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Don't Go Chasing Waterfalls: Fiduciary Duties in Venture Capital Backed Startups

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Abstract

We develop a model of venture capital contracting and use it to evaluate an emergent set of judicial precedents in corporate law, which we label the Trados doctrine. In our model, founders hold common stock while venture capital investors hold convertible preferred stock. We show that preferred shareholders have inefficient incentives to liquidate low-valued firms and to continue high-valued firms, while common shareholders inefficiently favor the opposite. The extent of incentive misalignment depends on the firm's intrinsic and outside valuations, and it is most severe around preferred's liquidation preference and conversion point. Although legal liability rules can rectify these misalignments, they can only do so categorically when management prioritizes {preferred} shareholders' interests. The Trados doctrine, however, generally obligates management to prioritize common shareholder's interests. Our model offers a precise mechanism for how capital structure, corporate governance, and legal doctrine jointly determine firm value.

Keywords: Venture Capital, Preferred Stock, Fiduciary Duties, Liquidation Preference, Conversion Rights, Contract Design, Corporate Governance, Efficient Breach

JEL Classifications: G30, G34

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1 Introduction

Whether a private company backed by venture capital (VC) succeeds or fails depends in large part on its ability to manage intra-shareholder conflicts.[1] Many of these conflicts arise from a double agency problem: a successful startup requires sequential, non-contractable effort from from two distinct types of shareholders – founders and VCs – whose interests do not perfectly align (Schmidt, 2003).

Yet an even deeper source of this conflict – and the one we study here – is found within the capital structure of the firm itself: In a typical VC-backed firm, the founders and other early employees hold common stock while VC investors hold preferred stock augmented with a variety of special rights.[2] Such special rights can include, for example, board representation, consent rights, priority payments upon exit, and options to convert preferred shares or redeem them for cash. Problems can (and inevitably do) arise when strategic business decisions also implicate these rights, pitting preferred shareholders against common. In such settings, the board of directors must decide how to honor the special rights of preferred shareholders while discharging its own fiduciary obligations. And, while directors are (in theory) obliged to advance the joint interests of *all* shareholders,[3] practical realities often militate that they

[1] To some degree, intra-shareholder conflict is a feature, not a bug, of VC dealmaking – at least from the VC's point of view. That is, VCs intentionally insist on terms that enable the VC to exercise control over the firm precisely in settings where common shareholders want to pursue strategies that are not in the VC's interest. VCs, so the argument goes, would not invest in a deal unless the terms gave them power to override common shareholders' interest. Indeed, when asked about how such terms inherently create conflicts of interest, the venture capitalist John Doerr is said to have once quipped: "No conflict, no interest." Blodget (March 11, 2011). On legal conflicts in VC-backed firms, see, e.g., Bratton (2002); Fried and Ganor (2006); Bratton and Wachter (2012)

[2] See Kaplan and Strömberg (2003); Gilson and Schizer (2003). Both scholarship and case law also provide many instances of conflicts within a single class of common shareholders. For example, shareholders have conflicting interests when they transact with the company (Kahn v. M & F Worldwide Corp., 88 A.3d 635 (Del. 2014)) when they own (or are) competing businesses (Gilo (2000); Azar, Schmalz and Tecu (2015); Sanga (2018); Sinclair Oil Corp. v. Levien, 280 A.2d 717 (Del. 1971)), when their ownership is intermediated by others (Bartlett, 2006), when they possess disproportionate voting power (Masulis, Wang and Xie, 2009; Bebchuk, Kraakman and Triantis, 2000), when they have different investment horizons (Barzuza and Talley, 2016), and when they promote opposing social objectives (Webber, 2018).

[3] See North American Catholic Education Programming Foundation, Inc. v. Gheewalla, 930 A.2d 92, 101

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cater to the interest of the class of shareholders – be it preferred or common – that appointed them.

The class conflict between common and preferred is particularly acute when the company is deciding whether to continue operations or "exit" (such as by liquidating, scaling down, or being acquired). Exit decisions are an increasingly common source of VC-related litigation. In several recent cases, VCs holding preferred shares have used their special rights to force an exit over founders' objections.[4] Yet in other cases, common shareholders held control and similarly ignored preferred's special rights in resisting exit.[5] These legal disputes arose because both the terms of the VC contract and directors' fiduciary obligations in the presence of multiple classes of stock are incompletely specified; both the VC contract and the applicable law are incomplete. These and other cases thus expose a fundamental uncertainty over whether and how VC firms' special rights circumscribe directors' fiduciary obligations to the corporation and its shareholders *writ large*.[6]

In this paper, we develop a general theoretical framework to study this uncertainty and the preferred-common conflict in general. To focus our analysis, we consider the interaction of two nearly-ubiquitous special rights that are are enjoyed by VC investors: (1) liquidation preferences, which entitle preferred shareholders to a priority claim on the proceeds from liquidating the firm; and (2) conversion rights, which entitle preferred shareholders to exchange their shares for a predetermined number of common shares. We study how these rights –

(Del. 2007) ("The directors of Delaware corporations have the legal responsibility to manage the business of a corporation for the benefit of its shareholders owners.") (internal quotations omitted).

[4]See, e.g., SV Inv. Partners, LLC v. ThoughtWorks, Inc., 7 A.3d 973 (Del. Ch. 2010), judgment entered, (Del. Ch. 2011), and aff'd, 37 A.3d 205 (Del. 2011). In re Trados Inc. Shareholder Litigation, 73 A.3d 17 (Del. Ch. 2013) (hereinafter "*Trados*"); Frederick Hsu Living Trust v. ODN Holding Corp., No. CV 12108-VCL, 2017 WL 1437308 (Del. Ch. April 14, 2017), as corrected (Apr. 24, 2017) (hereinafter "*ODN*"); Basho Technologies Holdco B, LLC v. Georgetown Basho Investors, LLC, No. CV 11802-VCL, 2018 WL 3326693 (Del. Ch. July 6, 2018); Laster and Zeberkiewicz (2014). See also TCV VI, L.P. v. TradingScreen Inc., No. CV 10164-VCN, 2015 WL 1598045 (Del. Ch. Feb. 26, 2015).

[5]See, e.g., PWP Xerion Holdings III LLC v. Red Leaf Resources, Inc., C.A. No. 2017-0235-JTL (Del. Ch. Oct. 23, 2019) (Laster, V.C.).

[6]See section 2.

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when crossed with directors' fiduciary obligations – affect a board's decision to continue or exit. In our model, a VC firm (the preferred shareholder) makes an investment in a founder's project (the common shareholder). In addition to the special rights, the VC-founder contract specifies a governance regime that determines whether preferred or common control exit decisions as well as a liability payment to the non-controlling party when an exit/continue decision is "wrongfully" forced upon them by the controlling shareholder.

Analysis of our model delivers several substantive contributions. First, we show that preferred shareholders' special rights can lead not only to disputes about whether to shut down poorly performing firms (as is well known in the law and finance literature) but also to similar – but inverted – disputes about the stewardship of profitable firms. Preferred shareholders are over-incentivized to liquidate low-valued firms, but also under-incentivized to liquidate high-valued firms. The exact opposite holds with common shareholders: they are too eager to liquidate high-valued firms and too reluctant to liquidate low-valued ones.

These incentives emerge because preferred's liquidation preference is functionally equivalent to a priority debt claim on the firm. Preferred will thus inefficiently shut down low-valued firms because their upside is (locally) bounded by the liquidation preference, while common will inefficiently continue because their downside is bounded at zero. For more profitable startups, however, preferred's conversion right reverses this tendency. As the firm becomes more and more valuable, it becomes increasingly profitable for preferred to convert their position to common stock; preferred once again see upside risk on the horizon, while their downside is still substantially bounded by the liquidation preference. Common, by contrast, are less interested in continuing because marginal upside success invites dilution at the hands of converting preferred shareholders. Common's net position becomes relatively debt-like because it suffers all downside losses but receives only a fraction of (post-conversion) upside gains; it thus switches from being too reluctant to too eager to liquidate. As a general matter, neither common nor preferred shareholders have preferences that align precisely with

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value maximization.

The inversion of preferred and common's incentives described above exposes a fundamental reason why courts have struggled to navigate this terrain: Directors' traditional fiduciary obligations to "the residual interest" are indeterminate because the identity of the *relatively* residual claimant depends on the value of the firm. Moreover, this dependence applies to the combination of the firm's value as a going concern and its value to potential third-party buyers.

The second main contribution of our model is that it provides a vehicle for analyzing and evaluating the emerging case law on the preferred-common conflict, which hereinafter we refer to as the *Trados* doctrine.[7] That doctrine resolves the preferred-common conflict by striking an uneasy compromise: On the one hand, it provides that when facing a decision in which common and preferred's interests conflict, directors' fiduciary obligation is to act in the interests of common shareholders.[8] On the other hand, the doctrine further provides a path by which a decision made by a preferred-dominated board may ultimately be permitted to stand.[9] Our model allows us to analyze the core features of the *Trados* doctrine, namely, the governance and liability rules. Together, these rules determine in whose interests (preferred or common) boards must act, and whose interests are relegated to a contract damages claim.

Our model demonstrates that a governance rule that requires the board to act in common shareholders' interests (what we call a "common choose" rule) is frequently unintuitive in structure and only sometimes efficient: In some cases, there exists a damages rule that induces common shareholders to internalize preferred's losses efficiently. But in other cases, no such efficient damages rule exists. Further, even when an efficient damages rule does exist, it often entails supracompensatory damages that are not only inconsistent with common law contract principles, but also beyond the authority of many (if not most) courts hearing such

[7] In re Trados Inc. Shareholder Litigation, 73 A.3d 17 (Del. Ch. 2013).
[8] See section 2, *infra*.
[9] See section 2, *infra*.

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claims.[10] By contrast, given a governance rule that requires the board to act in preferred shareholders' interests (what we call a "preferred choose" rule), the standard expectation measure of damages always induces preferred shareholders to internalize common's losses efficiently.

A third contribution of our analysis is to demonstrate the imperfect nature of a legal regime that prescribes immutable contours to fiduciary obligation (rather than allowing investors to tailor fiduciary duties to their specific setting). Although it is conceivable that some venture-backed firms might favor the common choose rule (which the fiduciary obligation announced in *Trados* would suggest, if not actually enforce), our analysis suggests that mandating a common choose governance rule generates direct economic costs that would need to be justified by indirect benefits. Such benefits are – in our estimation – *sui generis* and contingent, and even when present may not be sufficiently large to overcome the direct costs we identify. Outside of such scenarios, VC-backed companies could enhance value by contracting out of a common choose regime – an option that appears cumbersome and uncertain at present. Our analysis thus exposes both the theoretical and practical limits of a mandatory fiduciary regime, and the second-best nature of a regime in which shareholders can tailor fiduciary duties: under the latter, shareholders may not always form first-best agreements, yet mandating certain fiduciary protections can sometimes make matters worse.[11]

Finally, our paper contributes to a large literature that studies the design of venture capital contracts (Sahlman, 1990; Hart, 2001; Klausner and Venuto, 2012), and particu-

[10] One possible implication of this finding – discussed below – is that preferred's harm from breach cannot be adequately compensated with expectation damages, thereby justifying injunctive relief under common law principles. See Chesley (forthcoming 2021) (arguing in favor of injunctive relief of preferred stockholders' consent rights). In our model, we show that a similar end is accomplished when the board is obligated to prioritize preferred's interests because this accords preferred stockholders fiduciary primacy (and a presumptive right to equitable remedies) and protects common with a damages rule that is adequately compensatory.

[11] See Rauterberg and Talley (2017). The *Trados* opinion briefly muses about the possibility of "contracting out" of common's primacy through a charter provision, but Vice Chancellor Laster ultimately punts on the question. See *Trados*, n.32 ("This decision provides no opportunity for expressing a view as to the effectiveness of any such mechanism or realignment, and it does not intimate one").

