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ECONOMIC AND LEGAL BOUNDARIES OF FIRMS

Edward M. Iacobucci and George G. Triantis***

*T*WO types of theories of the firm have emerged in scholarship. Economic theories concern the allocation of control rights and residual claims: under an economic theory, a firm is a group of assets under common ownership. Legal theories focus on the legal significance of firm boundaries: under a legal theory, each firm is a legal person. Thus, assets may be economically integrated under common control and yet be partitioned between distinct legal entities. This paper presents a theory of legal boundaries that focuses on the choice of capital structure and traces the interplay between economic integration and legal partitioning. The law treats many capital-structure decisions, including both financial and governance choices, as in personam rather than in rem. Thus, these decisions must be made firm wide; they include the issuance of debt or equity, the adoption of takeover defenses, and the composition of the board of directors. Yet the determinants of optimal capital structure are often asset contingent. For example, the amount of leverage, the desirability of takeover defenses, and the number of independent directors may vary with the industry. The resulting tension is

* Associate Professor, Osler Chair in Law and Business, University of Toronto Faculty of Law.

** Professor, Harvard Law School. We thank Ken Ayotte, Rick Brooks, Ron Gilson, Zohar Goshen, Henry Hansmann, Roberta Romano, Alan Schwartz, Robert Scott, Richard Squire, and William Widen for helpful comments and discussions, as well as participants at workshops at the law schools of Columbia, Chicago, Duke, Toronto, and Virginia, and a John M. Olin Conference on the Law and Economics of Organizations at the University of Virginia.

significant in the choice of firm boundaries. If two groups of assets have divergent capital-structure demands—in that the optimal design of financial and governance rights related to each group is different—then either the assets are put in separate firms that tailor capital structure to their respective asset groups or they are combined in a single firm with a blended capital structure. We suggest that legal integration into a single firm sacrifices efficiency in some cases but not in others. Where the efficiency losses are large enough to offset countervailing advantages from legal integration, legal partitioning might occur. We also demonstrate, however, that legal partitioning may undermine the benefits from economic integration, even if the discrete firms are kept under common control, as that concept is defined in law. Our theory thus suggests additional factors to be considered in explaining the structure of combinations (such as mergers or acquisitions) and divestitures (such as spin-offs, carve-outs, or securitizations).

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INTRODUCTION

In the scholarship of law and economics, theories of the firm may be divided into two categories. First, economic theories explain the locus of control over residual claims in assets.¹ For example, transaction cost and property rights theories predict the integration of assets under common ownership to address incomplete contracting problems, particularly the incentive of parties to underinvest because of the threat of hold-up in renegotiation.² Under the typical legal definitions, however, a person may be an owner even though she has transferred financial claims and partial control to another person. Indeed, the presence of wealth constraints and risk aversion often leads owners of business assets to sell claims in those assets to outside investors, giving rise to the incentive problems addressed by corporate finance, especially agency costs. Thus, economic integration may reduce hold-up problems but increase financial agency costs.

Second, legal theories of the firm focus on the role of the legal boundaries of firms in mitigating agency problems, even when distinct firms are affiliates under common control.³ For example, these theories explain that the partitioning of assets between distinct corporations both exploits the monitoring efficiencies of creditors

¹ This school of thought is the legacy of Professor Coase's article comparing markets to hierarchies. See R. H. Coase, *The Nature of the Firm*, 4 *Economica* 386 (1937). It includes the transaction cost theory of Professor Williamson, see Oliver E. Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications* (1975), and the property rights theory of Professors Grossman, Hart and Moore, see Oliver Hart, *Firms, Contracts, and Financial Structure* 29–33 (1995); Sanford J. Grossman & Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 *J. Pol. Econ.* 691 (1986); Oliver Hart & John Moore, *Property Rights and the Nature of the Firm*, 98 *J. Pol. Econ.* 1119 (1990), as well as others, see, e.g., Raghuram G. Rajan & Luigi Zingales, *The Firm as a Dedicated Hierarchy: A Theory of the Origins and Growth of Firms*, 116 *Q.J. Econ.* 805 (2001).

² See Hart, *supra* note 1; Oliver Williamson, *The Economic Institutions of Capitalism* (1985); Grossman & Hart, *supra* note 1; Hart & Moore, *supra* note 1; Benjamin Klein et al., *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 *J.L. & Econ.* 297 (1978); Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 *J.L. & Econ.* 233 (1979).

³ See, e.g., Henry Hansmann & Reinier Kraakman, *The Essential Role of Organizational Law*, 110 *Yale L.J.* 387, 399–401 (2000); George G. Triantis, *Organizations as Internal Capital Markets: The Legal Boundaries of Firms, Collateral, and Trusts in Commercial and Charitable Enterprises*, 117 *Harv. L. Rev.* 1102, 1109–18 (2004).

who finance each asset group,⁴ and breaks up internal capital markets that might be abused by agents.⁵

This paper presents a general capital-structure theory of the legal partitioning of assets. “Capital structure” encompasses both the financial and governance features of financial contracts. Under this theory, assets are partitioned into distinct organizations to realize the efficiency gains that result from tailoring the features of financial contracts to each partitioned asset group. Conversely, assets are grouped in a single entity when the tailoring benefits are outweighed by economies that derive from unitary, firm-wide financing—particularly, more complete economic integration of the assets and, in some cases, lower investigation and monitoring costs for investors.

The foundational legal principle in our analysis is that only legal persons may own property. Legal persons may vindicate their ownership rights in court, and they may be defendants against whose property creditors may enforce their claims. Accordingly, only a legal person has the capacity to contract—that is, to make a legally enforceable pledge of its assets to the performance of its promise. Although more than one person may hold joint property rights, a subdivision of a person may not own property; a corporation is a legal person that may own property, but a division or branch of the corporation may not. A corporation’s division has no standing to bring an action in court and cannot be sued. The division lacks capacity to enter into a legally enforceable contract because it cannot commit its property to the performance of its obligations. Although the corporation itself might enter into a contract that attempts to limit its exposure to only a subset of its assets, we show that such segmentation is difficult to achieve under current law.

These basic legal principles of civil procedure, property, contract, and corporate law impose very significant constraints on the design of capital structure. In this paper, we review those constraints on debt and equity financing, and we trace the implications of decisions about whether to partition assets between distinct corporations. Unsecured debt, for example, is a personal obligation

⁴ See, e.g., Hansmann & Kraakman, *supra* note 3, at 424.

⁵ Triantis, *supra* note 3, at 1105–06.

incurred on a firm-wide basis. If a corporate division purchases inventory on credit, judicial enforcement of that obligation can reach any of the assets of the corporation, and, in particular, it is not limited to the inventory. Secured debt entails not only a claim against the collateral assets, but also a personal right to collect the deficiency as an unsecured claim against any of the assets of the firm. Indeed, a secured creditor may move directly against those assets, without first enforcing its security interest against the collateral. Nonrecourse secured financing does cut off the creditor's personal claim against the debtor and thereby against noncollateral assets, but there are substantial legal impediments to making debt nonrecourse: courts sometimes disregard the nonrecourse provision, and bankruptcy reorganization law treats nonrecourse debt as recourse unless the secured creditor elects otherwise.⁶

Similarly, with respect to equity financing, a corporation may issue common shares only on a firm-wide basis. For example, dividends cannot be paid to shareholders unless the entire corporation meets certain overall capital requirements.⁷ Moreover, the governance rights of shareholders are substantially firm wide: they are regulated by a single state of incorporation, and the law generally vests authority for management in a single board of directors. Hostile takeovers, a disciplinary force on management, affect the entire firm, and, accordingly, firms cannot easily adopt takeover defenses on an asset-by-asset basis. We illustrate the constraints on intrafirm financing and governance flexibility by reviewing the challenges and experience of tracking stock.⁸ To fully match groups of assets with appropriate financing and governance features, an entrepreneur cannot rely on tracking stock but instead must partition the groups into distinct entities.

The finance literature covering the various financial and governance decisions of a firm is vast and, in many respects, has not arrived at either a theoretical or an empirical consensus. Theories of optimal capital structure often condition their prescriptions on the nature of the assets being covered. For instance, assets that are difficult to value and monitor are more likely than transparent assets

⁶ See, e.g., 11 U.S.C. § 1111(b)(1)(A) (2000).

⁷ See *infra* text accompanying notes 50–51.

⁸ Tracking stocks are designed to reflect the performance of divisions or other subsets of firm assets. See *infra* text accompanying notes 52–59.

to be held in firms that have private, rather than public, debt and concentrated, rather than dispersed, equity ownership. Assets with volatile value are less likely than low-risk assets to be financed with debt or concentrated equity. The practical consequence of legal restrictions on asset-specific financing is that entrepreneurs and managers seeking to tailor financial and governance rights to different asset types must do so outside corporate boundaries by partitioning assets among multiple firms. If a single firm combines asset groups that have markedly divergent capital-structure “demands” in this respect, the integrated firm adopts a blended capital structure different from that which the corresponding segregated firms would choose. Sometimes the blended structure compromises efficiency, and this loss may deter legal integration. The similarities and differences in the capital-structure demands of different assets or project types, and the related consequences of integration, present a novel set of considerations that bear on the structure of conglomerates (such as mergers and acquisitions) and divestitures (such as spin-offs, carve-outs, and securitizations).⁹

As noted at the outset, the economic and legal theories of firm boundaries address, respectively, two separate problems that arise from incomplete contracting: hold-up and agency costs. Although integrating those concerns in a single analysis is theoretically daunting, business groups often must take them both into account in choosing a corporate structure. Suppose that assets *A* and *B* produce synergy when combined with the human capital provided by individual *X*. If *X* does not own *A* and *B*, she may underinvest in these assets because of the threat of being held up in later bargaining with the owners of *A* and *B* over the surplus generated by that synergy. Therefore, economic theory may predict that she

⁹ Existing theories focus on risk diversification, operational synergies, the weakness of contractual protection of specific investments, and the benefits and costs of internal capital markets. See *supra* notes 1–3 and accompanying text. In a recent article in the same vein as ours, Professor Leland models the decision to integrate (or segregate) as tailoring the debt-to-equity financing ratio and focuses on three variables: the tax benefit of debt, the expected default costs, and the value of limited liability. Combinations diversify risk and increase the optimal leverage, thereby increasing the tax benefits that accrue to the enterprise. Expected default costs may increase or decrease depending on the characteristics of the assets. The value of limited liability is reduced, however, when the assets are integrated. Hayne E. Leland, *Financial Synergies and the Optimal Scope of the Firm: Implications for Mergers, Spinoffs, and Structured Finance*, 62 *J. Fin.* 765 (2007).

would own one or both assets. If, however, X is capital constrained or risk averse, she cannot or may not wish to fund the purchase of these assets and must obtain financing from outside investors. These investors, of course, rely on X as their agent, and contracting imperfections, such as limited foresight, prevent them from perfectly aligning X 's incentives with their own. Under legal partitioning theories, such as the one in this Article, X may then place A and B into two distinct firms to tailor the financial contracts to the attributes of the respective assets. Although the tailoring may reduce financial agency costs, the partitioning of assets resurrects some of the hold-up problems (even though, as understood by law, X owns and controls both assets) if the minority shareholders and creditors of each firm are different. Notably, fiduciary duties require that the firms deal with each other at arm's length, thereby undermining the benefits of common ownership or hierarchy on which economic integration theories rely.

To illustrate the tradeoff between integration and tailoring, consider the restructuring of AT&T's wireless assets in 2001. AT&T decided to finance its wireless assets separately from the rest of its assets. AT&T experimented with tracking stock but then decided to spin off the wireless assets by transferring them to a new corporation and distributing the new corporation's stock to AT&T shareholders.

The spin-off undoubtedly undermined economic integration and raised contracting costs. Wireless and wireline assets are complementary in important respects. Wireless customers demand the ability to speak with wireline telephone users, so wireless providers require access to wireline networks. Moreover, as a marketing matter, customers who subscribe to wireless service often retain their wireline service and prefer to deal with a single provider of both. After the spin-off, AT&T's wireless and wireline assets ceased to be integrated legally or economically. Therefore, the separate firms turned to complex contracting in order to realize the synergies between wireless and wireline businesses.¹⁰ AT&T and AT&T Wireless entered into a five-year contract pursuant to which AT&T

¹⁰ A mere summary of the major elements of the relationship between AT&T and AT&T Wireless occupied six pages in AT&T Wireless's Form 10-K405 filing for the year ending December 31, 2001. AT&T Wireless Servs., Annual Report (Form 10-K405), at 17-23 (Mar. 28, 2002).

agreed to provide wholesale network services to AT&T Wireless.¹¹ AT&T Wireless also purchased from AT&T the right to use various trademarks and retained AT&T as its agent to market wireless services to AT&T's business customers. In addition, AT&T and AT&T Wireless agreed to begin selling bundles of wireline and wireless services.¹² Although their contract provided for complex price and revenue sharing terms, it did not—and could not—seal off the prospect of opportunistic behavior and renegotiation by either party, given the uncertainty that loomed over the five-year contract term and the relationship-specific investments that each firm had made.¹³

While there were costs from the spin-off because of the segregation of complementary assets, these were at least partly offset by capital-structure tailoring benefits. Wireless assets are distinct from AT&T's remaining assets, especially the mature business of wire-

¹¹ Id. at 20–21.

¹² As one telecommunications observer stated of the announced agreement, “‘This deal between AT&T and AT&T Wireless is a natural, but in a way it’s ironic that this bundling . . . happened after the companies separated.’” No Surprise: AT&T Bundles Wireless/Wireline Service, *Wireless Wk.*, May 27, 2003 (on file with the Virginia Law Review Association) (quoting telecom analyst Jeff Kagan).

¹³ While undoubtedly reflecting an abundance of caution to limit the risk of liability for inadequate disclosure, the following statement in AT&T's 10-K405 filing for the year ending December 31, 2000, reflects these concerns:

AT&T Wireless Group historically has been part of an integrated telecommunications provider since its acquisition by AT&T in 1994. If we complete the split-off, the separation of AT&T Wireless Services from the other telecommunications businesses of AT&T may adversely affect AT&T Wireless Services.

