unmotivated, ineffectual indenture trustee.[313]

As a starting point, we echo other scholars that have called for a thoroughgoing reform of the office of the indenture trustee.[314] This entails Congressional reform of the Trust Indenture Act (TIA) to enact serious commitment on the part of the indenture trustee to monitor issuers and protect their interests (e.g. through a fiduciary duty and the authority to negotiate on their behalf).[315] Given the time and uncertainty involved in future rulemaking, though, we also suggest a potential private fix that goes hand-in-hand with trend toward higher volumes of electronic trading in bond markets.

This solution proposes allowing bond trading platforms to assume the role of indenture trustee as a way to foster private monitoring of bond markets on behalf of investors and the market. In addition to taking on the fairly light duties involved in indenture trusteeship, we propose creating incentives for platforms to contract to provide monitoring and data services on issuers for investors to mitigate the deficiencies involved in detecting and actioning defaults.

Electronic Platforms as Trustees: As electronic platforms gain issuer and trading business, we suggest that regulators expressly

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311 Chappatta, *supra* note [169].

312 Kahan & Rock, *supra* note [152]; Guo et al., *supra* note [156].

313 Kahan & Rock, *supra* note [152], 298-302.

314 See e.g. Amihud et al., *supra* note [117]; Schwarcz & Sergei, *supra* note [160].

315 Amihud et al., *supra* note [117] (calling for an engaged supertrustee empowered to represent investors and renegotiate covenants).

permit to them to take on the position of indenture trustee. In a formalistic sense, this would satisfy the requirement in the TIA that public issues include an indenture trustee.[316] From the substantive standpoint, electronic platforms are likely to be especially well-suited to communicating with investors, maintaining vigilance over issuers and their compliance with indenture terms as well as facilitating the enforceability of standard-form bond indentures. This can enable bondholders to contract with platforms for the provision of monitoring and surveillance services that go beyond what is provided by and required of traditional indenture trustees.

First, electronic platforms have logistical advantages over other kinds of firms in ensuring transparency and communication with investors. Platforms are closest to the bonds being traded. As bonds become more standardized and capable of electronic trading, so too would the incentive for platforms to develop expertise about bonds and public issuers. This proximity and motivation can support monitoring by venues of issuer compliance with indenture terms as well as in transmitting data across the marketplace.

Importantly, equities exchanges have become hubs for collecting and disseminating vast amounts of up-to-the-millisecond data on news, prices, current trends and analysis – and for monitoring public companies.[317] Exchanges have gained much from this data collection and dissemination role – not least in fees and charges for services as well as strengthening relationships for those that transact on the platform.

To be clear, equity exchanges have attracted heavy criticism for charging excessive fees to supply information to investors and traders.[318] It is certainly possible (if not highly likely) that platforms take advantage to extract unfair and costly rents for becoming a trustee-plus to bondholders. But this hurdle notwithstanding, platforms offer an expert and available mechanism to collect and provide data to investors, helping overcome longstanding barriers to monitoring and detecting issuer distress and the possibility of default.

Further, we propose that platforms' proximity and positioning can modernize the processes for bondholder coordination. Platforms could offer services that help connect and convene investors to enable voting on decisions (e.g., whether to declare an event of default). Virtual digital decision-making between investors, coordinated through platforms, can lower the costs involved in collective investor

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316 Trust Indenture Act, § 302(a)(1).

317 See e.g., Nasdaq, Market Data All Product Suite, https://www.nasdaq.com/solutions/market-data-all-product-suite.

318 See e.g., Ksenia Galouchko, *A 400% Surge in Data Costs Is Enraging Traders in Post-MiFID Era*, BLOOMBERG, (DEC. 10, 2019).

action. Easier communication, information sharing and decision-making can motivate investors to be more engaged as monitors. Because the costs of action are lower, investors may engage more frequently on matters of enforcement. In addition to supplying data, then, platforms acquire a role as intermediaries to facilitate creditor control and activism. This intervention might be proactive by alerting investors to a possible violation and convening interested bondholders to consider ways to avoid a default. By streamlining communication with and between investors, providing digital tools to debate and vote on outcomes, platforms can be uniquely powerful in strengthening efficient enforcement as well as enhancing the role of investors in discipline.