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larly the role of convertible securities (Triantis and Triantis, 1994; Kaplan and Strömberg, 2003; Schmidt, 2003; Hellmann, 2006). By jointly considering the legal, financial, and corporate governance features of the contract design problem, our analysis connects with several strands of this literature. For example, Schmidt (2003) argues that successful startups require sequential effort from both the entrepreneur and VC firm and that VCs use convertible securities to induce efficient levels of this effort (see also Berglof (1994)). Our model highlights the governance cost of this design: by driving a wedge between the founders' and VC's exit payoffs, it leaves VC-backed firms susceptible to inefficient exits; in particular, a VC that controls a relatively unsuccessful startup becomes over-incentivized to exit by acquisition. Similarly, firms in which VCs have stronger control rights are more likely to replace the founder with an outside CEO (Hellmann and Puri, 2002) and more likely to exit by acquisition (Cumming, 2008). A standard explanation of such findings draws on the large literature documenting founders' private benefits of control – and positing that such benefits lead to hold-out problems at the moment of an IPO (Aghion and Bolton, 1992; Berglof, 1994; Hellmann, 1998). While such private benefits are no doubt important, we offer an alternative explanation based squarely on a startup's capital structure: even in the absence of private benefits to control, the structure of the VC contracts can over-incentivize VCs to choose exit whenever the firm's intrinsic and outside valuations are relatively low.

The rest of this paper is organized as follows. Section 2 situates our analysis in the case law. Section 3 sets up the model and shows how common and preferred's interests diverge. Section 4 characterizes the liability rules that guarantee ex post efficient decisions; it covers both the case in which shareholders adopt the common choose rule and the case in which they adopt the preferred choose rule. Section 5 uses the model to evaluate Delaware's emergent *Trados* doctrine; it also posits circumstances that, in spite of the inefficiencies identified by the model, might still justify a common choose rule. Section 6 concludes.

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2 Legal Setting

This section motivates and situates our analysis by describing the emergent case law on preferred-common conflicts, which we collectively refer to as the *Trados* doctrine. Section 2.1 first compares the preferred-common conflict to the facially similar (and more familiar) conflict between shareholders and creditors in the so-called "zone of insolvency." Section 2.2 then distinguishes the preferred-common conflict from the debt-equity conflict. Section 2.3 canvases potential legal solutions to the preferred-common conflict.

2.1 The Debt-Equity Conflict

If the legal conflict between preferred and common sounds familiar, it is because we have been here before – at least approximately. Over a quarter-century ago, Delaware courts dealt with a similar set of disputes between shareholders on the one hand and junior creditors on the other. These conflicts concerned corporate actions that were taken while the firm was in the so-called "zone of insolvency." For firms in financial distress, boards must often decide between actions that benefit creditors (such as liquidating a firm with little or no payout to stockholders) and actions that benefit stockholders (such as continuing a firm but at the risk of losing its remaining assets). The usual question in these shareholder-creditor disputes was whether directors should be obliged to maximize a firm's total value, or merely its shareholders' residual claim. And in a famous footnote to the 1991 Delaware case of *Credit Lyonnais v. Pathe Communications*, then-Chancellor William Allen suggested the former: In non-binding *obiter dictum*, he suggested that within the zone of insolvency, directors' fiduciary obligations run to the "community of interests that the corporation represents," even if the corporate actions necessary to advance these interests are inconsistent with actions

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that maximize shareholder returns.[12]

Significant confusion ensued for many years afterward, as courts grappled with the meaning of this language and creditors brought fiduciary claims against distressed firms, challenging corporate decisions that benefited shareholders at the expense of creditors. More than 15 years passed before the Delaware Supreme Court finally put an end to the debate (or so it thought). In *North American v. Gheewalla*, the Delaware Supreme Court reversed course and held that creditors have no rights under fiduciary law so long as the distressed firm remains solvent.[13] Thus, *Gheewalla* resolved the debt-equity conflict by simply eliminating directors' fiduciary obligations to creditors outside of bankruptcy. It was silent, however, about how to confront conflicts *among* classes of shareholders.

2.2 The Preferred-Common Conflict

While reminiscent of the *Ghewalla* context, conflicts among common and preferred shareholders are far more vexing; unlike the creditor-shareholder conflict, here *both* constituencies hold equity claims, and each is a beneficiary of the "undivided" loyalty that directors purportedly owe to the corporation (and derivatively to its stockholders). Compounding this challenge is the fact that preferred shareholders bargain for special rights – such as preferential payouts, control rights, and optionality – that tend to obscure the identity of the "true" residual claimant(s). Such special rights thereby obscure the traditional financial rationale (the existence of a residual claimant) that motivate the existence of fiduciary duties in the

[12]Credit Lyonnais Bank Nederland, N.V. v. Pathe Communications Corp., No. CIV. A. 12150, 1991 WL 277613, at 36 (Del. Ch. Dec. 30, 1991).

[13]Specifically, the court held that:

> When a solvent corporation is navigating in the zone of insolvency, the focus for Delaware directors does not change: directors must continue to discharge their fiduciary duties to the corporation and its shareholders by exercising their business judgment in the best interests of the corporation for the benefit of its shareholder owners.

North American Catholic Educational Programming Foundation, Inc. v. Gheewalla, 930 A.2d 92, 101 (Del. 2007).

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first place.

Consider three examples. In the 2019 case of *Xerion v. Red Leaf*, a preferred shareholder had secured the right to veto (i) any material change in the business model, (ii) any interested transaction, and (iii) any buyback or redemption of an equity interest. When the firm's initial business strategy proved unsuccessful, its key business partner paid a hefty sum to exit their joint venture. Common shareholders – who controlled the board – subsequently attempted to keep the corporation afloat by embracing a different technological approach and thus purportedly changing the business model. The largest preferred shareholder then sued, claiming (inter alia) that it had not given its consent to change the firm's business model. The Delaware Chancery Court found for the plaintiffs at the summary judgment phase, concluding that the firm breached several of the preferred's special rights.[14]

Similarly, in the 2018 case of *Basho v. Georgetown*, a VC firm holding preferred shares accumulated control over the company via a series of preferred stock offerings. The common shareholders then sued the VC after the VC used its control to block additional funding (and thus retain its control). After a lengthy fact-finding investigation, the court concluded that the VC exercised its control unfairly and ordered damages payable to common.[15]

Finally, in the 2013 case of *In re Trados* (which spawned the eponymous doctrine), VCs in control of the board forced a sale for $60 million; of this, $52 million went to the VCs (to satisfy their preference), $8 million went to management (a bonus incentive payment for selling the firm), and common was left with nothing.[16] Common shareholders sued for breach of fiduciary duty. This time, the court found no breach of fiduciary duty because $0 was a "fair price" for common's then-out-of-the-money shares at the time of exit.

[14]PWP Xerion Holdings III LLC v. Red Leaf Res., Inc., No. CV 2017-0235-JTL, 2019 WL 5424778 (Del. Ch. Oct. 23, 2019) (hereinafter "*Xerion*"). *Xerion* settled before the court could fashion a remedy.

[15]Basho Technologies Holdco B, LLC v. Georgetown Basho Investors, LLC, No. CV 11802-VCL, 2018 WL 3326693 (Del. Ch. July 6, 2018). The court ruled that the preferred shareholder had both acquired control unfairly and that blocking additional funding amounted to an abuse of that control. Other classes of preferred shareholders also joined the suit as plaintiffs.

[16]In re Trados Inc. Shareholder Litigation, 73 A.3d 17 (Del. Ch. 2013).

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These and other cases illustrate the legal uncertainty that obtains when directors' fiduciary obligations interact with preferred's special rights. It is not clear *a priori* whether and how preferred's special rights circumscribe directors' fiduciary obligations to common shareholders. According to the court, a board could potentially "comply with its fiduciary duties [to all shareholders] while making a decision that breaches [the special rights to preferred]," yet it might also "comply with [the special rights] under circumstances where its fiduciary duties would call for . . . breach."[17] Moreover, the act of exercising a special right can itself compound the uncertainty: because such an act exercises control over the corporation, preferred shareholders may find themselves owing fiduciary obligations to the corporation as a controlling shareholder.[18] Finally, shareholders' attempts to allocate control by contract also create contractual gaps that courts must then fill in with fiduciary obligations.[19] Multiple classes of stock thus generate multiple levels of uncertainty over the fiduciary obligations of directors, officers, and shareholders.

2.3 Potential Legal Solutions

Only recently have Delaware courts begun to explore potential solutions for the corporate governance conundrum detailed above. The overarching theme of this approach is that boards should advance the interests of "stockholders in the aggregate . . . without re-

[17]PWP Xerion Holdings III LLC v. Red Leaf Res., Inc., No. CV 2017-0235-JTL, 2019 WL 5424778, at 15 (Del. Ch. Oct. 23, 2019) ("A board can readily comply with its fiduciary duties while making a decision that breaches a contract, just as a board could opt to comply with a contract under circumstances where its fiduciary duties would call for engaging in efficient breach.") (citing Frederick Hsu Living Tr. v. ODN Hldg. Corp., 2017 WL 1437308, at 24 (Del. Ch. Apr. 14, 2017).)

[18]See, e.g., Basho Technologies Holdco B, LLC v. Georgetown Basho Investors, LLC, No. CV 11802-VCL, 2018 WL 3326693 (Del. Ch. July 6, 2018) ("It is impossible to identify or foresee all of the possible sources of influence that could contribute to a finding [that a shareholder owes fiduciary obligations as a controller]. Examples include . . . the exercise of contractual rights to channel the corporation into a particular outcome by blocking or restricting other paths.")

[19]For example, in the *ODN* case, redemptions could only be made out of funds that are "legally available," and such funds could only be generated by "reasonable actions (as determined by the [ODN's] Board of Directors in good faith and consistent with its fiduciary duties)." *ODN* at 4. Neither term was defined in the agreement.

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gard to any special rights" possessed by preferred shareholders.[20] In principle, this approach mandates that directors treat preferred's special rights like any other contractual obligation (akin to the creditors in *Ghewalla*). But it also requires directors to recognize that preferred shareholders are still equity holders themselves, and thus the board must identify the collective interests that preferred and common shareholders. Intuitive though this admonition may be, it is of limited assistance when – as in the litigated cases described above – preferred and common adamantly disagree over which course of action promotes the interests of "shareholders in the aggregate."

In the 2017 case of *Hsu v. ODN*, however, Vice Chancellor Laster suggested a novel legal solution. He opined that instead of searching within the realm of fiduciary law, a court may find a clearer solution outside of it, specifically within the contract doctrine of "efficient breach." Laster's proposed solution identified common shareholders as the "true" residual claimants of the corporation,[21] and consequently required the board *always* to grant primacy to their interests. In so doing, however, the directors would also account for the firm's legal exposure of breaching any special rights owed to preferred. If such damages for a wrongful decision were properly calibrated to expectation damages, he opined, directors would efficiently internalize the conflict between shareholder classes.[22]

Although not explicitly pondered by VC Laster, the efficient breach solution also suggests an alternative rule: instead of letting common's interests control the exit decision (subject to damages owed to preferred), fiduciary duties could mandate that boards act in preferred's

[20]Frederick Hsu Living Trust v. ODN Holding Corp., No. CV 12108-VCL, 2017 WL 1437308, at 17 (Del. Ch. April 14, 2017), as corrected (April 24, 2017). *Accord* In re Trados Inc. Shareholder Litigation, 73 A.3d 17, 39-40 (Del. Ch. 2013) ("A board does not owe fiduciary duties to preferred stockholders when considering whether or not to take corporate action that might trigger or circumvent the preferred stockholders' contractual rights. Preferred stockholders are owed fiduciary duties only when they do not invoke their special contractual rights and rely on a right shared equally with the common stock.")

[21]We question this claim theoretically below.

[22]Hsu v. ODN Holding, at 48. Because the directors in *Hsu* did not follow this approach, the litigation proceeded the merits. In 2020, Vice Chancellor Laster found for the defendants, holding (similar to *Trados*) that the frozen out common shareholders received a fair price for their out-of-the-money call option. *See* Frederick Hsu Living Trust v. Oak Hill Capital Partners III, L.P., 2020 WL 2111476 (Del. Ch. 2020).

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best interests (subject to damages owed to common). Both approaches – in which either preferred or common receive primacy – are premised in contract law principles, and both appear plausible. Neither, however, has been thoroughly explored in the academic literature.

3 A Model of the Preferred-Common Conflict

In the next two sections, we develop a model of the preferred-common conflict and use it to analyze the *Trados* doctrine. Sections 3.1 and 3.2 explain how we incorporate the key features of the *Trados* doctrine into a model of VC contracting. Section 3.3 lays out the ex ante bargaining setting. Section 3.4 shows how common and preferred's incentives diverge in the absence of legal intervention. Section 4 characterizes the liability rules that promote efficient breach. All proofs are in the appendix.