In particular, following the split-off, AT&T will have no obligation to provide financial, operational or organizational assistance to AT&T Wireless Services other than limited services. AT&T Wireless Services may not be able to implement successfully the changes necessary to operate independently. AT&T Wireless Services may also incur additional costs relating to operating independently that would cause its cash flow and results of operations to decline materially. In addition, although AT&T Wireless Services may be able to participate in some of AT&T's supplier arrangements where those arrangements permit this or the vendors agree to this, its supplier arrangements may not be as favorable as has historically been the case.

Agreements to be entered into in connection with the split-off provide that the business of AT&T Wireless Group will be conducted differently and that its relationship with AT&T will be different from that which has historically been the case. These differences may have a detrimental effect on the results of operations or financial condition of AT&T or AT&T Wireless Services.

AT&T Corp., Annual Report (Form 10-K405), at 82 (Apr. 2, 2001).

line telephony. We will review theories that match financing preferences to assets in greater detail in Part II, but finance theory indicates that a dynamic, growth asset like wireless would rely to a greater extent on equity financing than a mature asset. The prediction is clouded in the case of AT&T because it held both mature telephony assets as well as more dynamic assets like a broadband business. Nevertheless, after the spin-off, the capital structure of AT&T Wireless was quite different from that of AT&T. On December 31, 2000, the integrated firm had a debt-equity ratio (including the value of tracking stock) of 1.25.¹⁴ On December 31, 2001, however, AT&T Wireless Services had a debt-equity ratio of 0.76,¹⁵ while the ratio in AT&T was 2.04.¹⁶ Consistent with the tailoring theory, the dynamic wireless assets were moved into a distinct legal corporation with a much lower debt-equity ratio than the remaining assets.¹⁷ Although the spin-off may have created costs from incomplete economic integration, segregation created benefits by facilitating a better match between capital structure and asset type.

This Article proceeds as follows: Part I elaborates the legal constraints that require firm-wide choices among financial and governance features of capital structure. Part II reviews the various ways in which optimal capital structure is asset contingent, in that it depends on the nature of the assets being covered. We thereby identify the source of a potential cost of the firm-wide constraints. Part III identifies the informational economies that result from combining assets within a single legal firm, as well as the adverse effect of legal partitioning on economic integration. Part IV then illustrates how the capital-structure theory may contribute to an analysis of combinations and divestitures.

¹⁴ Id. at 129.

¹⁵ AT&T Wireless Servs., *supra* note 10, at 71.

¹⁶ AT&T Corp., Annual Report (Form 10-K/A), at 38 (May 3, 2002).

¹⁷ As the result of a series of acquisitions following the restructuring, the AT&T wireless and wireline assets were eventually reunited. First, Cingular acquired AT&T Wireless, and then the parent of Cingular, SBC, acquired AT&T. This does not detract from our identification of a tradeoff in the effects of the 2001 restructuring, though it may cast doubt on its optimality.

I. FIRM-WIDE FEATURES OF CAPITAL STRUCTURE

A. Corporate Legal Personality

A corporation is a legal person, and many corporate statutes explicitly grant corporations the rights of a legal person, including the right to sue and be sued, to own and transfer property, and to enter into legally enforceable contracts.¹⁸ These rights are interdependent. Specifically, the right to sue is necessary to the ownership of property, and both of these (and the ability to be sued) are necessary to the capacity to exchange promises by contract.

An important but much less noted legal feature is that a corporation is an indivisible legal person. The rights of a legal person attach to the corporation as a whole; the entire corporation has ownership rights in its property, and it appears in court as a single party. A division of the corporation, in contrast, does not have legal personality. A division cannot sue or be sued, cannot own property, and cannot contract.¹⁹ Moreover, although a corporation enjoys the capacity to contract that a division lacks, a corporation faces significant obstacles if it attempts to limit its obligation or liability under a contract to a subset of its assets. Those basic legal rules provide the foundation for the constraints on the design of debt and equity financing, discussed below, and thereby cause these capital-structure features to be firm wide.

B. Debt Financing

Debt is a personal obligation that is enforceable only against a legal person because only a legal person can be sued. When judgment is issued against a debtor firm, a creditor may recover through judicial seizure and sale of *any* of the debtor's assets. Two legal features of debt recovery are important for our purposes: first, assets of entities legally distinct from a debtor firm are be-

¹⁸ E.g., Del. Code Ann. tit. 8, § 122 (2001); 805 Ill. Comp. Stat. Ann 5/3.10(b), (d), (h) (West 2004); N.Y. Bus. Corp. Law § 202(a)(2), (4), (7) (McKinney 2003). Some statutes explicitly grant personhood to corporations. For example, Ontario's Business Corporations Act, R.S.O., ch. B.16, § 15 (1990), provides that a corporation has all the powers of a natural person. See also Cal. Civ. Code § 14 (West 1982) ("the word 'person' includes a corporation as well as a legal person").

¹⁹ See tit. 8, § 279 (explaining that on corporate dissolution, the appointed trustee or receiver takes charge of *all* a corporation's debt and property).

yond the reach of its creditors, and, second, *all* assets of a debtor firm are susceptible to removal. Thus, a firm's boundaries define the set of assets that are subject to the personal obligation of the firm to pay its debts.

The first feature is the cornerstone of Professors Hansmann and Kraakman's explanation of the asset-partitioning function of organizational law: a creditor of firm *A* cannot recover from the assets of firm *B*, and, reciprocally, the creditor does not risk having firm *B*'s creditors removing assets from firm *A*.²⁰ In our analysis, the second feature is also very significant: all of *A*'s assets are available to its creditors, with narrow exceptions. Business organizations incur debt on a firm-by-firm basis and commit all their assets to the satisfaction of their respective debts. In this Section, we review the legal rules that align debt obligations with firm boundaries.

1. Financial Features

Assets outside firm boundaries are generally beyond the reach of the firm's creditors. Parties who have contracts with a firm or who have lent money to it are usually not liable to the firm's other creditors. Also, the doctrine of limited liability protects firm owners, whether they are individuals or other firms. Thus, a parent is generally not liable for the debts of its subsidiary; nor is one subsidiary liable for the debts of another subsidiary, even if they are subject to common control. If, however, the formalities of the legal boundaries are not observed, a firm's creditors might reach assets of affiliates or of a dominant lender, particularly if the firm is undercapitalized. This right exists in various doctrinal forms, such as alter ego, agency, piercing the corporate veil, and enterprise liability.²¹ Additionally, a bankruptcy court may substantively consoli-

²⁰ See Hansmann & Kraakman, *supra* note 3, at 393–96.

²¹ See generally Stephen M. Bainbridge, *Abolishing Veil Piercing*, 26 *J. Corp. L.* 479 (2001); Steven L. Schwarcz, *Collapsing Corporate Structures: Resolving the Tension Between Form and Substance*, 60 *Bus. Law.* 109 (2004). This policing of firm boundaries is justified in some cases by the attempts of enterprises to shield valuable assets from liabilities that might arise during the course of operations, particularly from tort judgments or regulatory fines or penalties. These attempts are manifest in the establishment of parent-subsidiary groups that separate the activity of the enterprise from its valuable assets. See Lynn M. LoPucki, *The Death of Liability*, 106 *Yale L.J.* 1, 21 (1996) (“Most large companies consist of numerous corporate entities. Limiting liabil-

date related debtor corporations.²² These doctrines are rarely invoked successfully, particularly if the formalities of distinct legal entities are observed (such as separate financial records, deposit accounts, and board meetings).²³

There are other limited exceptions to the general rule that bars creditors from reaching assets outside the debtor firm's boundaries, particularly if the debtor once owned those assets and transferred them to a third party. First, the creditor may assert that the debtor's transfer was in fact a secured transaction rather than a true sale. In that case, the transferee is treated as if it held a security interest in the asset, rather than ownership.²⁴ Therefore, the debtor still holds an interest in the asset (the right to redeem), to which its other creditors may assert a claim. This is particularly significant in bankruptcy, where the stay prevents collateral from being removed from the estate and permits the estate to use the as-

ity—that is, defeating part of it—is the principal reason for creating those entities.”). There are a number of competing explanations, and other commentators have raised doubts about the incidence of such judgment-proofing activity. E.g., James J. White, *Corporate Judgment Proofing: A Response to Lynn LoPucki's The Death of Liability*, 107 *Yale L.J.* 1363, 1364, 1394–99 (1998).

²² See, e.g., James H.M. Sprayregen et al., *The Sum and Substance of Substantive Consolidation*, in *Annual Survey of Bankruptcy Law 1* (William L. Norton, Jr. ed., 2005); William H. Widen, *Corporate Form and Substantive Consolidation*, 75 *Geo. Wash. L. Rev.* 237, 252 (2007).

²³ See, e.g., *In re Owens Corning*, 419 F.3d 195, 205–08, 212–16 (3d Cir. 2005) (outlining the history of substantive consolidation but declining to allow it in the instant case), cert. denied, 126 S. Ct. 1910 (2006); see also Robert B. Thompson, *Piercing the Corporate Veil: An Empirical Study*, 76 *Cornell L. Rev.* 1036, 1067–71 (1991). Professor Thompson found in his sample of published opinions that veil piercing to reach parent assets was rare, arising in only nineteen reported cases on the Westlaw database up to 1985, which covers U.S. cases roughly beginning in the 1930s. *Id.* at 1044, 1055. Piercing to reach a sibling subsidiary corporation's assets was also rare, but less so, arising in seventy-six reported cases. *Id.* at 1055. In *In re Owens Corning*, a group of banks lent two billion dollars to a parent and all of the parent's subsidiaries guaranteed the repayment obligation. Although all the firms were thereby debtors, the agreement limited the freedom of the debtor group to alter or disregard entity boundaries. It required, for example, that separate books and financial records be kept and prohibited the merger of any affiliates. *In re Owens Corning*, 419 F.3d at 200–01. The banks contracted for enterprise liability through the guarantees and wanted to ensure that formalities were observed to prevent a court from awarding enterprise liability (under any of the related doctrines) in favor of other creditors.

²⁴ See U.C.C. § 9-109(a)(1) (2002).

sets for the benefit of unsecured creditors.²⁵ Second, under fraudulent transfer laws, creditors may challenge a sale of assets for less than fair consideration if the debtor is insolvent or undercapitalized at the time of the sale.²⁶ Creditors may also recover assets transferred by the debtor with the intent to hinder, delay, or defraud the transferor's creditors. Non-arm's length transfers, such as those between affiliated entities, are particularly suspect in this regard.

The second important feature of debt obligations is that *all* assets within firm boundaries are susceptible to removal by a creditor. Setting aside security interests for the moment, the legal enforcement of a debt claim begins with a lawsuit filed against the debtor. The plaintiff creditor brings an action against one or more persons, but never against a part of a person, such as a division of a corporation. Moreover, a defendant cannot move to substitute a division for the entire organization, even if that division is the sole beneficiary of the alleged debt. Once judgment is obtained against a defendant debtor, all of the debtor firm's assets are available to satisfy the judgment.²⁷ Three basic mechanisms exist to enforce a judgment against the property of the defendant: first, judgment liens registered against real property; second, execution liens against personal property; and third, garnishment orders against receivables owed by third parties to the defendant. A judgment creditor may not recover more than it is owed (plus applicable in-

²⁵ See, e.g., *In re LTV Steel Co.*, 274 B.R. 278, 285–86 (Bankr. N.D. Ohio 2001) (discussing factors distinguishing a true sale from a disguised loan). Thus, transactions that purport to remove assets from the reach of a firm's creditors, such as structured finance, must ensure that the transfer will be viewed by a subsequent court as a "true sale." See Kenneth N. Klee & Brendt C. Butler, *Asset-Backed Securitization, Special Purpose Vehicles and Other Securitization Issues*, 35 UCC L.J. 23, 49–58 (2002).

²⁶ 11 U.S.C. § 548(a)(1)(B) (2000); Unif. Fraudulent Transfer Act § 4(a)(2), 7A pt. 2 U.L.A. 58 (2006); Unif. Fraudulent Conveyance Act § 4 (withdrawn 1984), 7A pt. 2 U.L.A. 318. We note in passing that the structure of this provision reflects the firm-wide concept of debt because it hinges on the ratio of an entity's debt to its assets. What matters is not the capitalization of the division from which the asset is removed, but the capitalization of the entire firm. The removal of an asset from a profitable venture within a firm may be a fraudulent transfer if the firm as a whole is financially distressed. A similar observation may be made about the preference provision in bankruptcy, which allows the trustee to recover preferential transfers if they were made while the debtor was "insolvent." 11 U.S.C. § 547(b).

²⁷ E.g., Cal. Civ. Proc. Code § 695.010(a) (West 1987); 735 Ill. Comp. Stat. Ann. 5/12-112 (West 2004); N.Y. C.P.L.R. 5201(b) (McKinney 1997).

terest and collection costs), but any of the defendant's assets may be seized and sold to pay this amount. Similarly, in the case of a corporate debtor, any receivables may be garnished. The creditor and the judicial officer (such as a sheriff) have discretion in choosing which assets to pursue. Typically, they do so in such a way as to satisfy as much of the judgment amount as possible at the least collection cost. In this collection process, the presence or absence of any connection between the judgment debt and the levied or garnished asset is not relevant. Thus, if a supplier delivers goods on credit and subsequently sues to recover the outstanding balance, its judgment may be enforced against a completely different set of goods and against receivables from the debtor's sale of unrelated goods. Moreover, security interests aside, a provision in the debt contract that purports to dedicate, or conversely insulate, any set of assets is not binding on the sheriff serving as the enforcement agent.

A judgment debtor may file for bankruptcy, and at that time bankruptcy rules replace the state law's collection process. Bankruptcy law also adheres to the firm-wide character of debt. Bankruptcy law permits the filing of a petition against or by a debtor, who must be a person, including a corporation or partnership, but not a division thereof.²⁸ Once bankruptcy is initiated, "all legal or equitable interests of the debtor in property" are transferred to the bankruptcy estate and controlled by the bankruptcy trustee.²⁹ The bankruptcy trustee can supplement this property with assets outside firm boundaries, which it reaches with its various transfer-avoidance powers.³⁰ The bankruptcy trustee represents all holders of unsecured claims.³¹ In liquidation (Chapter 7), the trustee sells the assets of the estate and distributes the proceeds to the creditors who have claims against the debtor.³² In reorganization (Chapter 11), the debtor usually files a plan of reorganization, and creditors

²⁸ 11 U.S.C. §§ 101(41), 109(a), 301(a), 303(a).