At first glance, such an idea may appear radical. However, exchanges (and even lesser regulated platforms) have long played a quasi-regulatory role in the securities marketplace.[319] Regulated national exchanges are mandated to exercise private self-regulation over users. This requires them to impose entry requirements on who uses the platforms, surveillance and enforcement of applicable regulation and industry norms.[320] Even smaller-scale, less-regulated alternative trading systems are subject to obligations to supervise their platform and ensure that these are resilient and secure.[321] With bond trading migrating to regulated venues, it makes sense to extend their monitoring, supervisory and disciplinary role correspondingly.

Further, platforms ought to be motivated to take on a strong role in monitoring and coordinating investors in bond markets. First, this role would expand their business and offer a source of revenue and influence in an area where they can have expertise. Secondly, platforms can gain from a marketplace that is composed of engaged investors and disciplined borrowers. Issuers can work more effectively to lower the agency costs of debt. Investors should feel safer when they can vindicate their contractual rights and skirt complex, costly resolution proceedings. Moreover, liquidity, price efficiencies and good market oversight can beget positive externalities in the form of more investors and more issuers coming to transact.[322] Thirdly, these gains should offset the risk of liability arising in the context of platforms

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[319] Exchange Act § 6(a), 15 U.S.C. § 78f(b) (2000) (on the mandate on exchanges to oversee and regulate markets); *See also,* David A. Lipton, *The SEC or the Exchanges: Who Should Do What and When? A Proposal to Allocate Regulatory Responsibilities for Securities Markets*, 16 U.C. Davis L. Rev. 527, 528–30 (1983) (highlighting the role of exchanges in market supervision and showcasing the advantages); On alternative trading systems and their weaker supervisory burden, Regulation ATS—Alternative Trading Systems, 17 C.F.R. § 242.300 (2015).

[320] Exchange Act § 6(a), 15 U.S.C. § 78f(b) (2000).

[321] Regulation ATS—Alternative Trading Systems, 17 C.F.R. § 242.301(6) (2015).

[322] *See* Ananth Madhavan, *Market Microstructure: A Survey*, 3 J. FIN. MKTS. 205, 222–24 (2000) (detailing the positive externalities of liquidity for exchanges).

taking on an active role in monitoring issuers and convening investors. In general, indenture trustees are subject to few sources of real liability, despite attempts by investors to hold them responsible for failures (e.g., to check the accuracy of an issuer's disclosures.).[323] In the context of platforms contracting to provide meaningful surveillance, however, liability risks will increase as will the cost of reputational damage in the face of investor losses. This problem, though, is not a new one. Though exchanges generally enjoy expansive qualified immunity in the discharge of their oversight function, they can still be held liable for matters relating to their commercial business.[324] Smaller platforms, too, have faced lawsuits and regulatory sanction for breaching obligations to those trading on their venue.[325] Simply put, however, such actions have not halted venues from offering services. But they do help hold powerful platforms accountable in the provision of facilities for investors and the marketplace.[326]

To be sure, platforms are far from ideal overseers. Scholars have long been critical of exchanges' conflicts of interests that might limit how fully they are willing to punish paying customers (e.g., issuers or traders).[327] In response, exchanges have set up institutional fixes – like setting up units partitioned from their main trading business – to mitigate the risk.[328] But fixes are not perfect. And there are likely to be conflicts that need to be managed that arise out of the reality that exchanges and platforms depend on revenues from bond issuers as well as traders. While drawbacks exist, the institutional advantages of trading platforms are unique and powerful – and liable to increase as bond contracts become more standard and liquid.

C. *Choice and the Status Quo*

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[323] Racepoint Partners, LLC et al. v. JPMorgan Chase Bank, N.A., 2010 NY slip op. 0267 (N.Y. 2010); Steven L. Schwarcz, *Indenture Trustee Duties: The Pre-Default Puzzle*, Harvard Law School Bankruptcy Roundtable, Jul. 8, 2019, http://blogs.harvard.edu/bankruptcyroundtable/2019/07/09/indenture-trustee-duties-the-pre-default-puzzle/.