3.1 Modeling the *Trados* Doctrine as a Pair of Legal Entitlements

In *Trados* and cases like it, preferred and common shareholders dispute two core issues: (1) who controls a given corporate decision and (2) how the controller is held accountable (or not) to the interests of the non-controller. We analyze these issues by imagining a setting in which preferred and common shareholders can contract over them. In our model, shareholders form an agreement that determines (1) which shareholder controls the decision to exit and (2) the conditional payment that the controller must make to the non-controller in the event of a "wrongful" decision.

Our approach is grounded in the standard framework of Calabresi and Melamed (1972). In that framework, a legal entitlement is allocated to a party and then protected with either a "property rule" or a "liability rule." Under a property rule, another party cannot infringe upon the holder's rights without her consent; under a liability rule, the other party can

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non-consensually infringe on the right but must pay damages as compensation.[23]

Within this framework, we analyze two alternative contractual arrangements: a "common choose" rule and a "preferred choose" rule. Each rule grants two cross-cutting entitlements.

Under the common choose rule: (1) common have the right to control the exit decision, while (2) preferred have various "cash flow" rights (broadly conceived to include both express and implied contractual rights). Further, common's control right is protected by a property rule, while preferred's cash flow rights are protected by a liability rule. Thus, under the common choose rule, common may make a decision that infringes upon preferred's cash flow rights, but this infringement could trigger a damages claim that affects common's net payoff.

The preferred choose rule is the opposite arrangement. Under the preferred choose rule, preferred have the control right backed by a property rule while common have cash flow rights (appropriately defined) backed by a liability rule. In this case, preferred (and only preferred) may decide whether to exit or continue. Preferred's decision may infringe upon common's cash flow rights, and this too could similarly trigger a damages claim that affects preferred's net payoff.[24]

3.2 How the Model Maps onto the *Trados* Doctrine

The common choose and preferred choose rules represent alternative solutions to the preferred-common conflict: either common or preferred control, subject to a potential dam-

[23]Calabresi and Melamed (1972) also consider the case in which the entitlement is inalienable and thus cannot be transferred between parties, even with consent. We do not explicitly address that permutation in our baseline model, but in section 5 we do take up the question of whether the possibility of Coasean bargaining and renegotiation affects our results.

[24]One could imagine an alternative framing where, for example, in the common choose regime, common's entitlement is also backed by a liability rule (instead of a property rule). In that setting, preferred could infringe on common's decision right by causing the board to favor its own interests. This alternative framing is functionally equivalent to announcing a categorical liability rule favoring whichever shareholder constituency does not control exit, relegating the decision right to non-doctrinal forces outside the model. For reasons that will become apparent below, even this alternative framing is easily analyzed within our model, and it is (weakly) inferior to the preferred choose rule on efficiency grounds. See the discussion in note 48 and accompanying text below.

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ages claim by the non-controller. As solutions to a conflict, these rules also have two complementary interpretations: (1) they can be thought of as alternative contractual arrangements that shareholders can choose from (assuming a legal regime that enforces either) or (2) they can be thought of as alternative (and mandatory) fiduciary doctrines that a court could choose from to resolve the preferred-common conflict. By adopting the latter interpretation, we can in turn use the model to analyze the *Trados* doctrine – i.e., the real world doctrine that is used to resolved conflicts between common and preferred. But this begs the question: how do these alternative rules – common choose versus preferred choose – map onto the emergent *Trados* doctrine?

The short answer is that, strictly speaking, *Trados* does not perfectly implement either the "common choose" or "preferred choose" regime that we model here. This is because our model, like any other model of a complex legal doctrine, necessarily reduces the law to its essential features. Here we briefly explain why.

In *Trados*, the court held that preferred's special rights are "contractual" and thus the board does not owe fiduciary duties to preferred when considering whether to circumvent those rights and cause the corporation to "breach" the contractual duties owed to preferred shareholders.[25] The court concluded that the board is therefore *obligated* to act in common shareholders' interests:

> generally *it will be the duty of the board*, where discretionary judgment is to be exercised, *to prefer the interests of the common stock*—as the good faith judgment of the board sees them to be—to the interests created by the special rights, preferences, etc of preferred stock.[26]

[25] The court held that: "as a general matter, the rights and preferences of preferred stock are contractual in nature. ... A board does not owe fiduciary duties to preferred stockholders when considering whether or not to take corporate action that might trigger or circumvent the preferred stockholders' contractual rights" *Trados* at 39; and that "generally it will be the duty of the board, where discretionary judgment is to be exercised, to prefer the interests of the common stock—as the good faith judgment of the board sees them to be—to the interests created by the special rights, preferences, etc ... of preferred stock. *Trados* at 41.

[26] *Trados* at 41 (emphasis added) (internal quotations omitted).

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The language of *Trados* therefore expressly requires directors to make decisions "as if" common shareholders were in control – that is, it seems to require corporations to adopt a "common choose" rule of governance.[27]

And yet, in spite of this categorical fiduciary obligation to common, the *Trados* case itself seemingly "permitted" the board to implement a preferred choose rule. That is, even after finding that a preferred-dominated board forced through a sale of the company that was clearly against the interests of common, the court nevertheless let the board's decision stand. To be sure, this result may have been motivated by the difficulty, if not impossibility, of unwinding an acquisition that has long since closed.[28] Yet the court did not simply declare itself powerless to undo a "preferred choose" outcome; instead, it expressly held that the board did *not* breach its fiduciary obligation to common shareholders because the zero dollars paid for common's shares was a "fair price" under the circumstances. This conclusion seems to be at odds with the court's earlier statement that directors are obligated "to prefer the interests of the common stock."[29]

The key reason why the doctrine does not map so cleanly onto our model is because,

[27]The later case of *ODN* further entertains – albeit briefly and in dicta – the possibility that directors might fulfill this fiduciary obligation by infringing upon preferred's cash flow rights, thereby triggering a damages claim by preferred: "Even with an iron-clad contractual obligation, there remains room for fiduciary discretion because of the doctrine of efficient breach. Under that doctrine, a party to a contract may decide that its most advantageous course is to breach and pay damages. Just like any other decision maker, a board of directors may choose to breach if the benefits (broadly conceived) exceed the costs (again broadly conceived). *ODN* at 24.

[28]Indeed, the *Trados* case might have gone the other way had common sued *before* the merger closed. This is because in the M&A context, the available remedies depend on the timing of a shareholder suit. See Revlon v. MacAndrews & Forbes, 506 A.2d 173 (Del. 1986) (obligating directors in certain contexts to make exit/continue decisions solely in shareholders' interests) and Corwin v. KKR, 125 A.3d 304 (Del. 2015) (effectively limiting relief based on *Revlon* to pre-closing suits). If common had sued before the merger closed, it is possible that the court would have enjoined the merger, thereby protecting common's control right with a property rule. In this counterfactual case, the court would have effectively applied a common choose rule.

[29]It is worth noting that elsewhere in the *Trados* opinion, the court hedged the otherwise categorical fiduciary language by providing that "in circumstances where the interests of the common stockholders diverge from those of the preferred stockholders, it is *possible* that a director could breach her duty by improperly favoring the interests of the preferred stockholders over those of the common stockholders." *Trados* at 42 (emphasis added).

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in both the doctrine and the real world, neither preferred nor common shareholders *directly* choose which corporate action to take. Instead, the board of directors controls decisions.[30] Strictly speaking, *Trados* thus implements the standard "board of directors choose" rule, in which the board is subject to (a) a fiduciary obligation to pursue common's interest that (b) is enforced through a complex set of conditional standards of review, burdens of proof, and limitations on relief.[31] The *Trados* doctrine could, in theory, perfectly map onto the common choose rule under certain conditions. If the fiduciary obligation in (a) were always perfectly and specifically enforced, then we would say that the obligation in (a) plus the enforcement regime of (b) is equivalent to common having a control right protected by a property rule – that is, the common choose rule. This is because common could always get the court to enjoin the board from making a decision against its interest. But the problem is that the obligation in (a) is not always perfectly and specifically enforced. Indeed, it is not even clear what the fiduciary obligation announced in *Trados* requires.

One could incorporate the complexities of the uncertain obligation and enforcement regime by developing a more complicated model. In such a model, whether the control right is protected by a property or liability rule might depend on an action chosen by the non-controller (such as when to initiate a lawsuit) or by a stochastic outcome reached by the court (such as the legal conclusion that the merger consideration is "fair"). In the model that follows, we eschew such complexities and instead focus on what, in our view, are the essential legal and economic issues of the preferred-common conflict, namely: (1) which shareholder controls the decision and (2) the controller's liability for wrongful decisions.

[30] See, generally, Delaware General Corporate Law Section 141(a).

[31] These are the familiar concepts of, for example, the business judgment rule, entire fairness, burden-shifting procedures such as announced in Kahn v. Lynch, 638 A.2d 1110 (Del. 1994), and restrictions on remedies such as in Corwin v. KKR, 125 A.3d 304 (Del. 2015).

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3.3 Setup of the Model

A single firm with no debt is capitalized with common and preferred stock. The firm requires a fixed investment, I, to begin operations. The firm's founder (holding common stock) is capital constrained and so all startup costs must come from an outside VC investor (holding preferred stock). All actors are risk-neutral and discount time continuously at rate r. There are three relevant stages in the model, denoted $t = -1$, $t = 0$, and $t = T$. All material decisions are made during the first two stages; the firm's terminal value (if no exit has previously occurred) is realized in the last stage.[32]

In the first stage ($t = -1$), the VC makes a take-it-or-leave-it offer to the founder. In addition to the initial investment I, the terms of this offer include: (i) a liquidation preference, $K \in (0, \infty)$, entitling the VC to the first K dollars when the firm is liquidated, (ii) a conversion right, $\gamma \in [0, 1]$, entitling the VC to convert its preferred shares to a γ-share of the total (post-conversion) common stock,[33] (iii) a governance rule, $g \in \{cc, pc\}$, specifying whether common controls ("*cc*") or preferred controls ("*pc*") the decision to exit or continue the firm, and (iv) a liability rule, $D = \{D_c, D_p\}$, specifying damages paid from the controlling shareholder to the non-controlling shareholder if the controller makes a wrongful decision.[34]

We define a decision as "wrongful" whenever the controlling shareholder selects a course

[32]Note that T and r can take on arbitrary nonnegative values, so that fixing the first stage at $t = -1$ and the second stage at $t = 0$ is without loss of generality.

[33]Conversion rights are typically described as a right to exchange each share of preferred stock for a specified number of common shares. This conventional formulation is isomorphic to a right to receive a fixed share of (post-converted) common stock, as we model it here. Specifically, if the conversion right entitles the VC to exchange each preferred share for y common shares, then the equivalent post-conversion ownership fraction for the VC is given by:

$$\gamma = \frac{n_p \cdot y}{n_p \cdot y + n_c}, \tag{1}$$

where n_c and n_p denote the number of common and preferred shares prior to conversion, respectively.

[34]Consistent with doctrine, we model this damages rule as a cash payment obligation. However, our results remain qualitatively unchanged if compensation takes the form of a stock award that effectively dilutes the paying party.

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of action that would trigger a damages payment to the other player. Importantly, damages payable by common for "wrongful continuation" decisions (D_c) can only be paid out of the firm's future profits because the founder is assumed to be credit constrained. In all other cases, however, damages are immediately payable because either (i) the firm is liquidated for cash; and/or (ii) they are payable from the preferred shareholder (D_p), who is not credit constrained. For now, we assume that the governance rule is categorical (not contingent), and that it is prohibitively costly to renegotiate the terms of this agreement.[35] (Broughman and Fried, 2010). (We discuss the consequences of relaxing this assumption in section 5.2.)

Also during this stage ($t = -1$), the founder decides whether to accept the VC's offer or reject it (and receive nothing). If she accepts it, then she must also decide whether to expend non-contractable effort, $\omega > 0$, on behalf of the firm. If the founder expends effort, then the value of the firm is as described below. If the founder does not expend effort, then the value of the firm is zero and the initial capital investment is lost. Thus, for the firm to be viable, the founder must be incentivized to exert this costly effort.[36]

In the second stage ($t = 0$), a third-party buyer emerges and makes an offer to buy the firm. The buyer first observes its willingness to pay for the firm, v, from a commonly-known cumulative distribution function $F(\cdot)$. The buyer then submits a take-it-or-leave-it offer, S_L, to purchase the firm. To concentrate on the intra-firm players, we assume that capital markets are competitive and fully efficient, and thus the potential buyer's bid is equal to its valuation ($S_L = v$).[37] Depending on their agreed governance structure, either common or

[35]Case law and the academic literature suggest that renegotiation is costly and prone to failure (e.g., Spier and Whinston (1995)). As repeat players, venture capital firms also have an incentive to cultivate a reputation of never renegotiating capital structure in order to increase the credibility of its commitments. Moreover, in the presence of costless renegotiation, this ceases to be an interesting problem. Empirical evidence suggests renegotiation payments, when they are made, are small

[36]Because most of our contribution pertains to the interim and terminal stages ($t = 0$ and $t = T$), we will generally presume that the parties' ex ante participation and incentive constraints outlined above are satisfied. It is straightforward to show that satisfying those constraints within our model generally requires interior values of K and/or γ – the very case we focus on below.