²⁹ Id. § 541(a)(1).

³⁰ Id. §§ 544, 547-548, 550-551.

³¹ In Chapter 11 reorganization, the debtor-in-possession has the same obligations as a trustee. Id. § 1107(a).

³² Id. § 726.

with claims against the debtor usually must accept the plan for it to be confirmed.³³

The presence of secured debt does not alter the fact that debt is a firm-wide obligation. Although a security interest gives the creditor priority over collateral assets, a secured party has the right to enforce the debtor's personal obligation and need not realize its security first.³⁴ If the creditor does enforce against the collateral, it is entitled to collect the deficiency from the other assets of the debtor.³⁵ The deficiency entitlement of the secured creditor, however, is a default provision that can be waived or altered by the parties. Specifically, the parties may agree to nonrecourse debt, which is explicitly a claim against specific assets without personal obligation of the debtor.³⁶

A nonrecourse secured claim is asset-based. Other investors in the firm who have personal recourse against the debtor do participate, however, in the division of any surplus remaining after the nonrecourse secured creditor is paid. Thus, even pure nonrecourse debt has firm-wide consequences because it affects the recovery of the firm's other creditors. Moreover, nonrecourse lenders sometimes have personal recourse against other assets of the debtor. In practice, nonrecourse lending agreements increasingly provide for contingencies that trigger full recourse.³⁷ More to the point, how-

³³ Id. § 1121(a)–(b) (providing that a debtor may file the plan and has an exclusive right to file the plan for 120 days); § 1129(a)(7) (specifying that creditors must either accept the plan or receive at least as much as they would recover under Chapter 7); § 1129(a)(8), (b)(1) (indicating that each class of creditors must accept the plan or not be impaired under the plan, unless the plan meets the cram-down requirements of § 1129(b)).

³⁴ U.C.C. § 9-601(a)(1) (2002) (“A secured party . . . may reduce a claim to judgment, foreclose, or otherwise enforce the claim . . . by any available judicial procedure . . .”). This right and the right to foreclose the security interest “are cumulative and may be exercised simultaneously.” Id. § 9-601(c).

³⁵ Id. § 9-608(a)(4) (“[T]he obligor is liable for any deficiency.”); § 9-615(d)(2) (same). Note that Article 9 uses special terminology to distinguish between the debtor and the obligor. The debtor is the person with an interest in the collateral, whether or not the person is an obligor whose performance is secured by the collateral. Id. § 9-102(a)(28). The two may be different persons if, for example, the collateral is in the hands of a transferee.

³⁶ Id. § 9-608 cmt. 3 (“The parties are always free to agree that an obligor will not be liable for a deficiency, even if the collateral secures an obligation . . .”).

³⁷ It is common for parties to carve out contingencies under which the lender will have personal recourse against the debtor, but we exclude these from our discussion here because they are not part of the background law. Carve-out terms commonly in-

ever, the law presents significant obstacles to insulating noncollateral assets by nonrecourse provisions. Notwithstanding such a provision, a borrower may be personally liable for the debt if it has acted fraudulently or, under the doctrine of waste, if it has not acted prudently in managing the collateral assets.³⁸

clude: (1) bad acts of the borrower that generate losses, such as fraud, misrepresentation, or misappropriation of insurance proceeds; (2) environmental contamination of the property, for which the borrower is made personally liable; (3) out-of-pocket expenses incurred by the lender as a result of a borrower's default; (4) failure of the borrower to pay insurance premiums or taxes; and (5) a filing by the borrower of a bankruptcy petition, making the entire loan recourse. Mary Kay Kennedy & Martin M. Fleisher, Sample Negotiation of Mortgage Commitment and Loan Document Provisions, *in* Negotiating Commercial Leases: How Owners and Corporate Occupants Can Avoid Costly Errors 1059, 1063–64 (PLI Real Estate Law & Practice, Course Handbook Series No. 461, 2000); see also Billie J. Ellis, Jr. & Drew G. Alexandrou, Negotiating and Documenting Real Estate Loan Transactions—Commonly Negotiated Provisions (With Forms), *in* Banking and Commercial Lending Law 1, 13–14 (ALI-ABA, Course of Study No. SB74, 1997); Michael D. Hamilton, The Borrower's Agenda, *in* Commercial Real Estate Financing 2005: What Borrowers & Lenders Need to Know Now 427, 471–73 (PLI Real Estate Law & Practice, Course Handbook Series No. 513, 2005); Gregory M. Stein, The Scope of the Borrower's Liability in a Nonrecourse Real Estate Loan, 55 Wash. & Lee L. Rev. 1207, 1229–33 (1998). Courts have enforced these carve-out provisions. See, e.g., *FDIC v. Prince George Corp.*, 58 F.3d 1041, 1046 (4th Cir. 1995) (holding that the borrower's filing of a bankruptcy petition triggered the carve-out clause and allowed recourse); *Heller Fin. v. Lee*, No. 01-C-6798, 2002 WL 1888591, at *3–5 (N.D. Ill. Aug. 16, 2002) (holding that a contract's carve-out terms were enforceable and not to be evaluated as liquidated damages clauses); see also John C. Murray, Carveouts to Non-Recourse Loans: They Mean What They Say!, *in* Modern Real Estate Transactions 185, 187–89 (ALI-ABA, Course of Study No. SJ004, 2003) (discussing, inter alia, the *Heller* case).

³⁸ See, e.g., *Travelers Ins. Co. v. 633 Third Assocs.*, 14 F.3d 114, 119–24 (2d Cir. 1994) (holding that waste includes borrower's intentional failure to pay property taxes); *Jaffe-Spindler Co. v. Genesco, Inc.*, 747 F.2d 253, 256 (4th Cir. 1984) (holding that mortgage's nonrecourse provision does not preclude recovery for waste resulting from failure to repair a crack in the roof); *Prudential Ins. Co. of Am. v. Spencer's Kenosha Bowl*, 404 N.W.2d 109 (Wis. Ct. App. 1987) (allowing lender's tort action against nonassuming grantee for either active or passive waste). But cf. *Boucher Invs., L.P. v. Annapolis-West Ltd. P'ship*, 784 A.2d 39, 47–51 (Md. Ct. Spec. App. 2001) (holding that the failure to secure parking for a property was not waste); *FGH Realty Credit Corp. v. Bonati*, 641 N.Y.S.2d 12 (N.Y. App. Div. 1996) (mem.) (holding that failure to pay taxes without evidence of fraud was not waste); *Chetek State Bank v. Barberg*, 489 N.W.2d 385, 387 (Wis. Ct. App. 1992) (holding that failure to pay property taxes, without more, did not constitute tortious waste). Generally, failures that result from true financial difficulty, rather than intentional bad faith acts, will not constitute waste. See *Mills v. Sdrawde Titleholders*, 841 F.2d 902, 904 (9th Cir. 1988). This common law cause of action for waste has been codified (or partially codified) in some states. See, e.g., *Ariz. Rev. Stat. Ann.* § 33-806 (2000); *Cal. Civ. Code* § 2929 (West 1993).

If a debtor petitions to reorganize under Chapter 11 of the Bankruptcy Code, a nonrecourse lender has the option of being treated as if it had personal recourse against the debtor.³⁹ The justification for this option is that the bankruptcy court must assess the secured claim of the lender based on the court's valuation of the collateral. The nonrecourse creditor bears a substantial risk that the court may undervalue the collateral and thereby deprive the creditor of value it would enjoy outside of bankruptcy. A recourse secured creditor, in contrast, can recover part of that shortfall in its deficiency claim against the debtor's estate. Section 1111(b) of the Bankruptcy Code offers a deficiency claim even to the nonrecourse secured creditor to protect it in part from the risk of judicial undervaluation of the collateral. This provision has important implications in the reorganization process. The nonrecourse creditor may vote on the reorganization plan as an unsecured creditor⁴⁰ and

³⁹ If the debtor in a Chapter 11 reorganization chooses to keep the collateral asset rather than sell it, a secured creditor that has no recourse against the debtor is nevertheless treated as if it had recourse, unless the creditor elects to be secured to the full extent of the claim (rather than the value of the collateral). 11 U.S.C. § 1111(b) (2000). If the secured creditor does not so elect, it holds an unsecured claim for the difference between the amount of the claim and the value of the collateral. In this event, the debtor must satisfy the debt claim of the secured creditor in full (not just the value of the collateral) before it can cramdown a reorganization plan that gives shareholders any value in the firm emerging from Chapter 11. *Id.* § 1129(b)(2)(B)(i)–(ii). Section 1122(a) speaks of classes of claims, but each secured claim is usually placed in a class of its own. See, e.g., *In re Commercial W. Fin. Corp.*, 761 F.2d 1329, 1338 (9th Cir. 1985). As a result of this section, the nonelecting, nonrecourse lender is thereby put in essentially the same position as the recourse secured lender in Chapter 11 reorganization. For the nonrecourse lender, the effect of this provision and the election therein is to protect the nonrecourse lender against being cashed out at the valuation given to the collateral by the court. If the secured lender makes the election, it is effectively guaranteed (unless the parties agree otherwise) aggregate payments equal to the total amount of the claim and a security interest in the collateral securing that amount. Therefore, if the collateral is either undervalued in bankruptcy or later appreciates, the secured claim will capture the added value.

⁴⁰ The circuit courts of appeals are divided as to whether the deficiency claim of a nonrecourse secured creditor under § 1111(b)(2) should be placed in a separate class from other unsecured claims. The majority holds that the deficiency claim should be combined with those of other unsecured creditors. See, e.g., *In re Greystone III Joint Venture*, 995 F.2d 1274, 1278–79 (5th Cir. 1991). The Seventh Circuit, however, holds that a nonrecourse creditor's deficiency claim is sufficiently dissimilar to those of a general unsecured claimant—because the deficiency claim does not exist outside Chapter 11—and must be placed in its own class. *In re Woodbrook Assocs.*, 19 F.3d 312, 317–19 (7th Cir. 1994).

is guaranteed a reorganization dividend equal to what it would have received on its deficiency claim in a Chapter 7 liquidation.

Although creditors have a claim on all of their debtor's property, their priority may be either personal and firm wide, under an agreement by *X* to subordinate its claim to *Y*, or asset specific, where *Y* has a security interest in defined property of the debtor. We observed above that security interests do not limit the debtor's exposure to the collateral assets, unless the debt is explicitly nonrecourse. Yet it is important to note that the legal scheme of priority is more asset- than firm-oriented. A security interest is a property right to a discrete set of assets in addition to a personal right against the debtor. Article 9 of the Uniform Commercial Code ("UCC") specifically addresses security interests against personal property. For many types of collateral (such as equipment, inventory, and receivables), the statute requires that the collateral be identified in the security agreement in order for a nonpossessory security interest to be enforceable against the debtor and third parties.⁴¹ The drafters of the UCC expressly indicated that a security agreement is unenforceable if it describes the collateral simply in a manner akin to "all property of the debtor."⁴² Nevertheless, by including an adequately specific description in the security agreement, the parties can grant the creditor blanket priority over all of the debtor's property, including both current and after-acquired assets. The feature of Article 9 that enables such broad coverage is that priority is typically achieved by filing a financing statement with respect to multiple asset groups, where the filing is against the debtor's name rather than against the property serving as collateral. In contrast, priority in *real* property is effected by filing against the collateral rather than against the debtor, and interested third parties who wish to lend to the debtor must search each plot of land separately. Moreover, secured lenders cannot enjoy the same priority in after-acquired real property as they can in personal property because, under state law, their priority can arise no

⁴¹ U.C.C. § 9-203(b)(3)(A) (2002); see also id. § 9-502(a)(3) (requiring that a financing statement indicate the collateral it covers).

⁴² Id. § 9-108 cmt. 2 ("[A]n 'all assets' or 'all personal property' description for purposes of a *security agreement* is *not* sufficient. Note, however, that under Section 9-504, a *financing statement* sufficiently indicates the collateral if it 'covers all assets or all personal property.'"); see also id. § 9-504 cmt. 2.

earlier than the time at which the debtor acquired the collateral property.⁴³ Thus, the asset-based conception of debt priority is more zealously protected in the law of mortgages than the law of personal property security.

Bankruptcy law undermines the asset-specific dimension of creditor priority. Once a firm enters bankruptcy, the automatic stay prevents secured creditors from removing their collateral in order to preserve the going concern value of the debtor.⁴⁴ The Bankruptcy Code purports to require the debtor to adequately compensate a secured creditor for any decrease in the value of its interest in the collateral.⁴⁵ Yet, in practice, adequate protection is more legal fiction than fact, leading to a significant compromise in the value of secured creditor priority in bankruptcy.⁴⁶ The prospect of bankruptcy thus raises the likelihood that a secured creditor will pursue its personal claim against the debtor rather than simply against the collateral assets. In sum, although the priority afforded by security interests is asset specific in legal doctrine, it yields in many respects to the overall focus of debt financing on the debtor as an indivisible person.

2. *Governance Features*

We have demonstrated that the decision to incur debt is made at a firm-wide level and that each creditor can reach all firm assets. One division of a firm cannot borrow without also committing all the other assets of the firm. For this reason, various other provisions of debt contracts have firm-wide impact. Consider the covenants and events of default in a loan agreement. Some covenants impose firm-wide obligations—for example, to maintain a specified ratio of assets-to-liabilities or to comply with a negative pledge clause. Other covenants are asset specific, such as the debtor's promise to maintain and insure key machinery. Even asset-specific

⁴³ Id. § 9-203(b)(2).

⁴⁴ 11 U.S.C. § 362(a). In fact, the Supreme Court interpreted the Bankruptcy Code to enable the debtor to recover even collateral that had been seized, though not sold, by the secured creditor. *United States v. Whiting Pools*, 462 U.S. 198, 211 (1983).

⁴⁵ 11 U.S.C. §§ 361, 362(d)(1), 363.