[324] *See e.g.*, City of Providence v. BATS Global Markets, Inc., 878 F.3d 36 (2d Cir. 201). For discussion, Yadav, Yesha, *Oversight Failure in Securities Markets*, 104 CORNELL L. REV. 1799, 1781-1782 (2019)

[325] Keri Geiger & Sam Mamudi, *Barclays, Credit Suisse Agree to Dark Pools Settlements*, BLOOMBERG, Jan. 31, 2016.

[326] On the high cost of exchange data and its impact on market quality, see, Jonathan Brogaard et al., *Competition and Exchange Data Fees*, Working Paper (Nov. 2020); Yesha Yadav, *Insider Trading and Market Structure*, 63 UCLA L. REV. 968 (2016).

[327] For a discussion of the literature on exchanges and conflict of interest, see Yadav, *Oversight Failure*, *supra* note [324], Part I(C).

[328] See e.g. NYSE, NYSE REGULATION, https://www.nyse.com/regulation.

In the last part of our solution, we anticipate the continuing operation of the OTC, dealer-led bond market that permits market participants to select tailorability and accept less liquidity.

The status quo provides that investors and issuers that wish to tailor their contract beyond the bundle of terms set out in standardized tiers are still able to do so. If a deal requires a specific combination of clauses, to reflect a particularized type of collateral, priority scheme or constraint on borrowing, for example, this can be achieved as at present, albeit at the price of holding a less liquid claim. Ensuring continuity of the present model promotes flexibility in deal design, and preserves the private ordering characteristic of bond markets.

Indeed, the availability of a standardized market operating in parallel with one that is fully tailorable can deliver benefits for both spaces. Investors and issuers can opt into either market depending on preference. This can mean that investors choosing tailorability may be especially motivated to exercise control and to take advantage of the engagement afforded by the claim. And by assuming stickiness, investors are deliberately choosing a less liquid claim for a reason – to be activist, possess a certain quality of control levers and because they do not anticipate trading (e.g., funds that plan to keep the claim on their books). This specialization among the investor base can also be positive for those in the more standardized market. Bondholders as a whole may gain as a result of those motivated to contract for and use a certain kinds of control rights. In other words, intervention by engaged investors can reduce agency costs for others. Conversely, information gained through a more liquid and efficient market, monitoring and policing by platforms can be helpful for all investors, including those that do not hold liquid claims. Investors might choose a combination of a company's more standard-issue bonds, as well as traditional bonds in the OTC market, structuring their portfolios to include liquid claims alongside those offering high tailorability.

In summary, this Part provides a way forward to repair the broken bond market by proposing a three-part solution to give investors choice, control and liquidity. Central to this proposal is the recognition that bond markets are moving towards electronic trading, producing a demand for standardized claims. A menu of tiers that each offers a varying but standard set of entitlements builds tailorability and creates contractual features that can promote comparability, clarity and convenience for investors. This combination holds out the promise of aligning control, liquidity and price efficiency in bond claims. In addition, noting the larger role of trading platforms in coming years, we suggest a stronger role for venues in policing issues and facilitating enforcement. Finally, we envision an important ongoing role for the present-day market structure that retains fullest tailorabilty and limited liquidity. A space for high tailoring would satisfy those bondholders that specifically seek out control and

engagement rather than liquidity in the bond claim. Overall, the bond market becomes organized into two parts, the first radically standardizing and simplifying claims to actualize the bond as a tradable security with control rights; and the second that retains private choice and fullest contractability in the bond claim.

V. CONCLUSION

At $11.2 trillion, the corporate bond market represents a critical engine for financing Main Street and building investor portfolios. Its significance has only grown in the wake of the pandemic as companies have borrowed to stay afloat against the odds. Yet for all of its size and importance, it rests on a fundamentally broken model of investor protection. As structured, it fails to offer investors protection through effective creditor control and efficient trading, depriving bondholders of entitlements that are taken for granted in equity markets. In this Article, we set out this problem and explore the implications for better realizing the promise of bondholder discipline as a way to mitigate agency costs and encourage investment. Our solution offers a workable pathway towards ensuring that reform of bond markets captures the shift towards electronification while preserving diligent creditor control and promoting liquidity and informational gains. This would help bring bondholders – long neglected and underprotected by policy – more in line with their counterparts in equity as full participants in U.S. public markets.