[37]Without perfect competition among bidders, the firm's governance structure could affect the expected payoff associated with exit. See, e.g., Aghion and Bolton (1987); Spier and Whinston (1995). We address

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preferred decide whether to accept or reject the buyer's offer. If the bid is accepted, the firm is immediately liquidated and the proceeds are distributed according to the deal terms.

Finally, if the bid is rejected, the firm continues to operate until its last stage ($t = T$), at which point the firm's terminal value is realized. The firm's terminal liquidation value is a random variable ψ_T drawn from a distribution with c.d.f. $G(\cdot)$, which has strictly positive support over the interval $[0, \infty)$ and is twice-differentiable. Let $S_T = E(\psi_T)$ denote the expected terminal liquidation value and $S_0 \equiv PV(S_T)|_{t=0} = e^{-rT} S_T$ the present value of the firm as a going concern as of $t = 0$. Also let $c(K|S_0)$ denote as of $t = 0$ the value of a call option on the terminal value of the firm at strike price K and conditional on the firm's present value being S_0.

3.4 Payoffs and Incentives

Table 1 lists the payoffs to common and preferred shareholders as of $t = 0$, in the alternative scenarios where (i) the buyer's bid is rejected and the firm stays in business ("continue"), and (ii) the buyer's bid is accepted and the firm liquidates ("exit").[38] First consider the shareholders' payoffs if the firm continues. If one ignores the conversion right ($\gamma = 0$), then preferred would essentially hold a priority debt-like claim of K. In this case, common's position would be equivalent to a call option on the entire firm at strike price K, and its payoff to continuing the firm would be equal to the value of this option, $c(K|S_0)$.[39] Metrick and Yasuda (2021) (chapter 13). In turn, preferred's position would be equivalent to holding the underlying asset (the firm) less a short position in the option: $S_0 - c(K|S_0)$. In addition, however, preferred's conversion right grants them an option to exchange their priority claim for a γ-share of the firm. This conversion option remains out of the money

this possibility in section 5.3.

[38] Payoffs are calculated as of the time that the exit/continue decision is made ($t = 0$).

[39] See Merton (1973); Black and Scholes (1973). For an application of this approach to the bankruptcy context, see Casey (2011).For an extensive discussion of this approach in the context of venture capital financing, see

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until the firm's value at $t = T$ exceeds K/γ (the so-called "catch-up" point for conversion). Thus, the value of preferred's conversion right is equivalent to a fractional call option on the firm, or $\gamma \cdot c(K/\gamma|S_0)$, and common's continuation payoff is similarly reduced by the corresponding short position.[40]

Table 1: The Payoffs of an Early Exit

	Action	
Shareholder	Continue firm	Liquidate firm ("exit")
Common	$c(K\|S_0) - \gamma c(\frac{K}{\gamma}\|S_0)$	$\min\{\max\{v-K,0\},(1-\gamma)v\}$
Preferred	$S_0 - c(K\|S_0) + \gamma c(\frac{K}{\gamma}\|S_0)$	$\max\{\min\{v,K\},\gamma v\}$

Next consider the shareholders' payoffs if the firm liquidates. The shareholders' marginal payoffs now depend on the size of the buyer's bid, v. Preferred receives all marginal proceeds for $v \in [0, K]$, no marginal proceeds for $v \in (K, K/\gamma]$, and a γ-share of marginal proceeds for $v \in (K/\gamma, \infty)$. Common have the complementary stakes, receiving nothing for $v \in [0, K]$, the full marginal proceeds for $v \in (K, K/\gamma]$, and a $(1-\gamma)$ share of the marginal proceeds for $v \in (K/\gamma, \infty)$.

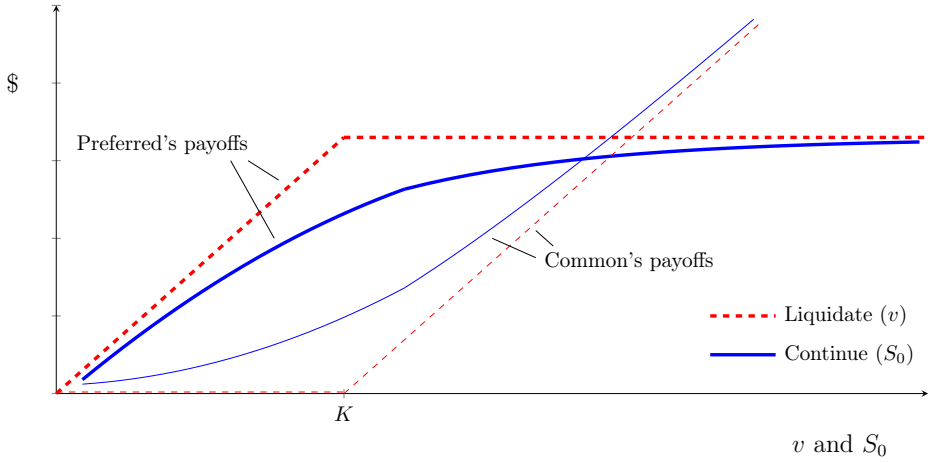
The structure of common and preferred shareholders' payoffs spawns a generic inefficient misalignment of incentives. The allocatively efficient decision would be to liquidate the firm whenever the external bid from the buyer exceeds the firm's present value ($v > S_0$), and continue the firm when the bid falls short ($v < S_0$).[41] When $v = S_0$, exit and continuation are efficiency neutral, and either decision can be justified on efficiency grounds.

Nevertheless, neither common nor preferred shareholders – if left to their own devices – would pursue the efficient course (Figure 1). If preferred held only a liquidation preference

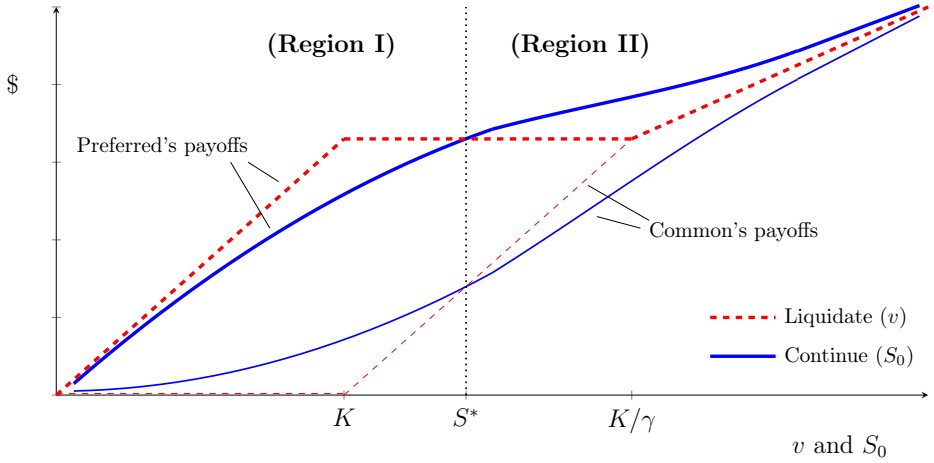
[40]Note that the sum of the payoffs in each of the respective columns for Table 1 is equal to S_0 (if the firm continues) and v (if the firm liquidates).

[41]There are many reasons why a bidder could value the firm at more or less than its value as a stand-alone firm (i.e., reasons why $v > S_0$ or $v < S_0$). For example, a bidder might value the firm at more than its stand-alone value because the combined entity produces synergies. The bidder might value the firm less because the bidder is less capable of managing the firm's operations, or because it believes key people in the firm will leave after the acquisition.

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(a) Liquidation preference only ($K > 0$, $\gamma = 0$)



(b) Liquidation preference and conversion rights ($K > 0$, $\gamma = 1/2$)

Figure 1: *The Payoffs of an Early Exit, with and without Conversion Rights.*
A third-party buyer makes a bid for the firm. Both panels graph shareholders' payoffs as a function of the buyer's valuation (v) and the firm's present value (S_0). Panel a: Without a conversion right, preferred shareholders sometimes inefficiently accept and liquidate the firm while the common shareholders sometimes inefficiently reject and continue the firm. Panel b: With a conversion right, preferred shareholders inefficiently liquidate low-valued firms (region I) and inefficiently continue high-valued firms (region II); common shareholders do the opposite. Efficient decisions are guaranteed only in the knife-edge cases when $v = S^*$ or $S_0 = S^*$.

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and no conversion right (Figure 1a), then it would always strictly prefer to liquidate when $v = S_0$, while common would always strictly prefer to continue when $v = S_0$. Preferred would thus tend to inefficiently exit too soon while common would tend to inefficiently continue and exit too late.

Adding a conversion right to the mix does not eliminate these skewed incentives; it does, however, invert the incentives for high-valued firms (Figure 1b). When firm value is relatively low (Region I), the same dynamic as above obtains, with common favoring exit too rarely and preferred favoring exit too often. With higher firm valuations (Region II), preferred and common's relative positions effectively switch, with common now favoring exit too readily and preferred likewise wanting continuation too frequently.

In general, the shareholder holding a long "call-option-like" position prefers to continue, while the shareholder that writes the option prefers exit. In Region I, preferred effectively writes the option to the common: it bears all downside losses but receives no upside gains (at least locally). It thus tends (inefficiently) to favor exit. In Region II, however, preferred's conversion right puts it long in a fractional call-option-like claim: it bears no losses on the margin, but receives a share of gains. Here, preferred tends to lean inefficiently towards continuation. Common shareholders' incentives move in the opposite direction: locally long in a call option on the firm within Region I, but short the conversion option in Region II. In the latter region, common bears a disproportionate loss from continuation because its upside gains are diluted by the conversion. In the absence of a liability rule for wrongful decisions, preferred and common would almost always be prone to inefficient decisions (and in opposing directions).

The sole exception to the above reasoning occurs at a single, knife-edge firm valuation, denoted S^*. This value marks the boundary between Regions I and II where common and preferred shareholders' relative incentives switch. At the boundary, common and preferred are both indifferent between liquidating and continuing when $v = S_0 = S^*$. Thus, S^* is

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implicitly defined as the point at which both (i) the firm's value and the buyer's bid are equal ($v = S_0$) and (ii) both shareholders are indifferent between exiting and continuing:[42]

$$S^* - K = c(K|S^*) - \gamma \cdot c\left(K/\gamma|S^*\right). \tag{2}$$

Only in this knife-edged condition (when either $v = S^*$ or $S_0 = S^*$) will shareholders agree and make efficient decisions without legal incentives. Otherwise, given any firm value $S_0 \neq S^*$, there always exists a range of bids over which shareholders will disagree on whether to exit or continue; similarly, given any bid $v \neq S^*$, there always exists a range of firm values over which shareholders will disagree on whether to exit or continue.

While the conflict between preferred and common is indeed generic, its magnitude can hinge on differing circumstances and may respond to governance incentives (including damages exposure). Figure 1b shows how the underlying stakes of the preferred-common conflict evolve over the firm's valuation. The wedge between each shareholder's liquidation and continuation payoff captures both the range over which that shareholder would make an inefficient decision and the range over which shareholders disagree with one another. In the absence of conversion rights, this wedge has a single peak; it is maximized when the firm's value is near the liquidation preference. With conversion rights, the wedge has two local peaks: (i) near liquidation preference (K) and (ii) near the catch-up point (K/γ). Thus, the magnitude of the conflict is most acute for firms whose value is at the point where one of the two option-like-payoffs is at the money. The conflict is weakest, by contrast, when these options are deep out of the money (low value firms), deep in the money (high value firms), or exactly offsetting (the knife-edge boundary S^*).

Finally, though we do not pursue it here, the model could be extended to settings with

[42]This equation is derived from the payoffs in table 1: It comes from substituting S^* for both v and S_0, and then finding the point at which common and preferred are indifferent. (Since payoffs are zero-sum, the indifference condition is the same for both.) It is straightforward to show the existence and uniqueness of S^* given the functional form assumptions behind $c(\cdot)$.