⁴⁶ See *United Sav. Ass'n of Tex. v. Timbers of Inwood Forest Assocs.*, 484 U.S. 365, 372–73 (1988) (holding that undersecured creditors are not entitled to postpetition interest).

promises have firm-wide consequences, however, because their violation triggers the creditor's right to compensation, which affects *all* assets of the firm. For example, if breach of the covenant permits the lender to accelerate the debt, this is a remedy against the assets of the entire firm. Even if the covenants were drafted ostensibly to limit the lender's remedies to a particular asset or division of the borrower, the lender would need to enforce those remedies in a suit against the corporation as a whole. Moreover, the unavailability of a specific performance remedy implies that all of the corporation's assets would be available to compensate the lender for losses resulting from the breach. Thus, all the corporate assets are in essence pledged to bond even a promise to be performed by a single division of the borrower. Cross-default clauses raise the stakes even higher by magnifying the consequence to the firm; a single division's violation of a covenant can cause a chain of defaults that leads to the acceleration and enforcement of numerous creditor claims against the assets of the entire firm.

In sum, a corporation chooses its leverage, its composition of creditors, and the terms of its debt across all assets of the firm. In Part II, we consider the fact that the *optimal* choice in these terms is fairly industry specific or asset specific. If more than one industry is represented in the operations of the firm, then the decision must blend the debt-structure demands of the disparate industries. The blended structure is likely to be different from the tailored structures that could be achieved by segregating asset types in distinct firms. In some cases, the blended capital structure has no adverse efficiency consequences. In other cases, however, the prospect of efficiency losses may lead decisionmakers to place different types of assets into discrete legal entities.⁴⁷

C. Equity Financing

As a legal person, a corporation commits all of its assets to support its contractual commitments. We have noted that a corporation faces obstacles in trying to limit its exposure in a debt contract to a subset of assets or a division. The corresponding challenge of

⁴⁷ The use of security interests may be an intermediate mechanism, but it is less effective than distinct legal entities in segregating assets. See Hansmann & Kraakman, *supra* note 3, at 417.

limiting equity interests to the property of one division is at least as difficult. In this Section, we examine constraints on the design of stockholder payoffs at dissolution and from dividends, on the governance rights of stockholders, and on the exposure of the firm to the market for corporate control. We illustrate some of these constraints by examining the design of tracking stock over the past twenty years.

1. *Financial Features*

As a general matter, a stockholder has a financial right to a payoff on dissolution of a company and to dividends that the directors might announce periodically. Common stockholders have the right to the residue of firm asset value upon dissolution, after all liabilities and other prior claims are satisfied. A firm's equity may be divided into classes carrying different financial rights. For example, classes may enjoy different priority to dividends and to proceeds upon dissolution, or they may hold rights to different proportions of the residue.⁴⁸ The financial rights of each class attach to all of the corporation's property, however, not just to specific asset groups.⁴⁹ This contrasts with the flexibility in debt contracting discussed earlier, where priorities may be asset specific.

Common stockholders have no enforceable right to dividends; the corporation's directors decide when and how much to pay. The directors' discretion is subject to regulation that protects fixed claimants and is legally constrained in a manner that is consistent with a firm-based, rather than an asset-based, approach. Corporate statutes require that firms only pay dividends out of current net operating profits or out of a capital surplus.⁵⁰ Net operating profits and capital surplus are defined on a firm-wide basis. Capital surplus is based on the difference between a corporation's total assets

⁴⁸ Del. Code Ann. tit. 8, § 151(a) (2001).

⁴⁹ See id. § 281(a); Model Bus. Corp. Act § 1.40(22) (2005) (defining shares as "the units into which the proprietary interests in a corporation are divided"); see also *In re Estate of Mellott*, 574 P.2d 960, 969 (Kan. Ct. App. 1977) ("By definition, a share of stock is a unit of interest in a corporation. While stock ownership confers no immediate title to any of the property of the corporation, it entitles the shareholders to a proportionate part of the property or its proceeds when distributed according to law and equity. Each share represents a distinct and undivided share or interest in the common property of the corporation.").

⁵⁰ See, e.g., tit. 8, § 170(a).

and total liabilities.⁵¹ Thus, directors cannot announce a dividend payable out of the profits of a single division if the firm as a whole fails to meet the statutory threshold described above. Equity must have a firm-wide dimension under the law.

The fact that stockholder rights are firm-wide constrains the ability of firms to provide compensation-based incentives to their employees. A firm can compensate a divisional manager on the basis of the division's performance, as reflected in the firm's financial statements. If it seeks to exploit market information, however, it is limited to the market price of its firm-wide shares. Thus, the firm has a choice between using the market's assessment of the entire firm or relying only on internal information to tailor compensation more closely to the manager's performance. To improve managerial incentives by incorporating market information about a division, the firm must partition the division assets into a distinct legal entity.

In Part II, we discuss various benefits of tailoring capital structure, including the financial and governance features of equity, to asset-type. Motivated by some of these benefits, a number of corporations have issued tracking stock that purports to track the fortunes of a corporate division, like a telecommunications division. Although issuers market this stock as one that reflects the value of the tracked division, the designers face significant legal obstacles to achieving the intended "tracking" of value. In fact, the tracking function is far better achieved by establishing a distinct legal entity to hold the assets and using alternative restructuring forms such as spin-offs and equity carve-outs.

The tracking objective is undermined by the firm's inability to link the tracking stock's dissolution rights to the tracked assets. Tracking stocks uniformly provide that they are entitled to share in the value of the entire firm.⁵² The more recent attempts to create a closer connection between the tracking stock and the tracked divi-

⁵¹ See, e.g., *id.* § 154.

⁵² See, e.g., Jeffrey J. Hass, *Directorial Fiduciary Duties in a Tracking Stock Equity Structure: The Need for a Duty of Fairness*, 94 *Mich. L. Rev.* 2089, 2097–98 (1996) ("Most importantly, holders of a particular class of tracking stock have no direct claim against the assets of the business group to which their class is linked economically. Instead, based on their respective liquidation rights, such holders share in any assets of the entire corporation remaining once creditors and preferred stockholders have received all amounts owed to them.").

sion have been crude; they define the share to which the tracking stockholders are entitled in all the assets of the firm rather than merely the tracked assets. In some cases, the tracking stock is entitled to a fixed, predetermined proportion of the corporation's total assets.⁵³ In other cases, the tracking stock's share is determined by the ratio of the market capitalization of the tracking stock to that of the remaining stock.⁵⁴ Under the first formulation, the division's profits and losses are still shared with other classes of common stock, and the tracking stockholders participate in the fortunes of other divisions. The fraction of firm value realized by the tracking stock on dissolution is invariant to the division's performance after the issuance of the stock. Even under the second method, the tracking stock's payoff on dissolution varies with market capitalizations, which themselves depend on market expectations of proceeds on dissolution. This circularity implies that the payoff for tracking stock is only loosely, if at all, correlated with the division's performance.⁵⁵ The fact that lawyers and bankers have devoted considerable resources to the structure of tracking stocks—and that they nevertheless remain remarkably crude mechanisms for

⁵³ Bruce N. Hawthorne & Andrew M. Tebbe, Tracking Stock: Terms, Methods of Issuance, Advantages and Disadvantages, *in* 33rd Annual Institute on Securities Regulation 243, 248 (PLI Corporate Law & Practice, Course Handbook Series No. 1279, 2001); Triantis, *supra* note 3, at 1135.

⁵⁴ Hass, *supra* note 52, at 2097; Hawthorne & Tebbe, *supra* note 53, at 248.

⁵⁵ Suppose a corporation has \$100 in assets divided equally across two divisions, *A* and *B*. Division *A* has issued tracking stock whose dissolution right depends on the market capitalization of the tracking stock relative to that of the rest of the corporation (i.e., Division *B*). Suppose that the corporation does not pay dividends, so that the value of the stock derives entirely from its liquidation value. The value of the relative market capitalizations of the divisions depends on the expected proceeds from liquidation, which in turn depend on relative market capitalizations. If the market value of each tracking stock, *A* and *B*, is \$50, each stock would receive a payoff of \$50 upon dissolution. Now suppose that the firm operates for another period and division *B* incurs a loss of \$20, so that the aggregate value of the firm's assets drops to \$80. If the market value of tracking stock *B* does not change and the firm is dissolved, each stock would receive a payoff of \$40. Therefore, each stock's price would fall to \$40, leaving both stocks' share of the firm's dissolution value unchanged. If an investor panics and sells her share of *B* for \$30 so as to lower the observed market capitalization, this lowers the dissolution payoff of *B* and yields a self-realizing expectation. The relationship between the assets of the division and the value of the tracking stock on the relative market capitalization method of allocating proceeds could be positively related, unrelated, or conceivably even negatively related as the example shows. It depends on market activity that is unrelated to the performance of the tracked division.

tracking dissolution value—highlights the inability of the firm to issue asset-specific securities.⁵⁶

The law gives firms more flexibility with respect to dividends than dissolution rights, and therefore tracking stock instruments are somewhat more successful in linking dividends to tracked divisions. As we noted above, corporate law protects fixed claimants by requiring that the firm as a whole have a threshold level of required earnings or surplus to pay a dividend. The terms of tracking stock issues also require that the tracked division independently have earnings or a surplus before dividends can be paid to the shareholders.⁵⁷ Thus, the directors' ability to pay dividends to this group of equity investors is in part asset based in that it depends on the profitability of the single tracked division. Accounting principles and securities regulations require that the firm disclose separate financial results for each tracked division.⁵⁸ Yet the allocation of fixed obligations among divisions leaves much to the discretion of the firm and, significantly from our perspective, much more so than with respect to the measure of firm-wide obligations. The more meaningful constraint is likely to be the statutory firm-wide

⁵⁶ AT&T took elaborate steps in attempting to ensure that the value of the tracking stock was based largely on its wireless assets, including establishing an advisory board to review the fairness of transactions between the wireless group and the other businesses within AT&T. But these measures do not perfectly substitute for the segregation that a separate entity would achieve. The following statement in AT&T Corp.'s Form 10-K405 filing describes the implications of integrating the wireless and other assets within a single corporation:

The market price of AT&T Common Stock, AT&T Wireless Group tracking stock and Liberty Media Tracking Stock may not in fact reflect the financial performance and economic value of each group as we intend. Holders of AT&T Common Stock, AT&T Wireless Group tracking stock and Liberty Media Group tracking stock will continue to be common shareholders of AT&T Corp. and, as such, will be subject to all risks associated with an investment in AT&T Corp. and all of its businesses, assets and liabilities. The performance of AT&T Corp. as a whole may affect the market price of each stock or the market price could more independently reflect the performance of the business of each group. Investors may discount the value of each stock because each group is part of a common enterprise with the rest of the operations of AT&T Corp. rather than a stand-alone entity.

Holders of AT&T common stock, AT&T Wireless Group tracking stock and Liberty Media Group tracking stock are shareholders of one company and, therefore, financial impacts on one group could affect the other groups[.]

AT&T Corp., *supra* note 13, at 56.

⁵⁷ Hawthorne & Tebbe, *supra* note 53, at 247–48.

⁵⁸ See Triantis, *supra* note 3, at 1128–29.

restriction that prevents the payment of dividends if the surplus in the tracked division is offset by a deficit in the balance of the firm.⁵⁹

2. *Governance Features*

We have shown that equity cannot be issued purely in relation to a division alone, but rather the financial rights of equity are tied to the boundaries of the corporation. Corporate law mandates that many governance tools be firm wide rather than asset contingent. At a general level, the state of incorporation determines both the corporate statute and the courts that enforce mandatory and default laws of governance. Under the internal affairs doctrine, the incorporation jurisdiction governs the corporation irrespective of where the corporation conducts business. A corporation chooses its incorporation state on a firm-wide basis; it cannot select different jurisdictions for different divisions. At the same time, it selects the incorporation state based on corporate statutes and the body of judicial precedent found in the state, as well as the skill of the local bar and judiciary in interpreting it.⁶⁰ For example, by selecting an incorporation state, a firm chooses among various duties of care to bind its directors. Delaware applies a gross negligence standard to trigger liability,⁶¹ while Indiana requires reckless or willful misconduct.⁶² The state of incorporation also affects the ability of shareholders to bring derivative suits. For example, Delaware does not require plaintiffs in a derivative action to post security for costs,⁶³ while New York does in most cases.⁶⁴

Another firm-wide characteristic is that a corporation typically has a single board of directors. Some corporation statutes provide that there may be only a single board of directors overseeing the assets of the corporation, unless there is a unanimous shareholders' agreement specifying otherwise. Such shareholders' agreements

⁵⁹ See *id.* at 1133.

⁶⁰ See, e.g., Michael Klausner, *Corporations, Corporate Law, and Networks of Contracts*, 81 *Va. L. Rev.* 757, 841–42 (1995); Roberta Romano, *Law as a Product: Some Pieces of the Incorporation Puzzle*, 1 *J.L. Econ. & Org.* 225, 227–29 (1985).

⁶¹ For a comprehensive discussion of directors' duties under Delaware law, see *In re Walt Disney Co. Derivative Litig.*, 907 A.2d 693, 745–56 (Del. Ch. 2005).

⁶² *Ind. Code* § 23-1-35-1(e) (1999).

⁶³ See Jonathan R. Macey & Geoffrey P. Miller, *Toward an Interest-Group Theory of Delaware Corporate Law*, 65 *Tex. L. Rev.* 469, 511 (1987).

⁶⁴ *N.Y. Bus. Corp. Law* § 627 (McKinney 2003).

are impractical for public companies.⁶⁵ A corporation in these cases may not place a separate board of directors at the head of each division, where that divisional board would be directly accountable to the corporation's shareholders. In other jurisdictions, corporations have the power to establish divisional boards.⁶⁶ The authority of a divisional board, however, is subject to significant legal and functional constraints. For example, a divisional board cannot declare dividends. It also cannot insulate the division's assets from the reach of a lender who has extended credit to another division.

Boards may delegate, by resolution or bylaw, many of their powers to committees.⁶⁷ A board can delegate powers to a committee responsible for only a subset of the corporation, such as a division. The board of directors, however, retains the power to subsequently undo or amend the delegation.⁶⁸ Moreover, there are important limitations on the authority of board committees. Under Delaware law, for example, the board of directors cannot delegate to any committee the power to approve, adopt, or recommend to stockholders any matter that otherwise must be approved by stockholders, nor can committees adopt, amend, or repeal any bylaw of the corporation.⁶⁹ Other corporate statutes are even more restrictive on the permissible authority of committees, imposing additional limitations that include an inability to declare dividends⁷⁰ and to fix directors' remuneration.⁷¹ Finally, as we discuss further in the next paragraph, board members cannot avoid fiduciary obligations to the corporation as a whole, even with respect to decisions

⁶⁵ See, e.g., *id.* § 701; Canada Business Corporations Act, R.S.C., ch. C-44, § 102(1) (1985); Model Bus. Corp. Act § 8.01(b) (2005).

⁶⁶ See, e.g., Del. Code. Ann. tit. 8, § 141(a) (2001).

⁶⁷ See, e.g., *id.* § 141(c)(2).

⁶⁸ Directors themselves may have the power to adopt, amend, or repeal bylaws if such a power is set out in the certificate of incorporation. See, e.g., *id.* § 109(a). If the committee is established by a bylaw and the board does not have the authority to amend bylaws, the committee is nevertheless subject to dissolution by a vote of the entire body of stockholders. See, e.g., *id.* In other corporate jurisdictions, the full board's authority to dissolve the committee is express in the statute. See, e.g., N.Y. Bus. Corp. Law § 712(c).

⁶⁹ Tit. 8, § 141(c)(2).

⁷⁰ See, e.g., R.S.C., ch. C-44, § 115(3)(d); Model Bus. Corp. Act § 8.25(e)(1).

⁷¹ See, e.g., N.Y. Bus. Corp. Law § 712(a)(3).

made solely by the committee.⁷² Division-specific committees are not a close substitute for division-specific boards.

Given the legal personality of the corporation, the firm-wide nature of equity, and the unitary nature of the board of directors, it follows that directors owe their fiduciary duties to the entire corporation, not to any single part of the firm (namely, a division). This is clear as a matter of common law,⁷³ and it is also mandated explicitly in some corporate law statutes.⁷⁴ Given that equity interests are firm wide, that firms have unitary boards, and that the boards owe duties to entire firms, it follows that only entire firms and not asset groups (or divisions) may be subject to hostile takeover bids. If a raider seeks to control only a division, it must first take over the entire firm and then dispose of the other assets. Therefore, a firm's takeover defenses are firm wide; for example, poison pills, staggered boards, and dual-class recapitalizations affect all assets in a firm. Moreover, in its choice of incorporation state, the firm selects a broader regime for takeover regulation that governs all its assets.⁷⁵ A corporation cannot expose only a subset of its assets to a hostile takeover while at the same time protecting other assets

⁷² See tit. 8, § 141(2)(d).

⁷³ See *Weinberger v. UOP, Inc.*, 457 A.2d 701, 710–11 (Del. 1983); *Guth v. Loft, Inc.*, 5 A.2d 503, 510 (Del. 1939).

⁷⁴ The Canada Business Corporations Act, for example, requires directors and officers to “act . . . with a view to the best interests of the corporation.” R.S.C., ch. C-44, § 122(1)(a).

⁷⁵ These differences are particularly significant because firms rarely opt out of the takeover defenses permitted by state law, suggesting that the availability of takeover defenses influences the incorporation decision. See Lucian Arye Bebchuk & Alma Cohen, *Firms' Decisions Where to Incorporate*, 46 *J.L. & Econ.* 383, 404–20 (2003); Robert Daines & Michael Klausner, *Do IPO Charters Maximize Firm Value? Antitakeover Protection in IPOs*, 17 *J.L. Econ. & Org.* 83, 96 (2001) (showing that approximately six percent of Delaware firms opt out of Delaware's business combination statute at IPO while two percent of non-Delaware companies opt out of relevant state antitakeover statutes); Guhan Subramanian, *The Influence of Antitakeover Statutes on Incorporation Choice: Evidence on the “Race” Debate and Antitakeover Overreaching*, 150 *U. Pa. L. Rev.* 1795, 1872 (2002). Pennsylvania permits firms to adopt stronger deterrents to takeover bids than Delaware. Pennsylvania has adopted a constituency statute that allows directors to consider constituencies other than shareholders when reviewing an unsolicited takeover bid, a fair price statute, a control share acquisition statute that limits controlling shareholders' right to vote in the absence of approval from other shareholders, and a business combination statute that delays freeze-out transactions for a period following an acquisition of control. See Subramanian, *supra*, at 1828. Delaware simply has a business combination statute. See Subramanian, *supra*.

from a hostile bid through asset-specific takeover defenses. The threat of hostile takeover is a well-known constraint on managerial agency problems, and takeover defenses blunt this discipline.⁷⁶ As we discuss in Part II, agency problems are a function of asset type, but a firm cannot expose its managers to hostile takeovers on an asset-by-asset basis.

We outlined earlier the difficulty in ensuring that tracking stocks in fact “track” the financial condition of a division. The terms of a corporation’s legal personality prevent tracking stockholders from holding an exclusive residual claim against only the assets of the tracked division. Tracking stock architects face a parallel challenge in focusing the governance rights of tracking stock on the tracked division.⁷⁷ As noted above, there are important obstacles to division-specific boards. If tracking stock carries voting rights, those rights are to vote for directors on this unitary board.⁷⁸ This, in turn, implies that there can only be a hostile takeover of the whole corporation, not of a division that has issued tracking stock. In addition, it is clear that tracking stock does not affect the choice of corporate law that governs assets. The corporation with tracking stock may only incorporate in a single jurisdiction, and the law of that ju-

⁷⁶ There is an enormous amount of literature on the advantages and disadvantages of takeover protection. See, e.g., Frank H. Easterbrook & Daniel R. Fischel, *The Economic Structure of Corporate Law* 212–27 (1991); Jennifer Arlen & Eric Talley, *Unregulable Defenses and the Perils of Shareholder Choice*, 152 *U. Pa. L. Rev.* 577 (2003); Lucian Arye Bebchuk, *The Case for Facilitating Competing Tender Offers*, 95 *Harv. L. Rev.* 1028 (1982); Lucian Arye Bebchuk et al., *The Powerful Antitakeover Force of Staggered Boards: Theory, Evidence, and Policy*, 54 *Stan. L. Rev.* 887 (2002); Mike Burkart et al., *Why Higher Takeover Premia Protect Minority Shareholders*, 106 *J. Pol. Econ.* 172 (1998); Robert Comment & G. William Schwert, *Poison or Placebo? Evidence on the Deterrence and Wealth Effects of Modern Antitakeover Measures*, 39 *J. Fin. Econ.* 3 (1995); Ronald J. Gilson, *Seeking Competitive Bids Versus Pure Passivity in Tender Offer Defense*, 35 *Stan. L. Rev.* 51 (1982); Michael C. Jensen, *Takeovers: Their Causes and Consequences*, 2 *J. Econ. Persp.* 21 (1988); Roberta Romano, *A Guide to Takeovers: Theory, Evidence, and Regulation*, 9 *Yale J. on Reg.* 119 (1992); Alan Schwartz, *Search Theory and the Tender Offer Auction*, 2 *J.L. Econ. & Org.* 229 (1986).

⁷⁷ See Triantis, *supra* note 3, at 1135–37.

⁷⁸ The relative voting rights per share either are fixed at the time the tracking stock is issued or float based on market capitalization. See Hawthorne & Tebbe, *supra* note 53, at 246; Triantis, *supra* note 3, at 1135 n.96. Both Delaware and the Model Business Corporation Act permit a corporation to set aside seats on the board to be elected exclusively by specific classes of stockholders. Del. Code Ann. tit. 8, § 141(d) (2001); Model Bus. Corp. Act § 8.04 (2005).

isdiction governs assets both within and outside the relevant division.

Moreover, the fiduciary duties of the directors are owed to the firm as a whole, and courts have declined to apply a fairness scrutiny to transactions that have disparate impacts on tracked divisions.⁷⁹ Consequently, corporations are constrained in the mechanisms they can invoke to address the conflicts of interest between classes of tracking stock. They therefore tend to adopt policies or bylaws that purport to restrict decisions that reallocate value between divisions. For example, they provide for arm's-length terms in interdivision transactions and specific guidelines for the allocation of general expenses among divisions.⁸⁰ More generally, corporate policy may require the board to consider the interests of both tracking stockholders and other stockholders when certain actions that may affect the division's value are taken. Yet the board of directors is able to retract such a policy, and, in any event, the courts are unlikely to be aggressive in enforcing such corporate policies when the directors are meeting their fiduciary obligations to the firm as a whole.

II. ASSET-SPECIFIC DETERMINANTS OF OPTIMAL CAPITAL STRUCTURE

The theory of optimal capital structure began as an inquiry into the mix of debt and equity, notably in the seminal article by Professors Modigliani and Miller.⁸¹ Since then, capital-structure theory has evolved to focus on optimal contract design.⁸² Accordingly, corporate finance scholars write not only about the optimal amount of

⁷⁹ See, e.g., *In Re Staples, Inc. S'holders Litig.*, 792 A.2d 934, 937 (Del. Ch. 2001) (refusing to review the substantive fairness of a reclassification scheme designed to eliminate the company's tracking stock); *Solomon v. Armstrong*, 747 A.2d 1098, 1124–29 (Del. Ch. 1999) (dismissing the plaintiff's fiduciary duty claims given director's committee's efforts to approximate arm's-length transaction and given shareholder ratification); *In re Gen. Motors Class H S'holders Litig.*, 734 A.2d 611, 616–19 (Del. Ch. 1999) (rejecting fiduciary duty claims on grounds that shareholders ratified disputed transactions and that directors were not materially self-interested despite their shareholdings).

⁸⁰ See Hawthorne & Tebbe, *supra* note 53, at 254; Triantis, *supra* note 3, at 1136–37.

⁸¹ Franco Modigliani & Merton H. Miller, *The Cost of Capital, Corporation Finance and the Theory of Investment*, 48 *Am. Econ. Rev.* 261 (1958).

⁸² See, e.g., Hart, *supra* note 1, at 126–51.

leverage, but also about the identity of the lender (trade credit, institutional lenders, or public debtholders) and optimal contractual features in debt, such as maturity, conversion rights, collateral, events of default, and guaranties. On the equity side, scholars analyze features such as the optimal concentration of ownership, takeover defenses, and the composition of boards of directors. In this Part, we review a sample of corporate finance theories to demonstrate that many factors determining optimal capital structure depend on the nature of the assets being financed. Suppose that asset group *A* and asset group *B* are different in one or more of these respects so that if they were held in distinct corporations, the firms would have different optimal capital structures. If the two asset groups are instead integrated in a single firm, a third, "blended" capital structure is likely to be chosen that reflects both asset groups (and the interaction between them). Our investigation is concerned with the circumstances under which efficiency is compromised because capital structure is blended rather than tailored to specific asset groups in distinct firms.

The literature concerning optimal capital structure is dominated by concerns raised by imperfect information, particularly the fact that insiders of firms have superior information compared to outsiders. This asymmetry of information impedes the ability of a firm to raise external capital because outside investors are skeptical of the firm's representation of its value and therefore discount the firm's securities. The asymmetry also causes agency problems; outside investors can neither fully prevent insiders from using their information advantage to enhance their payoffs at the cost of reducing overall firm value, nor can they prevent them from hiding this activity from their investors. Managers may enhance the private benefits they receive from controlling the firm (such as leisure, perquisites, financial compensation, or investment in their own human capital), or they may make decisions that serve the interests of one constituency (for example, shareholders) at the expense of others (for example, creditors). Many of the financial and governance features of securities are aimed at mitigating these costs.

The focus on agency conflicts highlights several distinctions between asset types that are relevant in the following analysis. First, the valuation of some assets depends on information about technology or markets that is available only to insiders. Growth oppor-

tunities or options (such as R&D projects) tend to be more opaque in this respect than assets in place (such as mature manufacturing operations). Second, the contribution of management to asset values is often difficult to observe when the values are susceptible to exogenous risks. Third, agency problems are more significant when managers can convert firm assets into private benefits, so asset liquidity is an important distinction. Fourth, investors are concerned about the volatility of assets because they may be risk averse and because of the risk of insolvency. Therefore, the asset-type contrasts we will refer to frequently are: (a) opaque versus transparent (or growth opportunities versus asset-in-place); (b) liquid versus illiquid assets, and the related feature of cash flow; and (c) risky (volatile) versus nonrisky assets.

We recognize that capital-structure decisions are within the control of managers and consequently are themselves subject to agency problems. This has been particularly salient in the literature in connection with the choice of incorporation venue and the adoption of takeover defenses, but it is also a concern in other financing decisions such as the firm's leverage. We assume, however, that firms select a capital structure to address information concerns and thereby minimize their cost of capital. For example, managers may be encouraged to keep capital costs low in order to survive competition in product and factor markets.⁸³ We make this assumption to keep manageable a potentially vast exploration into capital-structure determinants. Our purpose here is to illustrate the asset-contingent character of many, if not most, optimal capital-structure decisions.

A. Debt Financing

We consider first the conventional question of optimal leverage—the ratio of debt to equity capital. Finance theory has identified three key determinants: taxes, bankruptcy costs, and information asymmetry.⁸⁴ We address them briefly to demonstrate the

⁸³ Indeed, the discipline from product or factor market competition also varies between asset types, raising further considerations for capital-structure tailoring.

⁸⁴ Firms may issue debt, and high-priority debt in particular, to lower their cost of capital at the expense of creditors who cannot or do not adjust their contract return to the capital structure of their debtors (tort creditors, for example). The potential gains from this strategy depend on the firm's expected liability to these nonadjusting credi-

effect of integration or segregation of asset groups on leverage decisions. The blended leverage decisions of the integrated firm should be different than those of the segregated firms, but whether this compromises efficiency is a much more complicated question.

First, the return paid on debt (interest) is tax deductible for the firm and taxable to the investor, while the return on equity is not deductible for the firm and might be taxed at a lower (capital gains) rate than interest in the hands of the investor would be taxed. Therefore, the tax profiles of the firm and of the investor are significant factors in choosing capital structure—for example, whether the firm has taxable income to offset against interest expense or whether the investor is a taxable entity. The nature of the firm's assets in part determines its tax profile. For example, if the asset is a growth opportunity that promises cash flow several years down the road, the deductibility of interest has little current value, and, all else equal, the firm would tend to issue equity rather than debt. If the growth opportunity is combined in a firm with a mature asset that produces income in the current period, then the firm can adjust its calculation of optimal debt based on the taxable income of the combined assets. Thus, while combining the two asset types yields an intermediate degree of leverage, it does not impair the ability of the firm to tailor its choice of leverage to its tax profile.