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multiple VCs or, similarly, to settings with multiple rounds of funding. In our setting, we focus on the conflict in a firm with one type of preferred shareholder and one type of common shareholder. A similar conflict would arise between holders of preferred stock with different special rights. For example, a VC that invests in a "series B" round of funding could have a liquidation preference that has priority over the "series A" preference. This would make series B more debt-like compared to series A. In some cases, this arrangement might pit common against both preferred shareholders; in other cases, it might pit series B against both common and series A. The particular coalitions produced by the conflict would depend on the firm's prospects, the terms of series B's conversion right, and nature of the decision at hand.

4 Ex Post Efficiency and Damages

We now consider how the imposition of legal liability affects the above incentive problems, and specifically whether damages for wrongful decisions can achieve ex post efficient decisions. An ex post efficient contract is a set of terms that leads to value-maximizing decisions at the exit / continue stage ($t = 0$). It is important to note that an ex post efficient allocation need not always maximize shareholders' joint payoff measured ex ante – that is, at the time of contract formation. Nevertheless, the ex post inquiry is important because (a) a failure of ex post efficiency, all else constant, generates welfare losses; and (b) much of the emerging case law of VC-financed startups centers around efficient breach of contract – and efficient breach is an ex post concept. (We return to the ex ante problem in section 5.3.)

This section thus asks three questions: (1) Under what conditions does an ex post efficient damages regime exist? (2) When an efficient regime exists, how are damages computed? And (3) does the regime's structure comport with permissible judicial rules? To characterize efficiency, we must specify – at minimum – which class of shareholder enjoys fiduciary

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"primacy" (i.e., which shareholder's interests the board must prioritize), and what damages amount (if any) the primacy shareholder owes to her non-primacy counterpart. The analysis holds fixed the contract terms determined prior to $t = 0$ (pertaining to liquidation preferences and conversion options, K and g).

4.1 No Conversion Rights

We start with the simplest case where preferred shareholders have liquidation preferences but no conversion rights ($K > 0$ and $\gamma = 0$). (We later extend the analysis to allow for conversion rights parameterized by $\gamma > 0$). For fixed K and γ, an ex post efficient governance and liability rule regime is one that maximizes the sum of the parties' expected payoffs as of $t = 0$. Proposition 1 characterizes the conditions under which, in the absence of conversion rights, there exist liability rules that induce efficient exit / continuation decisions.

Proposition 1. (Ex Post Efficiency without Conversion Rights) *Suppose the contract provides for no conversion rights, so that $\gamma = 0$. The ex post efficient liability and governance terms are characterized as follows:*

1. *When preferred control ($g = pc$), the ex-post efficient damages are equal to common's expectation damages (what it would have received by continuing minus what it actually receives in a sale):*

$$D_p^* = c(K|S_0) - \max\{v - K, 0\}. \tag{3}$$

2. *When common control ($g = cc$), there does not exist an ex-post efficient damages amount when $v \leq K$. When $v > K$, efficient damages exist, but are unique only when*

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$S_0 > K$. *The ex-post efficient damages rule is:*

$$D_c^* = \begin{cases} \varnothing & \text{if } v \leq K \\ D_c \quad s.t. \quad D_c \geq D_c^{min}(v, K, S_0) & \text{if } v > K \text{ and } S_0 \leq K \\ D_c \quad s.t. \quad K + c(K + D_c^* | S_0) = S_0 & \text{if } v > K \text{ and } S_0 > K, \end{cases} \tag{4}$$

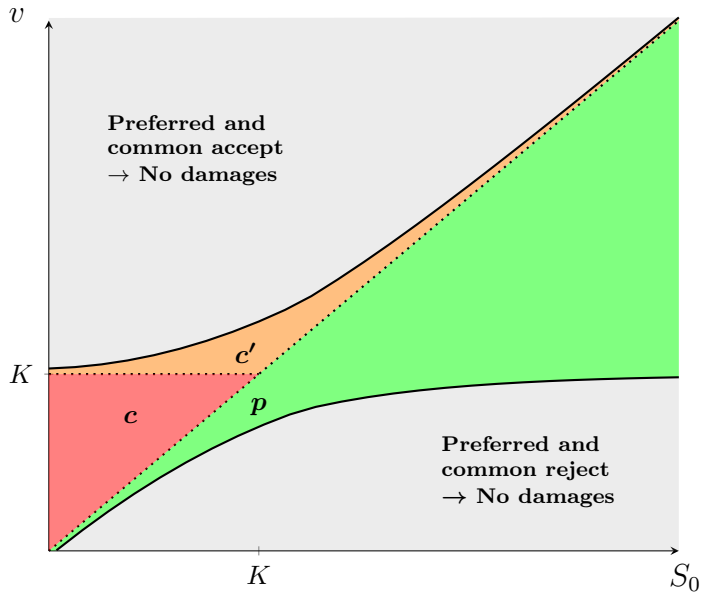
where $D_c^{min}(v, K, S_0)$ *is implicitly defined as*

$$v - K = c(K + D_c^{min} | S_0). \tag{5}$$

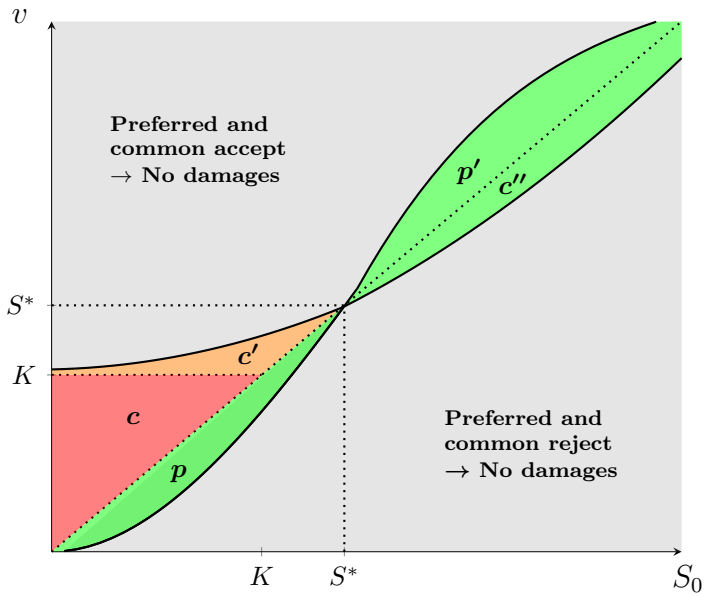
When preferred stockholders have the entitlement over the exit/continue decision (per the preferred rule, part (1)), an ex post efficient damages rule protecting common's interests always exists and is unique. The rule requires preferred to pay common expectation damages upon forcing an exit, whenever such an exit would harm common relative to the status quo (that is, whenever $\max\{0, v - K\} \leq c(K|S_0)$). Common's expectation is the value of its foregone call option on the firm ($c(K|S_0)$) less any beneficial payment that it receives from exit ($\max\{0, v - K\}$). Common's damage award is maximal when the buyer's bid is less than or equal to the liquidation preference ($v \leq K$). The award diminishes linearly thereafter and hits zero at the boundary for liability, where $v = c(K|S_0) + K$. Since exit is a liquidity event (and preferred shareholders are not credit constrained), damages can be paid out immediately from the sale's proceeds.

Things grow more complicated when common shareholders have the entitlement over the exit / continue decision (per the common choose rule, part 2). Here, an ex-post efficient liability rule protecting preferred's interests does not exist when $v \leq K$. This is because common shareholders are liquidity constrained, and so any damages awarded to preferred from wrongful continuation must come from the *terminal* liquidation value of the firm;

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(a) Liquidation preference only ($K > 0$, $\gamma = 0$)



(b) Liquidation preference and conversion rights ($K > 0$, $\gamma > 0$)

Figure 2: *Ex Post Efficient Damages, with and without Conversion Rights*
This figure indicates which shareholder – preferred ($\boldsymbol{p}$) or common ($\boldsymbol{c}$) – would inefficiently accept or reject an acquisition offer and, if so, which liability rule would induce them to make the efficient decision. The jointly optimal decision is to accept when the offer (v, indicated on the y-axis) exceeds the firm's present value (S_0, indicated on the x-axis). For combinations of v and S_0 that fall in the gray regions, damages for wrongful decisions are unnecessary because both preferred and common shareholders make efficient decisions. In color regions, preferred and common's preferences conflict. Common shareholders make inefficient decisions in regions $\{\boldsymbol{c}, \boldsymbol{c'}, \boldsymbol{c''}\}$, and preferred make inefficient decision in regions $\{\boldsymbol{p}, \boldsymbol{p'}\}$. Expectation damages always induce preferred to make efficient decisions, but only sometimes for common (green). Otherwise, efficient damages for common either bear no relationship to the expectation measure (orange) or do not exist (red). Conversion rights – which enable preferred shareholders to convert to common stock – reduce but do not eliminate the conflict (panel b).

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common effectively have the ability to lock up not only the preferred's investment but also their damages claim until $t = T$. Consequently, when the outside bid falls short of preferred's liquidation preference ($v \leq K$), common's claim is completely underwater, rendering nothing if they opt to exit; continuing can never be worse, even if doing so triggers an arbitrarily large damages payment amount upon termination. In other words, no finite damages amount can incentivize common to exit if $v \leq K$ (regardless of whether exit is efficient). When $v > K$, in contrast, common have at least some upside from exiting, and thus a sufficiently large damages amount can deter continuation. But even when such damages exist, they may not be easy to measure, and they typically diverge from expectation damages. For example, as the going concern value of the firm approaches the liquidation preference from above ($S_0 > K$ and $S_0 \to K$), the money damages needed to equate common's reservation price ($K + c(K + D_c|S_0)$) with the efficient reservation price (S_0) grows arbitrarily large. This is because continuing always yields some benefit ($c(\cdot)$ is always greater than zero) and so it becomes increasingly difficult to motivate common to exit.[43]

Proposition 1 assumes that courts grant standard money damages awards. However, similar intuitions emerge if courts were instead permitted to grant equitable "asset-based" awards.[44] Asset-based awards are sometimes granted in exceptional circumstances under the doctrine of "specific restitution," in which the breaching party is ordered to transfer an asset to the non-breaching party.[45] In this case, a court might order the shareholder making the wrongful decision to transfer a fraction of their shares, α, to the non-controlling shareholder. Although the two approaches are mathematically isomorphic,[46] an asset-based award has the

[43]Moreover, in some cases, efficient damages are not even unique. Specifically, when the bid exceeds the firm's value *and* the firm's value is less than the preference ($S_0 \leq K < v$), efficient damages need only be large enough to induce common to sell.

[44]We thank an anonymous referee for calling this possibility to our attention.

[45]See Restatement (Second) of Contracts § 372 (1981); Farnsworth et al. (2013, § 12.5).

[46]That is, whenever a money damages award induces efficient conduct, there is a unique corresponding asset-based award that does the same. Moreover, when there is no monetary award that can induce efficient conduct (as in Part 2 of Proposition 1), there similarly is no asset-based award that can do better.

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practical benefit of potentially being easier to calculate (when it exists). For example, in the $g = cc$ regime when $v > K$, the optimal fractional award is $\alpha = 1 - \frac{S_0 - min(v,K)}{c(K|S_0)}$. This may be easier to compute than the optimal money damages award because it does not involve solving for a change in a call option's strike price. (See Part 2 of Proposition 1.)

In summary, under the preferred choose regime, expectation damages always gives rise to first-best efficiency. In contrast, under the common choose regime, even an optimally designed damages rule cannot guarantee first-best; and when efficient damages do exist, they generally do not resemble the expectation measure.

4.2 With Conversion Rights

Now consider the more general case where preferred also have conversion rights ($\gamma > 0$). As illustrated in Figures 1b and 2b above, a conversion option can potentially mitigate the conflict between common and preferred because it helps to align the shareholders' interests, at least when the firm is relatively successful. At the same time, conversion has little role to play when the firm is struggling.

It is relatively straightforward to extend our analysis to allow for general conversion options (that is, for any $\gamma \in [0, 1)$).[47] First note from Figure 1b that conversion rights introduce a second "kink" in both shareholders' cash flow positions when firm value is equal to K/γ. Also recall that a key inflection reference point in Figure 1b is at $v = S^*$, where both players are indifferent about exiting. In Region I (when $v < S^*$), preferred are inclined to exit, while common wish to continue. In Region II (when $v > S^*$), a near mirror-image emerges, with common favoring exit and preferred favoring continuation. Analysis of this extension leads to the following proposition.

Proposition 2. (Ex Post Efficiency with Conversion Rights) *Suppose the contract*

[47] We omit the boundary case where $\gamma = 1$ since that case is equivalent to the trivial case where $K \to \infty$ (where the entire firm is transferred to preferred).

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provides for a conversion option with $\gamma \in [0, 1)$. *The ex post efficient liability and governance terms are characterized as follows:*

1. *When* $v < S^*$ *(Region I):*

   (a) *When preferred control* ($g = pc$)*, there exists an ex post efficient liability rule that imposes liability on preferred for wrongful exit. Efficient damages are equal to common's expectation damages:*

$$D_p^* = c(K|S_0) - \gamma \cdot c(K/\gamma|S_0) - \max\{v - K, 0\}. \tag{6}$$

   (b) *When common control* ($g = cc$)*, there does not exist an ex-post efficient damages amount when* $v \leq K$. *When* $v > K$*, efficient damages exist, but are unique only when* $S_0 > K$. *The ex-post efficient damages rule is:*

$$D_c^* = \begin{cases} \varnothing & \text{if } v \leq K \\ D_c \quad s.t. \quad D_c \geq D_c^{min}(v, K, S_0, \gamma) & \text{if } v > K \text{ and } S_0 \leq K \\ D_c \quad s.t. \quad S_0 - K = c(K + D_c^*|S_0) - \gamma \cdot c(K/\gamma + D_c^*|S_0) & \text{if } v > K \text{ and } S_0 > K, \end{cases} \tag{7}$$

   where $D_c^{min}(v, K, S_0, \gamma)$ *is implicitly defined as*

$$v - K = c(K + D_c^{min}|S_0) - \gamma \cdot c(K/\gamma + D_c^{min}|S_0). \tag{8}$$

2. *When* $v > S^*$ *(Region II):*

   (a) *When preferred control* ($g = pc$)*, there exists an ex post efficient liability rule that imposes liability on preferred for wrongful continuation. Efficient damages are equal to common's expectation damages (what common would have received by*

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exiting minus what it actually receives by continuing):

$$D_p^* = \min\{v - K, (1-\gamma)v\} - c(K|S_0) + \gamma \cdot c(K/\gamma|S_0). \tag{9}$$

(b) When common control ($g = cc$), there exists an ex-post efficient liability rule that imposes liability on common for wrongful exit. Efficient damages are equal to preferred's expectation damages (what preferred would have received by continuing minus what it actually receives by exiting):

$$D_c^* = S_0 - c(K|S_0) + \gamma \cdot c(K/\gamma|S_0) - \max\{\gamma v, K\}.$$

The intuition behind this proposition builds on the prior analysis. When the firm's present value and the third-party bid are relatively low (part (1)), the strategic situation is virtually identical to that of Proposition 1 (compare the lower left corners of Figure 2a and 2b). In that region, ex post efficiency is guaranteed only when the governance rule allocates control rights to preferred shareholders, subject to expectation-like damages paid to common for wrongful exit. When common have control rights, in contrast, efficient damages for preferred do not exist when $v \leq K$; and while efficient liability regimes exist when $v \in (K, S^*)$, they do not correspond to expectation damages (and can easily exceed them by a wide margin).[48]

When the firm's present value and the third-party bid are relatively high (part (2)), ex post efficient damages exist *regardless* of whether common or preferred control the exit decision (compare the top right corners of Figure 2a and 2b). Consider first the case where preferred shareholders have control. In Region II, recall that it is now the preferred share-

[48]This observation also reveals why the preferred choose regime is (weakly) superior to a "categorical" liability-rule regime where both common and preferred's interests are protected with optimal damages, and the exit/continue decision right is determined by factors outside the model (see discussion in note 24 above). If, under such a regime, these exogenous factors ever vest decision authority with the common, when $v \leq K$ common will never choose exit (whether efficient to do so or not).

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holders who favor continuing (hoping to exploit the upside of their conversion option), while common leans towards exit (since their upside beyond that point is now diluted by conversions). Should preferred force a continuation, they need not pay for those damages out of the terminal value of the firm because, unlike common, they are not credit constrained. Consequently, the ex post efficient damages for wrongful continuation corresponds to expectation damages for common. Conversely, if common control the exit decision and force liquidation, the exit event will provide immediate liquidity from which to pay expectation damages for wrongful exit. Consequently, expectation damages give rise to ex post efficiency regardless of who has control rights in this region.[49]

From a doctrinal perspective, the key results of our analysis concern (1) whether an efficient damages measure exists, and (2) whether that measure corresponds to expectation damages. The following Corollaries, which emerge immediately from Propositions 1 and 2, summarize our conclusions on these two issues:

Corollary 1. *The unique governance rule that guarantees ex post efficiency for all values of K and γ allocates preferred shareholders control over the exit decision ($g = pc$), coupled with expectation damages for common shareholders.*

Corollary 2. *Suppose damages for wrongful decisions are constrained to be measured by the harmed party's expectation interest. When the preferred shareholders enjoy an entitlement to decision rights, expectation damages always induce efficient decisions in Region I and Region II. When the common shareholders enjoy the entitlement to decision rights, expectation damages do not induce efficient decisions in Region I, but do in Region II.*

Both Corollaries have important consequences for the emerging doctrine. For any con-

[49]One caveat to this point warrants attention: Within Region II, it is the *preferred* who have outsized incentives to continue, while common favor exit. If preferred enjoy the decision entitlement in this region and opt to continue, then even a damages payment to common may be inadequate to incentivize founders and key employees (typically holders of common shares) to continue working (or at least working diligently). This consideration may tip the efficiency scales to favor the common choose rule over the preferred choose rule within Region II. We thank an anonymous referee for pointing out this practical consideration.

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tract with liquidation and conversion rights, the only governance rule that always induces ex post efficiency (or "efficient breach") accords the decision-right entitlement to preferred shareholders – not common. Put another way, ex post efficiency would relegate common shareholders' interest to that of a contractual damages claim. In contrast, when common shareholders possess the decision-right entitlement, efficient damages may not even exist; and even when they do, the nature of the remedy can diverge considerably from the standard expectation interest. Thus, if contractual damages are limited to the expectation interest (as common law doctrine typically requires) a rule granting primacy to common shareholders will generally miss the mark in Region I, and low-valued firms will be inefficiently continued.

These insights hold repercussions for efficiency-minded courts endeavoring to interpret fiduciary objectives and contractual obligations between common and preferred shareholders. When the exit price is near the liquidation preference, an efficiency-minded court would strictly prefer the preferred choose regime, according primacy to the preferred shareholders' interests, but subject to contract damages should preferred shareholders force through an exit that common shareholders oppose. When the exit price is relatively high, in contrast, courts can induce ex post efficiency with either the common choose or preferred choose regime, so long as both are backstopped by contractual rights for the non-controlling shareholder.

5 Implications of the Model

In this section, we explore several of the economic and legal implications of our model. To focus our discussion, recall that our framework delivered four principal findings:

1. The conflict between different classes of shareholders is generic within the capital structure of a typical VC-backed company, in which founders hold common shares and VCs hold preferred shares with special rights.

2. The conflict is most pronounced around the "kinks" in the cash flow structures for

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the share classes, specifically, around the liquidation preference, K, and the catch-up point, K/γ.

3. The interests of common and preferred shareholders are reversed as the firm's intrinsic and outside values transition from one kink point to the other. When the firm has relatively low intrinsic and outside valuations, common favors continuing while preferred favors shutting down. When it has relatively high intrinsic and outside valuations, the opposite occurs: common favors shutting down while preferred favors continuing.

4. In most (but not all) cases, the preferred-common conflict can be efficiently resolved by a liability rule that subjects the shareholder controlling the decision to damages payable to the non-controller as compensation for a wrongful decision. When preferred control the decision, expectation damages are always efficient. When common control, value maximization is sometimes unattainable with any damages, and even when it is, courts must make use of non-expectation (even supracompensatory) damages.

The next three subsections organize the discussion by separately considering the efficiency implications for ex ante and ex post decisions – that is, before and after the founder and VC form a contract. In section 5.1, we ask whether, in light of our results, the current *Trados* doctrine – insofar as it at least suggests (if not enforces) a common choose rule – promotes ex post efficient decisions to exit or continue the firm. We conclude that it does not, but that a preferred choose rule – which grants fiduciary primacy to preferred shareholders – does.

In section 5.2, we ask whether a common choose rule could nevertheless promote ex post efficiency by encouraging optimal settlements (that is, renegotiation) between preferred and common. We conclude that it could, though it might entail some transaction costs. In according primacy to the credit-constrained shareholder (common), *Trados* effectively awards an entitlement in a way that puts the onus of paying a Coasean "bribe" on the party that is least liquidity-constrained (preferred) – thereby eliminating a substantial barrier to

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renegotiation. In our view, while this may not be sufficient grounds to mandate the common choose rule, it is nevertheless the strongest argument in favor of a common choose regime over a preferred choose regime.

In section 5.3, we take a step back and ask whether a common choose rule could promote ex ante efficiency in venture capital dealmaking. Here our conclusion is mixed: such benefits are theoretically ambiguous, empirically difficult to measure, and for these reasons more speculative than the clear ex post costs of a common choose doctrine. In practice, however, there is suggestive evidence that VCs have managed to avoid these costs by (at least partially) contracting around current doctrine. To the extent that the contours of *Trados* remain in place, courts would do well to recognize and give effect to those contractual decisions.

5.1 Promoting efficient breach of venture capital contracts

From an ex post efficiency perspective, a critical question for our model is whether the *Trados* doctrine *efficiently* encourages directors to breach the special contractual obligations owed to preferred shareholders. Our analysis of the model demonstrates that this objective is unattainable under the cross-cutting property/liability entitlements created by a common choose rule. Nevertheless, our analysis also demonstrates the merits of "reversing the wiring" to produce a preferred choose regime: instead of owing fiduciary (property-rule) obligations to common and contractual (liability-rule) obligations to preferred, directors would owe fiduciary obligations to preferred and contractual obligations to common. For the preferred choose regime, our model demonstrates that expectation damages can always promote efficient breach.

In addition to its superior efficiency characteristics, the preferred choose rule also manifests an intuitive structure: directors should pursue preferred's interests, and common shareholders are entitled to standard expectation damages. A preferred choose rule is thus intuitive, routine, and simple to implement. In contrast, efficient damages do not exist under a

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common choose regime for many combinations of the firm's intrinsic and outside valuations – combinations that are commonplace in real-world settings. And even when an efficient damages rule does exist, calibrating it correctly under a common choose regime may require supra-compensatory (even punitive) damages, a factor that further undercuts their plausibility: Many states, including Delaware, prohibit courts from awarding punitive contractual damages absent statutory authorization.[50] To the best of our knowledge, no state has authorized punitive damages to resolve the kind of preferred-common conflict we analyze here.

Our analysis therefore suggests that on both efficiency and intuitive dimensions, a common choose rule is inferior to a preferred choose rule as a default regime to govern the exit/continue decision. Thus, the common choose regime described (if not actually enforced) in *Trados* may be inferior to the preferred choose regime.

5.2 Promoting efficient renegotiation

Although our model does not allow for renegotiation, here we informally consider the impact of a common choose regime in a world where preferred and common can renegotiate their deal (and thus settle out of court). Our argument for a preferred choose rule has thus far been rooted in common shareholders' credit constraint: in the absence of renegotiation, preferred should have decision rights because, unlike common, preferred can always directly pay damages, and further because their optimal damage measure (the expectation) is easiest to implement. However, even if a common choose rule does not lead to optimal results in *litigation,* it could still promote ex post efficiency by encouraging optimal renegotiation outside of court (Ayres and Talley, 1994).

To see this point, consider a simple Coasean setting in which (a) there is an allocation of a property-like entitlement of the decision right (which gives either preferred or common

[50]Beals v. Washington International, Inc., 386 A.2d 1156, 1159 (Del. Ch. 1978).