Second, the prospect of bankruptcy (or default) costs deters debt financing because the risk of insolvency increases with leverage. This relationship is also asset contingent. Bankruptcy risk varies with the degree to which asset values and cash flows are vulnerable to exogenous shocks. The more volatile the firm's asset values or cash flows are, the greater the bankruptcy risk for any given degree of leverage. More volatile assets, therefore, should be financed with less debt and more equity. The integration of two groups of volatile assets within a single corporation, however, reduces insolvency risk, unless the assets' returns are perfectly correlated. Thus, integration in a single firm may lead to higher leverage than that of

tors, which is asset contingent. For example, debt financing, particularly secured financing, is more likely when the tort risk is higher. If high-tort-risk assets are combined with low-risk assets, then this benefit from preferring debt to equity financing is muted, but it nevertheless can skew the financing of a larger firm with a broader set of assets. This consideration, however, may lead to the partitioning of operating and passive assets into distinct legal entities to allow for optimal tailoring.

a firm holding either asset group alone. In the previous paragraph, we observed that an integrated firm does not compromise the ability to design leverage so as to minimize taxes. Here, we note that integration both lowers the marginal cost of debt by reducing expected bankruptcy costs and opens the possibility of higher leverage.⁸⁵

A third set of considerations relating to optimal leverage are the twin problems of overinvestment and underinvestment. In the former case, managers overinvest in unprofitable ventures when they can thereby either enhance their private benefits or benefit the shareholders of a leveraged firm by taking greater risks.⁸⁶ Managers sell or borrow against one asset and use the proceeds to invest in a new project that is either more risky or yields greater private benefit. The ease with which they can do so, combined with the cash flow in the company, creates “financial slack” with which managers may overinvest. Debt, and particularly high-priority debt, constrains financial slack by requiring periodic payouts of free cash and impeding the firm’s ability to borrow against or sell its assets.⁸⁷ Moreover, the right of debtholders to force liquidation in the event of default mitigates the managers’ inefficient reluctance to liquidate or divest underperforming projects.⁸⁸

⁸⁵ See Leland, *supra* note 9, at 766; Wilbur G. Lewellen, A Pure Financial Rationale for the Conglomerate Merger, 26 J. Fin. 521, 534 (1971). Some empirical studies raise doubts about Professor Lewellen’s hypothesis because of findings that integrated firms borrow little more than their stand-alone counterparts. See, e.g., Philip G. Berger & Eli Ofek, Diversification’s effect on firm value, 37 J. Fin. Econ. 39, 59 (1995); Robert Comment & Gregg A. Jarrell, Corporate focus and stock returns, 37 J. Fin. Econ. 67, 84 (1995).

⁸⁶ One manifestation of this problem is the tendency of managers to resist liquidation of assets even when their liquidation value exceeds their value in the firm’s going concern. Debt can provide for events of default that, when triggered, transfer control to creditors who then compel liquidation. Debt is particularly valuable, therefore, when this scenario is likely to transpire. See Milton Harris & Artur Raviv, The Theory of Capital Structure, 46 J. Fin. 297, 302–03 (1991).

⁸⁷ The relationship between debt and asset substitution is more complicated than our brief discussion admits because the presence of debt increases the incentive of shareholders to push for excessive risk taking.

⁸⁸ The prospect of liquidation, like the threat of a takeover, threatens to deprive managers of future private benefits and thereby disciplines their current incentive to misbehave. See Arnoud W. A. Boot, Why Hang on to Losers? Divestitures and Takeovers, 47 J. Fin. 1401, 1402 (1992). For example, managers of a highly leveraged firm are less likely to shirk because competition in the product market will force the

Underinvestment is the converse problem and is caused by the private information of insiders that makes outside investors discount the value of the firm's securities, thereby raising its cost of capital.⁸⁹ Consequently, a firm may find it difficult to raise external financing for its new ventures and may instead rely on internal financing or financial slack to fund them. Therefore, a highly leveraged company, particularly one with outstanding high-priority debt, may lack the internal capital to fund profitable new ventures that are opaque to outsiders.

Debt, particularly high-priority debt, mitigates overinvestment but aggravates underinvestment. Therefore, debt financing is desirable when overinvestment is a greater threat than underinvestment. The relative significance of each problem varies with the nature of the firm's assets. For example, where a substantial portion of a firm's value is in growth options rather than assets in place, fixed debt claims (particularly high-priority claims) may impede the later financing of opportunities. This firm should have little debt in order to leave room for future debt financing. On the other hand, if firm assets are mature and growth opportunities are few, fixed obligations are desirable to remove free cash from the discretion of managers and to impede fresh borrowing against the existing assets.

When a firm has a combination of mature assets and growth opportunities, it should choose leverage somewhere in between the polar cases described above. Indeed, the firm might tailor its leverage to the combined set of assets by allowing for just enough slack to finance the anticipated profitable growth opportunities.⁹⁰ The financial efficiency of integration, in this respect, depends upon a related concern: the merits of the internal capital market created by the combination of the asset groups. If the managers have the in-

firm out of business more quickly than if the firm enjoyed a buffer of cash or other financial slack.

⁸⁹ The classic article in this vein of the literature is by Professors Myers and Majluf. Stewart C. Myers & Nicholas S. Majluf, *Corporate financing and investment decisions when firms have information that investors do not have*, 13 *J. Fin. Econ.* 187 (1984).

⁹⁰ For example, suppose that asset *A* produces \$100 of free cash flow per period and asset *B* produces \$300 of free cash flow. Separate firms *A* and *B* may have periodic fixed obligations of \$100 and \$300, respectively, while the combined firm would have periodic fixed obligations of \$400 to remove the aggregate free cash flow from managerial discretion.

centive to move capital efficiently from mature to growth assets by using cash flow from (or borrowing against) the former to finance the latter, then the internal capital market reduces the cost of capital. Otherwise, internal capital markets expand the possibilities for managers to shift capital opportunistically. In these cases, the integrated firm might prefer to shrink the internal capital market by raising the debt burden further, even though it may increase expected bankruptcy costs. Thus, the inefficiency of integration is manifest in the capital-structure choice as well as in the greater risk of managerial misbehavior. The combined firm must incur the bankruptcy cost of additional debt in order to address a new agency problem created by integration: the larger internal capital market.

Debt policy is not limited to the amount of leverage; it extends to the design of debt instruments, such as the choice of events of default.⁹¹ Events of default are triggered by violations of covenants. As noted earlier, many covenants are firm wide, like ratio tests and constraints on distributions to shareholders. Other kinds of covenants are asset specific, however, requiring insurance on specific assets and constraining the sale of assets, for example. Even if covenants are asset specific, the consequences of a breach of any covenant impacts the entire firm. For example, default accelerates the maturity of the entire obligation of the firm (and perhaps other obligations that have cross-default clauses). Thus, a covenant that may be appropriate with respect to one group of assets may be undesirable when that asset group is combined with others because of the wider impact of the default sanction. The integration of asset groups may be inefficient because it leaves the firm with a choice between two crude alternatives: either include the asset-specific covenant and bear the firm-wide consequences of violation or exclude the covenant and bear the cost of diluted incentives.

Another important feature in the literature on capital structure is the identity of debtholders, whether they are institutional lenders, trade creditors, or public investors, and agency costs bear sig-

⁹¹ Yet another interesting feature is the convertibility of debt, which may be desirable to mitigate financial agency problems or to mitigate the market discount on equity interests where there is a substantial information asymmetry. Alexander J. Triantis & George G. Triantis, Conversion Rights and the Design of Financial Contracts, 72 Wash. U. L.Q. 1231, 1236–39 (1994).

nificantly on that decision.⁹² For example, the allocation of debt claims among creditors determines the efficiency of monitoring. A firm should structure its debt so as to place monitoring burdens on creditors who enjoy comparative advantages. In their article on organizational law, Hansmann and Kraakman commend asset partitioning between organizations on these grounds.⁹³ They use an example of two ventures: oil refining and hotels. The advantage of placing the two ventures in separate entities is to exploit the monitoring specialties of different creditors. Thus, the lender with expertise in oil refining may lend to that firm without worrying about the profitability of the hotel venture. If the two ventures were combined in a single firm, the lender would be tempted to monitor the hotels as well—a task in which it suffers a comparative disadvantage. Presumably, similar considerations would point to economies in the screening of asset quality by lenders.

A firm's choice between issuing public and private debt may raise similar opportunities to allocate screening and monitoring functions. Yet the value of this advantage is asset contingent: the quality of some assets is more difficult to assess than others and agency problems similarly vary between asset types.⁹⁴ In some cases, the value of a delegated monitor or screening agent, such as a bank, is worth the cost, and in other cases, it is not. In the latter cases, such as where the firm has acquired a track record of performance, the firm is more likely to forego the intermediation of a financial institution and to issue public debt.⁹⁵ If group *A* assets are assets in place that are relatively easy to screen and monitor and group *B* assets are more opaque such that screening and monitoring activity yield significant returns, then distinct firms holding the

⁹² The evolving market for debt has undermined the importance of creditor monitoring for many borrowers. A bank that might have monitored in the past can now syndicate, securitize, or sell the debt to other investors.

⁹³ Hansmann & Kraakman, *supra* note 3, at 425.

⁹⁴ See Raghuram Rajan & Andrew Winton, *Covenants and Collateral as Incentives to Monitor*, 50 *J. Fin.* 1113, 1115 (1995).

⁹⁵ See Douglas W. Diamond, *Financial Intermediation and Delegated Monitoring*, 51 *Rev. Econ. Stud.* 393, 404 (1984). In addition, as a result of a bank's screening advantage, a firm can obtain funding more quickly than in public markets, where debt issuance often also must comply with securities regulation. Stuart Gilson & Jerold Warner, *Private Versus Public Debt: Evidence from Firms that Replace Bank Loans with Junk Bonds* 5 (Oct. 22, 1998) (unpublished working paper, on file with Harvard Business School).

asset groups should have different ratios of private to public debt. If the assets are integrated within a single firm, the ratio should be different yet again. Because debt is firm wide, however, the monitoring incentive of private debtholders is diluted by the presence of the more transparent assets and the ability of the public debtholders to share in the monitoring benefits. Similarly, from a screening perspective, public debtholders may discount debt from a corporation that has assets they find difficult to value, even if private lenders are capable of valuing the debt accurately.⁹⁶

Private debt can be more easily renegotiated. Modifications in the payment terms of public debt must be approved by each debtholder, which is more difficult when debtholders are dispersed.⁹⁷ The cost of this relative inability to restructure public debt varies with the probability of insolvency and the extent to which firm value derives from assets in place as opposed to growth opportunities—or, to use the bankruptcy term, the going concern surplus. If one asset is likely to require renegotiation, perhaps because of volatile market conditions, while a second asset is not, and if there are reasons for the second asset to benefit from the issuance of public debt (such as diversification benefits for lenders), then combining the assets compromises efficiency.

B. Equity Financing

1. Ownership Concentration

Shareholding in a corporation may be more or less dispersed among equity investors. One stockholder may hold sufficient stock so as to control the board of directors. The more stock that person holds, the more she internalizes the fortunes of the firm and, all things equal, the better her decision-making incentives. If a shareholder's investment falls short of control, the advantage of larger stock ownership is that her incentive to monitor management is enhanced because she captures a greater portion of the resulting

⁹⁶ The literature on the efficiency of secured debt proposes that firms use security interests to focus specialized monitoring on asset groups within a firm. We have observed, however, that creating security interests is a less effective partitioning device than creating distinct legal persons, such as corporations. See *supra* text accompanying note 47.

⁹⁷ Trust Indenture Act of 1939, 15 U.S.C. § 77mmm (2000); see also Mark J. Roe, *The Voting Prohibition in Bond Workouts*, 97 *Yale L.J.* 232, 237–38 (1987).

gain. This mitigates the free-riding impediment to shareholder governance when ownership is diffuse.⁹⁸ An offsetting disadvantage of concentrated ownership is that the owner sacrifices some of her ability to diversify nonsystematic risk of firm assets as well as the ability to trade shares in a liquid market.⁹⁹ In addition, as a controlling stockholder holds more votes, she is increasingly insulated from the market for corporate control and enjoys greater influence over the board of directors. Such managerial power could lead the controlling shareholder to pursue private benefits at the expense of overall value. Thus, concentrated ownership is more valuable when the optimal monitoring investment is higher but less valuable when asset values are volatile and managerial entrenchment causes inefficient private-benefit extraction.¹⁰⁰

Various factors may raise the cost of monitoring firm assets, and these factors are predominantly asset specific (or industry specific).¹⁰¹ A firm is costly to monitor when its returns are volatile due to exogenous risks, and it is consequently difficult to unpack managerial performance from exogenous causes of good or bad outcomes.¹⁰² For example, textile companies are easy to monitor, and

⁹⁸ Harold Demsetz & Kenneth Lehn, *The Structure of Corporate Ownership: Causes and Consequences*, 93 *J. Pol. Econ.* 1155, 1156 (1985).

⁹⁹ See *id.* at 1173–76. Another disadvantage is that the blockholder may expropriate wealth from minority shareholders and be less susceptible to the discipline of takeover threats.

¹⁰⁰ Professor Stulz proposes a hump-shaped relationship between concentrated ownership and firm value. At first, firm value rises with concentration because of improved incentives, but it eventually declines as concentration reduces the likelihood of hostile takeover. Rene Stulz, *Managerial control of voting rights, financing policies, and the market for corporate control*, 20 *J. Fin. Econ.* 25 (1988). Others have found that firm values rise, then fall, and then rise again as managerial ownership increases. This reflects a better alignment of incentives at first, then dangers of managerial entrenchment and the diminished probability of a hostile takeover, and then, once entrenchment is complete, better alignment of incentives. See Randall Morck, Andrei Shleifer & Robert Vishny, *Management ownership and market valuation: an empirical analysis*, 20 *J. Fin. Econ.* 293, 294–95 (1988). Still others have found no systematic relationship between concentration and value on the theory that each firm faces pressure to adopt an optimal structure, which varies across firms; a cross-sectional study of firms therefore shows no correlation between value and structure. See Demsetz & Lehn, *supra* note 98, at 1158.

¹⁰¹ See Stuart C. Gilson et al., *Analyst Specialization and Conglomerate Breakups*, 39 *J. Acct. Res.* 565, 569 (2001); David L. Kang & Aage B. Sørensen, *Ownership Organization and Firm Performance*, 25 *Ann. Rev. Soc.* 121, 126 (1999).

¹⁰² See Edward M. Iacobucci & Ralph A. Winter, *Asset Securitization and Asymmetric Information*, 34 *J. Legal Stud.* 161, 178 (2005).

high-tech firms are more difficult. Businesses that trade internationally or have foreign operations are similarly complex.¹⁰³ Shareholder monitoring is also less valuable when other constituencies—such as institutional lenders or potential acquirers in the market for corporate control—monitor to deter poor management. In this vein, one might think of government regulators as alternative monitors. Even if they do not improve management, they constrain managerial discretion and thereby also the potential impact of shareholder monitoring. For this reason, scholars predict that heavily regulated firms—such as telecommunications and utility companies—are more likely to be widely held.¹⁰⁴ The prospect of costly managerial entrenchment also depends on asset type because some assets are more susceptible to inefficient private-benefit extraction, such as self-dealing (for example, natural resources).

The larger the risk associated with an investment in an asset, the less likely there is to be a controlling shareholder of the corporation that owns the asset.¹⁰⁵ Controlling shareholders are more likely to be undiversified than other investors given the relatively large stake that they have in the corporation. This determinant of optimal ownership concentration is asset specific because different assets have different risk profiles. For example, retailers are more likely to have block shareholders at least partly because they have lower firm-specific (nonsystematic) risk.¹⁰⁶

We have demonstrated that different asset groups are likely to yield contrasting prescriptions for equity concentration. Assets that are volatile in value but transparent to monitoring should have dispersed ownership, while assets that are more opaque but less risky should have block stockholders. If these two types of assets are

¹⁰³ See Robert Bushman et al., Financial accounting information, organizational complexity and corporate governance systems, 37 *J. Acct. & Econ.* 167, 175 (2004).

¹⁰⁴ See Demsetz & Lehn, *supra* note 98, at 1161. Professors Boubakri, Cosset, and Guedhami study ownership structure in corporations that have been privatized. Consistent with the notion that regulated firms do not require close monitoring, they find that privatized telecommunications and utility companies have lower levels of ownership concentration than other privatized firms, like financial institutions. Narjess Boubakri et al., Postprivatization corporate governance: The role of ownership structure and investor protection, 76 *J. Fin. Econ.* 369, 388 (2005).

¹⁰⁵ See, e.g., Demsetz & Lehn, *supra* note 98, at 1158 (finding that risk aversion lowers the probability of controlling ownership of large firms).

¹⁰⁶ See Steen Thomsen & Torben Pedersen, Industry and Ownership Structure, 18 *Int'l Rev. L. & Econ.* 385, 396 (1998).

combined in a firm with firm-wide shareholding, concentration would not be tailored to the individual asset groups but to their combination. This might result in an efficiency loss. On the one hand, stock in the integrated firm would be less risky than shares in each of the segregated entities, thereby lowering the cost of blockholding. On the other hand, for reasons discussed above, the incentives of the block shareholder to monitor may be diluted, thereby lowering the benefit of blockholding.

2. *Governance Mechanisms*

In Part I, we identified a number of features of corporate governance that are firm wide, such as the board of directors, the place of incorporation, and the existence of takeover defenses. An optimal configuration of these features may depend on the nature of the assets in question, which in turn implies efficiency costs from the combination of different assets.

The first governance feature for equity that we identified in Part I is the selection of a firm's incorporation venue. This decision is at least partly a function of asset type.¹⁰⁷ Delaware provides firms with expert courts and corporate litigators, but firms that incorporate in Delaware, rather than their home state, face higher incorporation and legal fees.¹⁰⁸ Therefore, Delaware may be a more attractive venue to firms that anticipate a significant probability of high-stakes litigation.¹⁰⁹ The nature of firm assets is one factor determining the prospect of litigation. Volatile assets in particular are more likely to engender litigation than low-risk investments. Valuable

¹⁰⁷ When scholars attempt to examine empirically the factors that influence the decision of firms to locate in Delaware, they control for the corporation's industry as a potential influence. See, e.g., Bebchuk & Cohen, *supra* note 75, at 400; Robert Daines, *The Incorporation Choices of IPO Firms*, 77 N.Y.U. L. Rev. 1559, 1595 (2002). But see Subramanian, *supra* note 75, at 1836 (noting that apart from REITs, which locate in Maryland, "no one has argued that the demand side of the corporate charter market differs meaningfully by industry").

¹⁰⁸ Professors Bebchuk and Cohen, *supra* note 75, at 398, and Daines, *supra* note 107, at 1580–82, suggest that transaction costs associated with out-of-state incorporation may help explain a strong bias toward local incorporation. See also Douglas J. Cumming & Jeffrey G. MacIntosh, *The rationales underlying reincorporation and implications for Canadian corporations*, 22 *Int'l Rev. L. & Econ.* 277, 295 (2002) (finding in a survey of corporate lawyers that the transaction costs of out-of-province incorporation influence domicile choice).

¹⁰⁹ See, e.g., Klausner, *supra* note 60, at 842–48; Romano, *supra* note 60, at 250–51.

assets also increase the risk of litigation by raising the stakes.¹¹⁰ Less valuable firms with relatively low-risk assets, therefore, are less likely to find it cost-effective to pay the higher franchise tax and legal costs associated with recourse to the Delaware courts.

A potentially important determinant of corporate governance is the proportion of inside, outside, and independent directors.¹¹¹ The decision may hinge on a tradeoff between information and agency costs: an agent with superior information is also in the best position to extract private benefits from the relationship and avoid detection. Independent directors may have better incentives and less opportunity to extract rents than inside directors, but they suffer from inferior information. Banks are intermediate cases: their information is better than outsiders, but they may exploit this informational advantage at the cost of outside constituencies.

The informational disadvantage of outside directors depends on the nature of firm assets.¹¹² Insiders may be relatively better suited to oversee investments in growth opportunities, such as in the high-tech industry, than in mature or low-tech operations, like grocery store chains.¹¹³ Even in industries where insiders have less informational advantage, the benefit of outside directors is muted by the presence of alternative disciplining forces, such as the threat of takeovers.¹¹⁴ As noted above, the case for including bank lender

¹¹⁰ Firms with highly valued assets may also be more likely to locate in Delaware to communicate a signal of quality (and the low probability of litigation). Edward M. Iacobucci, *Toward a Signaling Explanation of the Private Choice of Corporate Law*, 6 *Am. L. & Econ. Rev.* 319, 331–33 (2004). Professors Bebchuk and Cohen, *supra* note 75, at 403, and Subramanian, *supra* note 75, at 1836, find that Delaware incorporation is more probable the larger the corporation.

¹¹¹ Empirical scholarship, however, has not found evidence of a relationship between board composition and director independence, on the one hand, and corporate performance, on the other. See, e.g., Benjamin E. Hermalin & Michael S. Weisbach, *Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature*, 9 *Fed. Res. Bank N.Y. Econ. Pol'y Rev.* 7, 8 (2003); Roberta Romano, *Corporate Law and Corporate Governance*, 5 *Indus. & Corp. Change* 277, 287 (1996).

¹¹² See Charu G. Raheja, *Determinants of Board Size and Composition: A Theory of Corporate Boards*, 40 *J. Fin. & Quantitative Analysis* 283, 296 (2005).

¹¹³ Professors Denis and Sarin find that firms with more growth opportunities, which presumably are in more dynamic industries, have a smaller fraction of outside directors. David J. Denis & Atulya Sarin, *Ownership and board structures in publicly traded corporations*, 52 *J. Fin. Econ.* 187, 195 (1999).

¹¹⁴ Professors Mayers, Shivdasani, and Smith find that mutual insurance companies, which are invulnerable to takeovers as an external source of discipline on managers,

representatives on the debtor's board is mixed. Banks have access to privileged information and expertise and can therefore monitor the board better than independent directors, for the benefit of all investors. But they might also exploit their privileged access and influence to skew firm decisions in their favor, against the interests of other constituencies. For example, a bank representative on the board may induce the firm to retain the bank for other services or seek to limit the firm's risk taking, at the expense of equity investors. Accordingly, commentators have predicted that corporations that are large and stable with valuable tangible assets and lower levels of short-term financing are less likely to suffer from shareholder-creditor conflicts, and thus are commensurately more likely to have bankers on their boards.¹¹⁵ Similarly, representatives of contracting partners may be nominated to boards in order to facilitate and secure key relationships.¹¹⁶

An integrated firm may not be able to accommodate the divergent demands of asset types for board structure. Suppose that a board member from a bank is valuable for monitoring one asset group but is costly because the bank may act opportunistically with respect to another asset. In this scenario, combining the assets in a single corporation will cause one or both assets to be governed suboptimally. It may be more efficient for each asset to be governed separately, and the assets must be partitioned between distinct firms to do so.

Finally, different assets may have different optimal degrees of takeover protection.¹¹⁷ Takeover defenses yield three asset-contingent benefits, among others suggested in the literature. First,

have a high proportion of outside directors to serve as checks on management. David Mayers et al., *Board Composition and Corporate Control: Evidence from the Insurance Industry*, 70 *J. Bus.* 33, 35 (1997).

¹¹⁵ Randall S. Kroszner & Philip E. Strahan, *Bankers on boards: monitoring, conflicts of interest, and lender liability*, 62 *J. Fin. Econ.* 415, 417-18 (2001).

¹¹⁶ Professors Miwa and Ramseyer examine the outside directors in Japan and observe that retired government officials are likely to be appointed by construction firms with government contracts and that retired business executives are more likely to receive appointments from construction firms with clients in the private sector. Yoshiro Miwa & J. Mark Ramseyer, *Who Appoints Them, What Do They Do? Evidence on Outside Directors from Japan*, 14 *J. Econ. & Mgmt. Strategy* 299, 301 (2005).

¹¹⁷ But see Bebchuk et al., *supra* note 76, at 895 (finding no significant variation in the incidence of staggered boards across industries).

these defenses may deter inefficient acquisitions motivated by bidders seeking private benefits from control of a firm.¹¹⁸ Thus, an asset that is likely to generate significant private benefits, like a media company, may adopt takeover protection in order to deter acquirers seeking inefficient control rents. Second, defenses may enhance a target's bargaining power, giving it a larger share of the surplus from the transaction.¹¹⁹ The prospective bargaining surplus depends on the nature of the asset and the variety of uses to which it may be put. Third, even if inefficient, takeover defenses may be a lesser evil than alternative measures managers may take to entrench themselves, such as change of control clauses in a firm's commercial contracts.¹²⁰ The disadvantages of takeover defenses, of course, are that they may prevent the transfer of assets to more informed or better managers, and that they insulate management from the discipline of the market for corporate control by removing some of the rents available to raiders.¹²¹ These asset-specific factors may explain, for example, the empirical observation that IPO charters are less likely to contain takeover defenses in industries in which R&D is more significant.¹²²

Combining assets with different demands for takeover protection within a single corporation creates costs. For example, if the management of one asset is usefully policed by the takeover market, while another asset is vulnerable to inefficient bids motivated by the attraction of private benefits of control, then their combination creates costs with respect to the governance of one or both assets. Since hostile takeovers cannot target only specific corporate assets, combining two assets with varying demands for takeover protection is costly.¹²³

¹¹⁸ They also fend off coercive bids, such as two-tier offers. See, e.g., Lucian Bebchuk, *Toward Undistorted Choice and Equal Treatment in Takeovers*, 98 *Harv. L. Rev.* 1695, 1717–22 (1985).

¹¹⁹ See Daines & Klausner, *supra* note 75, at 98. Professors Field and Karpoff do not find that takeover defenses significantly increase premia in control transactions. Laura Casares Field & Jonathan M. Karpoff, *Takeover Defenses of IPO Firms*, 57 *J. Fin.* 1857, 1878 (2002).

¹²⁰ See Arlen & Talley, *supra* note 76, at 617–19.

¹²¹ See, e.g., Easterbrook & Fischel, *supra* note 76, at 220–22.

¹²² Professors Daines and Klausner, *supra* note 75, at 100–06, looked at IPO charters.

¹²³ It is possible that while the private optimality of takeover protection is compromised when assets are combined, social efficiency improves. For example, adopting takeover protection in order to extract rents from acquirers is not obviously socially

III. ECONOMIES OF LEGAL AND ECONOMIC INTEGRATION

Part II demonstrated that many of the optimal financial and governance features of capital structure depend on the relevant assets. In some cases, legal integration creates efficiency losses due to the blending of capital-structure demands. In this Part, we identify two categories of countervailing economies that result from combining asset groups in a single entity under a firm-wide capital structure. The first relates to the information costs incurred by investors and other third parties who deal with any part of the enterprise. The second concerns the savings of contracting costs that accrue when assets are combined under common control. In discussing the latter, we identify a fundamental tension between the goals of economic integration and capital structure.

A. Informational Economies of Legal Integration

As we have observed, contractual rights are predominantly personal and not asset specific. Third parties who contract with a firm are concerned about the firm's solvency and its ability to perform its obligations. Therefore, these parties investigate the assets, the liabilities, and the governance of the entire firm before they contract and may continue to monitor these features through the term of the contract. The risk of the firm's default depends on the competing obligations that it has undertaken to perform for other contract partners as well as the relative priority of such claims against the firm's assets. Consequently, an important part of the screening performed by a prospective investor entails the review of actual and potential contract liabilities of the borrower. Therefore, if such a third party were interested only in contracting with respect to one set of assets (asset group *A*), information costs are lower if that asset group is segregated from other assets (asset group *B*) in a distinct legal entity. If investors in *A* assets are generally different from investors in *B* assets, perhaps because of specialized investment expertise, then segregation lowers investigation and monitor-

useful yet may be privately optimal. A capital-structure compromise resulting from a combination of assets that lessens takeover defenses may be optimal socially even if suboptimal privately.

ing costs.¹²⁴ Similarly, segregation also reduces the monitoring cost incurred by investors to ensure that assets are not improperly re-deployed within internal capital markets.