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the absolute right to decide), and (b) preferred and common are permitted to bargain in the shadow of that entitlement. If common have the initial entitlement, then preferred would have to "bribe" common either to exit (for firm values around the liquidation preference) or to continue (for values around the conversion point). Preferred can always pay this Coasean bribe because they are presumed not to be liquidity constrained. If, however, preferred have the entitlement, then common would have to bribe preferred either to continue (when around the liquidation preference) or to exit (when around the conversion point). In the latter case, common can pay preferred out of the proceeds of the sale upon exit; but in the former case (when common want to continue), common are unable to pay directly. Instead, common can only offer preferred a greater share of the terminal value of the firm. One might reasonably suspect, however, that Coasean bargaining would be most likely to break down in precisely such cases when one party (common) has no way of directly bribing the other (preferred) and must instead rely on a dubious equivalency calculation (in this case, the cash-equivalent increase in preferred's share of the firm's terminal value).

The upshot of this observation is that Coasean bargaining may be most likely to break down when preferred have the entitlement – that is, in a preferred choose regime. Thus, if courts believe that (1) the parties' ability to renegotiate does not depend on the doctrine and (2) courts' damages calculations are generally accurate, then our results follow and a preferred choose regime is best. If, on the other hand, courts are skeptical about the accuracy of damage calculations and they instead prefer a regime that maximally promotes (optimal) renegotiation, then a common choose regime may be best.

The more general Coasean claim here is that entitlements should go to the party that is *least* capable of offering financial inducements to others in return for efficient conduct. In our setting, common shareholders are least capable because they lack easy access to credit. By eliminating this barrier to renegotiation, a common choose regime could potentially outperform a preferred choose regime. In our view, this is the strongest argument in favor

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of a common choose regime over a preferred choose regime.

5.3 Promoting efficient dealmaking in venture capital

We have argued above that a preferred choose rule would promote efficient breach of contract. An optimal policy, however, must do more than that – it must also promote efficient *formation* of contract. In this section, we ask whether the ex post losses introduced by a common choose rule may be compensated by ex ante efficiency gains, specifically by promoting efficient formation of venture capital deals.

In our view, the potential ex ante gains are more ambiguous and more speculative than the clear ex post gains of an preferred choose regime. This is because the existence and magnitude of potential ex ante gains will depend on additional assumptions on bargaining dynamics that are difficult to generalize and on specific parameter values (such as private benefits to control or the distribution of third-party bids), which are difficult to measure precisely. Nevertheless, here we informally discuss two of the more plausible sources of ex ante gains that might tip the balance back in favor of the conventional common choose rule. The first is based on optimal "in-kind" compensation, and the second is based on rent extraction.

In-kind compensation. If founders privately value control over their company – for its own sake and not for the sake of, say, self-dealing – then it *might* be cheaper to compensate them with control rather than salary or non-controlling equity. Indeed, it is not difficult to imagine situations in which founders are more personally invested in their project compared to the VC and thus more willing to work harder and forgo financial gain in order to retain control over their creation. In this case, a common choose regime, whether mandated by a court or privately adopted by the parties, could produce ex ante benefits not captured by our model because it allocates control to the party that values it most.

This explanation, however, requires that founders demand a very particular kind of con-

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trol, namely, control that is operationalized and discharged as a fiduciary obligation on the part of directors (rather than control that is operationalized as a contractual obligation of the corporation). Since fiduciary obligations can be enforced with injunctive orders, this is effectively a demand for a control right backed by a property rule (rather than a control right backed by a liability rule, as a contract would create). A founder might demand a property-rule-backed control right if her private benefits of control are (1) incommensurable and thus truly worth more than any amount of money, (2) worth more than what a VC is willing to pay under any circumstance and thus "as good as" infinite, or (3) state-contingent and thus, from an incomplete contracting perspective, too onerous to specify up front (perhaps it depends on the company's uncertain financial prospects or on the employees' unverifiable attitudes or plans for the future). Thus, for the in-kind compensation theory to hold, it is not enough that founders' private benefits of control exceed the VC's costs of giving up control. It must also be that the nature of the founder-VC relationship makes it cheaper to design and enforce that control through a fiduciary obligation, rather than a contractual one.

Moreover, the in-kind compensation explanation also requires founders' private benefits to be large enough to overcome the ex post losses from inefficient exit/continue decisions induced by a common choose rule – that is, large enough for VCs to embrace the common chose rule and compensate founders with control over the board. Yet, if anything, the trend seems to be headed in the opposite direction. The National Venture Capital Association (NVCA) has repeatedly reformulated its model governance documents in ways that attempt to sidestep – if not effectively abrogate – *Trados* and its progeny.[51] Thus, while we recognize the theoretical possibility that control – and specifically control backed by a property right

[51]The NVCA model corporate charter gives preferred stockholders an explicit redemption/put right, and the refusal to redeem begins to accrue interest at a high penalty rate, meant to incentivize a decision to exit. The NVCA's model agreements are available at `https://nvca.org/model-legal-documents/`. See also Cable (2019) (discussing the NVCA's "sale right"). As we have shown, however, even penalty-like provisions can be inadequate to induce efficient decisions by common stockholders when their claim is underwater.

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– may be a more efficient way to compensate founders, the ex ante gains are theoretically speculative and in practice not sufficiently large to convince the NVCA. For these reasons, optimal compensation is not a compelling efficiency rationale for the common choose rule.

Rent extraction. A second source of potential ex ante gains might come through a strategic attempt to extract a larger acquisition premium upon exit. In our model, the M&A market is presumed to be perfectly competitive, so any gains from an acquisition $(v - S_0)$ are already captured by the target. If, however, bidders had some market/bargaining power, then the target shareholders might find it jointly optimal to appropriate some of the buyer's rents by committing to a reservation price that is strictly above the going-concern value of the firm (see, e.g., Choi and Talley (2018)). In this case, giving control to common shareholders might just do the trick: for such a structure credibly commits the common shareholders to a "high" reservation price (never less than the liquidation preference, K), and no bid below that amount would ever be accepted by common (regardless of damages). Thus, in a model where bidders have bargaining power, a common choose rule could enable the VC and founders to seize some of it back, reducing the probability of an acquisition but at the same time increasing the expected premium (conditional on being acquired). Depending on a variety of deep parameters, including the distribution of acquirers' valuations, the net effect on a target's value could be positive.

While perhaps plausible on strategic grounds, this is not a compelling policy justification because the ex ante benefit to target shareholders is a variant on monopoly pricing. It diverts rents from potential buyers and likely increases deadweight loss. From the standpoint of theory, this mechanism is equivalent to an over-liquidated damages provision designed to extract monopoly rents from a potential competitor – a mechanism that has long been recognized as a source of inefficiency (Aghion and Bolton, 1987; Spier and Whinston, 1995). From the standpoint of law, Delaware courts have been wary about mandating M&A doctrines that generate such unintended and inefficient consequences; a target-shareholder-based jus-

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tification does not comport with Delaware's general approach.[52] Finally, as with the in-kind compensation argument above, if the rent extraction rationale were actually privately optimal, founders and VCs should be independently incentivized to embrace a common choose rule on their own, with no need for judicial encouragement. As explained above, however, responses of the NVCA seem to suggest the opposite.[53]

All told, the ex post inefficiencies induced by a common choose rule (and identified by our model) constitute a prima facie argument against it. To overcome this, one must find a sufficiently large ex ante benefit. In our view, such potential benefits are speculative, at least compared to the relatively straightforward ex post losses. Of course, it does not follow that courts ought *mandate* a preferred choose rule. Rather, it only suggests that companies backed by venture capital may be just as (if not more) efficiently run if they were allowed to adopt such a rule on their own.

6 Conclusion

This paper developed a model of venture capital dealmaking to analyze conflicts between founders (who typically hold common stock) and VCs (who typically hold preferred stock). We showed that (1) the existence and magnitude of the preferred-common conflict is jointly determined by a firm's intrinsic value and its value to potential third-party acquirers, (2)

[52]See, for example, the recent holdings in the context of firm valuation in merger appraisal actions: DFC Global Corp. v. Muirfield Value Partners, L.P., 172 A.3 346 (Del. 2017); Dell, Inc. v. Magnetar Global Event Driven Master Fund Ltd., 177 A.3d 1 (Del. 2017); Verition Partners Master Fund Ltd. v. Aruba Networks, Inc., 210 A.3d 128 (Del. 2019).

[53]The familiar Coase theorem also calls into question the credibility of common shareholders' ability to hold out for a high price under a common choose regime, since acquirers, common, and preferred would presumably have the incentive to renegotiate an inefficient allocation on the spot. This critique might also apply more broadly to our analysis in the previous section, or indeed to any model in which litigation occurs in equilibrium. There is some evidence that, after *Trados*, preferred shareholders have begun to pay common a "true up" payment upon exit even if common's position in the firm's capital structure is still underwater. See, e.g., Cable (2019). That said, the explosion of litigation in this area suggests that transaction and information costs continue to play an important role, inhibiting the frictionless operation of the Coase theorem. See Spier and Whinston (1995).

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combinations of intrinsic and outside valuations cause both common and preferred shareholders to make inefficient decisions, and (3) efficient decisions can be induced by a rule that obligates the board to prioritize preferred shareholders' interest and to treat common shareholders as contractual claimants. We used this last result to critique Delaware's emergent *Trados* doctrine, which effectively mandates the opposite; under *Trados*, directors owe mandatory fiduciary duties to common and must treat preferred's special rights like any other contractual claim.

More generally, our model shows how capital structure and corporate governance *jointly* determine firm value. Our approach stands in contrast to much of the theoretical and empirical literature, which tends to consider financial and governance-based sources of value in isolation. Indeed, such approaches are an inevitable result of the scholarly divergence between the literatures of corporate law and corporate finance. In our view, a thorough analysis of VC-backed companies requires an approach that unites these two otherwise all-too-disparate fields.

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A Proposition 1: Optimal Damages without Conversion Rights ($\gamma = 0$)

A.1 Part 1 ($g = pc$)

When preferred is subject to damages for wrongful exit in the amount of D_p, preferred accepts the bid when its exit payoff (net of damages) exceeds its continuation payoff:

$$-D_p + \min\{v, K\} \geq S_0 - c\left(K|S_0\right). \tag{10}$$

If damages are

$$D_p^* = c\left(K|S_0\right) - \max\{v - K, 0\}, \tag{11}$$

then preferred accepts when

$$-D_p^* + \min\{v, K\} \geq S_0 - c\left(K|S_0\right) \tag{12}$$

$$-\left[c\left(K|S_0\right) - \max\{v - K, 0\}\right] + \min\{v, K\} \geq S_0 - c\left(K|S_0\right) \tag{13}$$

$$\max\{v - K, 0\} + \min\{v, K\} \geq S_0 \tag{14}$$

$$v \geq S_0 \tag{15}$$

which is the efficient rule.[54] Note that D_p^* is the expectation measure; it is the difference between what common would have received by continuing and what it actually receives in the sale.

[54] To explain each step: (1) Substitute D_p^*. (2) Cancel terms. (3) $v - K < 0 \implies v < K$. Also, $v - K > 0 \implies v > K$. Thus, the left side is always v.

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A.2 Part 2 ($g = cc$)

When common is subject to damages for wrongful continuation in the amount of D_c, common rejects the bid when its continuation payoff (net of damages) exceeds the bid. Since common can only pay damages out of the firm's future profits, the sole effect of damages under the *cc* rule is to increase the effective strike price (that is, the liquidation preference of the preferred) if the firm continues. Common will therefore exit when

$$v - K \geq c(K + D_c|S_0). \tag{16}$$

Case 1. When $v \leq K$, equation 16 cannot be satisfied for any value of D_c because $c(\cdot)$ is strictly positive. Since exit leaves common with nothing, common always continues regardless of the level of damages. An efficient damages rule does not exist.

Case 2. When $v > K$, there are two cases to consider: (a) $S_0 \leq K$ and (b) $S_0 > K$.

(a) Suppose $S_0 \leq K$. Then $v > K \geq S_0$ and the efficient decision is *always* to exit. To induce common to exit, damages must be sufficiently high to satisfy equation 16. Let D_c^{min} denote the minimum level of damages necessary to satisfy equation 16:

$$v - K = c(K + D_c^{min}|S_0). \tag{17}$$

(Note that D_c^{min} will depend on v, K, and S_0.) Then the efficient damages level is

$$D_c^* = \{D_c \mid D_c \geq D_c^{min}(v, K, S_0)\}. \tag{18}$$

Note the efficient damages level is not unique: damages need only exceed the threshold to induce common to sell. Intuitively, since the efficient decision is always to exit, damages can never be "too high" (they can, however, be "too low").

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(b) Suppose instead $S_0 > K$. Then an efficient damages rule exists and is unique. To see this, note the following properties of $c(K + D_c|S_0)$:

- $c(K + D_c|S_0)$ is continuous in D_c for all K,
- $c(K + D_c|S_0)$ is strictly decreasing in D_c,
- $c(K + D_c|S_0)|_{D_c=K=0} = S_0$,
- $c(K + D_c|S_0)|_{K>0;D_c=0} > S_0 - K$, and
- $\lim_{D_c \to \infty} c(K + D_c|S_0) = 0$.

It then follows that for any $K \in [0, S_0)$ there exists a unique D_c^* satisfying

$$K + c(K + D_c^*|S_0) = S_0, \tag{19}$$

at which level common accepts when

$$v \geq K + c(K + D_c^*|S_0) \tag{20}$$

$$= S_0 \tag{21}$$

which is the efficient rule. Intuitively, unlike case (a), damages are unique in case (b) because it is not always efficient to exit. It may be that $v > S_0$ or $v < S_0$. Damages thus can be both "too high" and "too low."

Collecting the results from all cases, the efficient damages rule is:

$$D_c^* = \begin{cases} \varnothing & \text{if } v \leq K \\ \{D_c \mid D_c \geq D_c^{min}(v, K, S_0)\} & \text{if } v > K \text{ and } S_0 \leq K \\ D_c \quad s.t. \quad K + c(K + D_c^*|S_0) = S_0 & \text{if } v > K \text{ and } S_0 > K. \end{cases} \tag{22}$$

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Unlike $D_p^*|_{\gamma=0}$, $D_c^*|_{\gamma=0}$ is generally not equal to the expectation measure. Recall the expectation measure is the difference between what preferred could have received in a sale and what it actually receives by continuing:

$$\min\{v, K\} - [S_0 - c(K|S_0)] \neq D_c^*. \tag{23}$$

In particular, D_c^* increases arbitrarily as $S_0 \to K$ from above. Thus, D_c^* can be (arbitrarily) greater than the expectation measure, and resemble (arbitrarily) punitive damages.

A.3 Asset-based awards

[PUT ASSET-BASED AWARD ISOMORPHIC CLAIM PROOF HERE]

B Proposition 2: Optimal Damages with Conversion Rights $(\gamma > 0)$

B.1 Part 1a ($g = pc$, $v < S^*$)

When preferred is subject to damages for wrongful exit in the amount of D_p, preferred accepts the bid when its exit payoff (net of damages) exceeds its continuation payoff:

$$-D_p + \max\{\min\{v, K\}, \gamma v\} \geq S_0 - c\,(K|S_0) + \gamma \cdot c(K/\gamma|S_0). \tag{24}$$

If damages are

$$D_p^* = c\,(K|S_0) - \gamma \cdot c(K/\gamma|S_0) - \max\{v - K, 0\}, \tag{25}$$

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then preferred accepts the bid when

$$\begin{aligned}
-D_p^* + \max\{\min\{v, K\}, \gamma v\} &\geq S_0 - c\left(K|S_0\right) + \gamma \cdot c(K/\gamma|S_0) \\
-D_p^* + \min\{v, K\} &\geq S_0 - c\left(K|S_0\right) + \gamma \cdot c(K/\gamma|S_0) \\
-\left[c\left(K|S_0\right) - \gamma \cdot c(K/\gamma|S_0) - \max\{v - K, 0\}\right] + \min\{v, K\} &\geq S_0 - c\left(K|S_0\right) + \gamma \cdot c(K/\gamma|S_0) \\
\max\{v - K, 0\} + \min\{v, K\} &\geq S_0 \\
v &\geq S_0
\end{aligned}$$

which is the efficient rule.[55] Note that D_p^* is the expectation measure; it is the difference between what common's payoffs would have received from continuing and its actual payoffs from the sale.

B.2 Part 1b ($g = cc$, $v < S^*$)

When common is subject to damages for wrongful continuation in the amount of D_c, common rejects the bid when its continuation payoff (net of damages) exceeds the bid. Since common are liquidity constrained, the sole effect of damages is to increase the effective strike price. Common will therefore sell only when

$$v - K \geq c(K + D_c|S_0) - \gamma \cdot c(K/\gamma + D_c|S_0). \tag{26}$$

The efficient damages rule here closely resembles the no conversion right case (see section A.2).

[55] To explain each step: (1) $v < S^*$ implies $v < K/\gamma$. Thus, in the event of an exit, preferred does not convert to common stock and so its exit payoff is

$$\max\{\min\{v, K\}, \gamma v\} = \min\{v, K\}.$$

(2) Substitute D_p^*. (3) Cancel terms. (4) $v - K > 0 \implies v < K$. Also, $v - K \implies v > K < 0$. Thus, the left side is always v.

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Case 1. When $v \leq K$, equation 26 cannot be satisfied for any value of D_c because the right term is strictly positive.[56] Since exit leaves common with nothing, common always continues regardless of the level of damages. An efficient damages rule does not exist.

Case 2. When $v > K$, there are two cases to consider: (a) $S_0 \leq K$ and (b) $S_0 > K$.

(a) Suppose $S_0 \leq K$. Then $v > K \geq S_0$ and the efficient decision is *always* to exit. To induce common to exit, damages must be sufficiently high to satisfy equation 26. Let $D_c^{min}(\gamma)$ denote the minimum level of damages necessary to satisfy equation 26:

$$v - K = c(K + D_c^{min}|S_0) - \gamma \cdot c(K/\gamma + D_c^{min}|S_0). \tag{27}$$

(Note that D_c^{min} will depend on v, K, S_0, and γ.) Then the efficient damages level is

$$D_c^* = \{D_c \mid D_c \geq D_c^{min}(v, K, S_0, \gamma)\}. \tag{28}$$

Note the efficient damages level is not unique: damages need only exceed the threshold to induce common to sell.

(b) Suppose instead $S_0 > K$. Then, by the properties of $c(\cdot)$ listed in section A.2, for any $K \in [0, S_0)$, there exists a unique D_c^* satisfying

$$S_0 - K = c(K + D_c^*|S_0) - \gamma \cdot c(K/\gamma + D_c^*|S_0), \tag{29}$$

[56] $c(K|S_0)) > \gamma \cdot c(K/\gamma|S_0))$ because the option on left side has a higher strike price ($K/\gamma > K$) and because the option on the right side is discounted by $\gamma \in (0, 1)$.

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at which level common accepts when[57]

$$\min\{\max\{v-K,0\},(1-\gamma)v\} \geq c(K+D_c^*|S_0) - \gamma \cdot c(K/\gamma + D_c^*|S_0) \tag{30}$$

$$\max\{v-K,0\} \geq c(K+D_c^*|S_0) - \gamma \cdot c(K/\gamma + D_c^*|S_0) \tag{31}$$

$$\max\{v-K,0\} \geq S_0 - K \tag{32}$$

$$v \geq S_0 \tag{33}$$

which is the efficient rule.

Collecting the results from all cases, the efficient damages rule is:

$$D_c^*|_{K>0,\gamma>0} = \begin{cases} \varnothing & \text{if } v \leq K \\ \{D_c \mid D_c \geq D_c^{min}(v,K,S_0,\gamma)\} & \text{if } v > K \text{ and } S_0 \leq K \\ D_c \quad s.t. \quad S_0 - K = c(K+D_c^*|S_0) - \gamma \cdot c(K/\gamma + D_c^*|S_0) & \text{if } v > K \text{ and } S_0 > K. \end{cases} \tag{34}$$

Unlike $D_p^*|_{\gamma>0}$, $D_c^*|_{\gamma>0}$ is generally not equal to the expectation measure. The expectation measure is the difference between what preferred could have received in a sale and what it actually receives by continuing:

$$\min\{v,K\} - [S_0 - c(K|S_0) + \gamma \cdot c(K/\gamma|S_0)] \neq D_c^*. \tag{35}$$

In particular, D_c^* increases arbitrarily as $K \to S_0$ from below.

[57] To explain each step: (1) $v < S^*$ implies $v < K/\gamma$. Thus, in the event of exit, preferred does not convert to common stock; preferred either fails to recover its preference (leaving common with 0) or recoups its preference (leaving common with $v-K$), so common's exit payoff is

$$\min\{\max\{v-K,0\},(1-\gamma)v\} = \max\{v-K,0\}.$$

(2) Substitute equation 29. (3) $v > K$ by assumption.

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B.3 Part 2a ($g = pc$, $v > S^*$)

When preferred is subject to expectation damages for wrongful continuation in the amount of

$$D_p^* = \min\{v - K, (1-\gamma)v\} - c(K|S_0) + \gamma \cdot c(K/\gamma|S_0), \tag{36}$$

preferred accepts the bid when

$$\begin{aligned}
\max\{\min\{v, K\}, \gamma v\} &\geq S_0 - c\left(K|S_0\right) + \gamma \cdot c(K/\gamma|S_0) - D_p^* \\
\max\{K, \gamma v\} &\geq S_0 - c\left(K|S_0\right) + \gamma \cdot c(K/\gamma|S_0) - D_p^* \\
D_p^* + \max\{K, \gamma v\} &\geq S_0 - c\left(K|S_0\right) + \gamma \cdot c(K/\gamma|S_0) \\
\min\{v - K, (1-\gamma)v\} - c(K|S_0) + \gamma \cdot c(K/\gamma|S_0) + \max\{K, \gamma v\} &\geq S_0 - c\left(K|S_0\right) + \gamma \cdot c(K/\gamma|S_0) \\
\min\{v - K, (1-\gamma)v\} + \max\{K, \gamma v\} &\geq S_0 \\
v &\geq S_0
\end{aligned}$$

which is the efficient rule.[58] Note that D_p^* is the expectation measure; it is the difference between what common's payoffs would have been from exiting and its actual payoff from continuing.

B.4 Part 2b ($g = cc$, $v > S^*$)

When common is subject to damages for wrongful exit in the amount of

$$D_c^* = S_0 - c(K|S_0) + \gamma \cdot c(K/\gamma|S_0) - \max\{\gamma v, K\}, \tag{37}$$

[58] To explain each step: (1) $v > S^*$ implies $v > K$. Thus, in the event of an exit, preferred either converts to common stock or receives its full liquidation preference, so its exit payoff is

$$\max\{\min\{v, K\}, \gamma v\} = \max\{K, \gamma v\}.$$

(2) Rearrange terms. (3) Substitute D_p^*. (4) Cancel terms. (5) $v - K < (1-\gamma)v \implies K > \gamma v$. Also, $v - K > (1-\gamma)v \implies K < \gamma v$. Thus, the left side is always v.

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common accepts the bid when

$$\begin{aligned}
-D_c^* + \min\{\max\{v-K,0\},(1-\gamma)v\} &\geq c(K|S_0) - \gamma\cdot c(K/\gamma|S_0)\\
-D_c^* + \min\{v-K,(1-\gamma)v\} &\geq c(K|S_0) - \gamma\cdot c(K/\gamma|S_0)\\
-\left[S_0 - c(K/\gamma|S_0) + \gamma\cdot c(K/\gamma|S_0) - \max\{\gamma v, K\}\right] + \min\{v-K,(1-\gamma)v\} &\geq c(K|S_0) - \gamma\cdot c(K/\gamma|S_0)\\
\max\{\gamma v, K\} + \min\{v-K,(1-\gamma)v\} &\geq S_0\\
v &\geq S_0
\end{aligned}$$

which is the efficient rule.[59] Note that D_c^* is the expectation measure; it is the difference between what preferred would have received from continuing and its actual payoff from the sale. Also note that, though common is ordinarily liquidity constrained, common can immediately pay D_c^* because exit is a liquidation event. Further, common can always afford to pay the full amount because there is no (equilibrium) case in which the damage award exceeds common's proceeds from the sale. (If there were, then common's exit payoff would be less than its continuation payoff, which is always positive, and common would not exit.)

[59]To explain each step: (1) $v > S^*$ implies $v > K$. Thus, in the event of exit, preferred either recovers its full preference (leaving common with $v-K$) or it converts to common stock (leaving common with $(1-\gamma)v$). Common's exit payoff is therefore

$$\min\{\max\{v-K,0\},(1-\gamma)v\} = \min\{v-K,(1-\gamma)v\}. \tag{38}$$

(2) Substitute D_c^*. (3) Cancel terms. (4) $\gamma v > K \implies (1-\gamma)v < v-K$. Also, $\gamma v < K \implies (1-\gamma)v > v-K$. Thus, the left side is always v.

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