Whether combining the assets in a single corporation reduces or increases investigation costs depends importantly on the extent to which investors in *A* would also want to invest in *B*. For investors looking to invest in both assets, integrating the assets in a single entity creates information-related economies of scale.¹²⁵ Investors seeking the benefits of diversification, or trade creditors dealing with different business lines, may seek a stake in both assets. In these cases, legal integration may lower aggregate information costs.¹²⁶ Some features of an entity that are relevant to investors are “personal” in the firm-wide sense that we have described, and they do not vary with the size of the entity. For example, investors in the integrated firm would only have to investigate the structure of one board of directors, including the identities of directors and the CEO, one set of takeover defenses, and one place of incorporation.¹²⁷ In addition, only one equity structure would exist, and only one controlling shareholder (or shareholder group) could exist.

In summary, although there may be specialization economies stemming from sorting investors among assets according to their screening expertise, there may be significant informational econo-

¹²⁴ Hansmann and Kraakman suggest that monitoring specialization in part explains the partitioning of assets into separate legal entities; screening specialization may play a similar role. Hansmann and Kraakman, *supra* note 3, at 424.

¹²⁵ Professor Widen observes, with respect to debt investors, that the use of inter-company guarantees allows the lender to rely on consolidated financial statements and consolidated financial tests. Widen, *supra* note 22, at 274. The use of such consolidated reporting reduces the benefit of legal integration by lowering investigation and monitoring costs.

¹²⁶ Widen makes a similar point in comparing asset purchases against stock purchases:

[T]he corporation allows for easy identification of a group of assets under a single name. It functions like the folder on your computer desktop that holds many individual files. . . . [An] asset acquisition, in contrast, requires a reenactment of all the prior ceremonies of transfer and acquisition in order to identify, collect, and segregate those assets under a new name. By analogy to the computer desktop, an asset acquisition requires the transfer of individual files rather than the transfer of a single folder.

Id. at 260. He also observes that stock purchases avoid the need to assign contracts and licenses. *Id.* at 257.

¹²⁷ See *id.* at 261 (emphasizing also the cost of legal opinions as to the authority of the subsidiary to enter into the transaction).

mies from legal integration when the asset groups offer diversification advantages. In these cases, informational efficiency considerations provide a centripetal force for combining assets that resists the centrifugal force provided by tailoring considerations.

B. Contracting Costs and the Benefits of Economic Integration

As we noted in the Introduction, economists have long regarded contracting cost savings as a justification for preferring economic integration over contract.¹²⁸ Currently, the focus of contract theory is on the concern that hold-up strategies deter specific investment in commercial relationships. When parties contract under uncertainty, they usually leave their contracts incomplete; they do not provide for the optimal set of obligations in each possible state of the world. They might complete their contract ex post through renegotiation, but the ex post bargaining process allows one party to hold up the other—that is, to appropriate some of the value created by the other party's specific investment in their relationship. The latter party, of course, anticipates this and is reluctant to make specific investments, thereby diminishing the value of the relationship. This hold-up problem might be avoided either if the contract were replaced by a hierarchical relationship or if the vulnerable party owns the key physical assets to the relationship and thereby improves her share of the bargaining surplus from renegotiation.

When physical and human capital are thus integrated under common ownership, however, the owner may be inclined to seek financial capital from outside investors either because of wealth constraints or risk aversion. This gives rise to the agency problems that have driven most of our discussion of optimal capital structure and that might be mitigated by tailoring through legal partitioning. Legal partitioning, however, can undermine the gains from economic integration, even if the distinct legal entities fall under common control. Conversely, economic integration can undermine legal partitioning.

At first blush, the question of whether two groups of assets should be under common control is distinct from the question of whether they should be held in separate firms; the asset groups might be divided among a group of subsidiaries under common

¹²⁸ See supra note 2 and accompanying text.

control (affiliates in a corporate group). Asset groups *A* and *B* may be held in distinct corporations but under the common control of an owner by virtue of a pyramid or cross-holding structure. Indeed, the partitioning might tailor stockholder concentration. Suppose that *A* is optimally subject to a 50% control block and *B* is optimally held by a 40% block. To achieve this, the controlling party (the “owner”) might hold 80% of the common stock in the parent, which in turn would hold 62.5% of the shares of firm *A* and 50% of firm *B*. This legal partitioning would also exploit market information generated by the separate trading of minority shares in each group of assets. In addition, the composition of debtholders might be tailored, with the debt in *A* being held primarily by banks and the debt in *B* by bondholders under a trust indenture.

Where assets *A* and *B* are held in different legal firms under common control, assets *A* and *B* may be understood to have a common “owner,” but their joint use must be the subject of contract and cannot be determined by fiat. Each party to the contract is a distinct legal entity with its own governance: each has different shareholders and/or creditors and a different board of directors. This resurrects transaction costs of various kinds, particularly the hold-up problems that prompt economic integration in the first place: investors in firm *A* seek to take advantage of specific investments by investors in firm *B*, and vice versa. Therefore, only integration within a single firm-wide capital structure can fully eliminate hold-up and other transaction cost concerns.

Suppose, for example, that asset *A* is held by the parent corporation, and asset *B* is held by a subsidiary in which the parent has a 50% interest. Assets *A* and *B* cannot be used together without a contract between parent and subsidiary. The investors in *A* and *B* have divergent interests in the performance and renegotiation of the contract. Specifically, the parent’s investors would urge their board of directors to act opportunistically in order to realize gains at the expense of the subsidiary’s minority shareholders. Indeed, the parent’s board might even owe a fiduciary duty to do so. The minority shareholders in the subsidiary, however, have legal defenses that they may invoke to protect against such strategies. They can challenge the contract itself as a related-party transaction and thereby require that the contract be authorized by a vote of disinterested shareholders or directors, or even set a condition that a

court must find the contract terms to be fair. In addition, the shareholders of the subsidiary can compel their firm to sue to enforce the contract against the parent.¹²⁹ Indeed, the minority shareholders might threaten to disrupt the contractual relationship by exercising these rights opportunistically and forcing delay as well as costly judicial review. These conflicts of interest, which threaten to lower the combined value of the parent and subsidiary, are absent when assets are legally and economically integrated in a single entity.

The rights of minority shareholders might also undermine another feature of economic integration: the creation of internal markets, such as an internal capital market. We noted earlier that the movement of capital through external markets is impeded by information asymmetries: a firm with private information about a new project faces difficulty in raising funds in external markets. The movement of capital is easier between two firms owned by the same parent because information asymmetries are narrower. The legal obstacles that can disrupt contracting between affiliates also impede capital movements across affiliates, however.¹³⁰ For example, minority shareholders can challenge and delay investments between such affiliates as a related-party transaction. Alternatively, creditors of the investing entity might block the investment as a fraudulent conveyance if the contract fails to provide for a fair market rate of return and the investing affiliate is insolvent or undercapitalized. Thus, partitioning assets into discrete entities raises legal frictions that partly break up internal markets. As suggested earlier, this result may be desirable to eliminate influence costs that arise when subordinate agents seek to skew resource allocation in their favor. It may also overcome agency problems; managers with discretion over internal markets may allocate resources so as to enhance their private benefits rather than overall profitability. In cases where the advantages of internal markets outweigh these

¹²⁹ See *Sinclair Oil Corp. v. Levien*, 280 A.2d 717, 720 (Del. 1971) (requiring corporate parent to demonstrate intrinsic fairness when it induced a partly owned subsidiary not to enforce a contract against a wholly owned subsidiary that was late in its payments and failed to purchase the minimum quantity).

¹³⁰ This argument is advanced and explored in greater detail in Triantis, *supra* note 3, at 1124–33.

agency and influence cost problems, however, legal partitioning frustrates the creation of internal markets.

Wholly owned subsidiaries, of course, avoid the aforementioned obstacles presented by minority shareholders of affiliates. Although the shareholders of the companies may be identical, the creditors are likely to be different. The interests of the creditors of a parent and those of a subsidiary conflict in a similar way as those of differing shareholders in partially owned subsidiaries. This conflict is more pronounced when the firms face significant risks of insolvency. If the parent firm acts opportunistically against the subsidiary in its contractual relations with the subsidiary, it may extract value from the creditors of the subsidiary to the benefit of the shareholders and creditors of the parent. Although the subsidiary's creditors may not have the same governance levers as the parent's shareholders, they can anticipate conflicts in contracts with subsidiaries by circumscribing contracts in covenants and events of default. They may also restrict interaffiliate shifting of capital. Such covenants impose efficiency costs, however, because they are unavoidably overinclusive and thereby impede desirable contracting activity as well.

Attempts to strengthen economic integration ex ante within a corporate group of affiliates face legal obstacles. The scope for avoiding transaction costs within a corporate group is limited by the laws that regulate the legal partitioning of business assets. If a parent attempts to strengthen, ex ante, its control over a subsidiary in order to avoid transaction costs and hold-up activity, it invites judicial veil piercing or enterprise liability under state corporate law or substantive consolidation in bankruptcy.¹³¹ The prospect of such veil piercing, in turn, undermines the tailoring of capital structure to asset groups that are segregated in the different entities. Moreover, the establishment of a corporate group itself restricts the freedom to tailor capital structure. It is difficult, for example, to have one affiliate closely held by a control group and another widely held or, indeed, even to have both firms widely held but still

¹³¹ See supra text accompanying notes 21–26. Widen notes that the veil piercing criteria “could double as a to do list of cost-saving steps to implement as part of internalizing production,” including overlapping officers and directors, centralized finance decisions and cash management, and glossing over formalities associated with internal asset transfers and corporate meetings. Widen, supra note 22, at 258–59.

within a corporate group. Only complete economic and legal segregation can realize the full range of tailoring economies.

In sum, there is a complex tradeoff between economic integration and tailoring considerations. The full benefits of economic integration require complete integration of assets within a single firm, while the full benefits of tailoring require complete economic disintegration. Yet business strategists are not confined to a choice between the two poles of full integration or segregation. Intermediate structures where control boundaries span multiple legal entities may not realize the full benefits of either integration or tailoring, but they may be optimal compromises. The pursuit of tailoring goals thus offers one explanation of why economic integration often in practice does not result from legal integration of assets within a single firm but rather from the establishment of parent-subsidary relationships between distinct legal firms.

The optimal balance between the goals of tailoring and economic integration is often difficult to specify in practice. AT&T's restructuring, described in the Introduction, illustrates this challenge. Recall that AT&T sought to remove its wireless assets to a different legal entity, perhaps to exploit tailoring opportunities. As we have noted, however, tailoring through legal integration undermines economic integration. In structuring the legal segregation, AT&T had a choice between keeping the assets under common control, such as through an equity carve-out, and eliminating all economic integration, such as through a spin-off. A carve-out would have preserved the common control, but the legal entities would have to contract to continue to exploit synergies between the asset groups. Contracting would be costly because of the divergent interests of investors in the new wireless entity and those of the parent. For example, the parent's shareholders would have wanted AT&T to use its control of the subsidiary to take advantage of the subsidiary's minority shareholders and creditors. Conversely, minority shareholders in the wireless subsidiary would have had the right to compel AT&T to justify the contract terms under an entire fairness standard and perhaps even to compel the subsidiary corporation to realize its opportunities to act strategically against its parent.

Spin-offs allow for more freedom in tailoring capital structure than equity carve-outs. Of course, they raise contracting costs even

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further, though, because each entity is under separate control.¹³² AT&T opted to spin off its wireless assets in order to tailor capital structure. For example, as noted in the Introduction, AT&T Wireless Services had a much lower debt-equity ratio (0.76) than AT&T (2.04). The spin-off broke up the economic integration of the wireline and wireless assets, however, and the separate firms were compelled to rely on costly contracting to exploit complementarities in their assets. Opting for a spin-off, AT&T presumably perceived the benefits of tailoring to exceed the costs of contracting.¹³³

IV. LEGAL INTEGRATION AND SEGREGATION IN PRACTICE

In the foregoing discussion, we have established that (a) the law requires a corporation to have a capital structure that is firm wide in most respects and (b) many features of optimal capital structure are contingent on the nature of the firm's assets. To tailor capital structure to assets, one must divide different asset groups into distinct legal entities. On the one hand, combining different types of assets in a single firm imposes a loss, in some cases, that is caused by deviating from the tailored features associated with one or more asset types. On the other hand, combining assets can reinforce the benefits of economic integration and might yield informational economies. In this Part, we briefly outline a handful of preliminary implications of these observations in the context of common corporate restructuring transactions: combinations, such as mergers and acquisitions, and asset divestitures, such as spin-offs, carve-outs and securitizations.

A. Combinations: Mergers and Acquisitions

There is a large body of literature concerning the merits of conglomerates that highlights the contract and internal market concerns summarized in the preceding Section. Our theory of capital structure supplements this literature with a distinct set of considerations, and specific predictions may be developed on the basis of the general observations summarized above. Consider first the fac-

¹³² In addition, a carve-out undermines capital-structure tailoring. For example, if having each asset governed by a widely held corporate structure would create tailoring gains, an arm's length relationship would be required.

¹³³ See supra notes 10–13.

tors affecting the combination of assets within a single legal entity through merger or acquisition. For example, holding all other things equal, we would predict that the degree of ownership concentration and the debt-equity ratios of businesses, prior to their combination into a single conglomerate, would be similar. We would hypothesize that businesses with a large number of independent directors are more likely to combine with other businesses with a similarly significant proportion of independent directors. To the extent that they do not, we predict that this is because one or both of the lines of business do not suffer significantly from adopting some weighted average of the distinct optimal capital structures. A proxy for the cost of deviation may be reflected in the industry variance in capital structure. In an industry where a feature of capital structure varies widely, a natural inference would be that capital-structure tailoring is not particularly important. This, in turn, suggests that the combination of two assets with different existing capital structures from industries with highly variable capital structures is not particularly costly.

There is an exception to the foregoing predictions about conglomerate acquisitions. While we have generally worked with an assumption that firms optimize capital-structure choices, it could be in reality that an acquisition is motivated by the gains that result from changing the capital structure of one of the firms, a change that incumbent management is unwilling to make. For example, leveraged buyouts are often understood to be motivated by the disciplinary efficiencies that result from changing the target's capital structure to a highly levered one.¹³⁴ If the acquisition is motivated by an inefficient existing capital structure, it is understandable that the capital structures of the acquirer and the target would be different. Thus, hostile acquisitions, which are more likely to involve the ouster of incumbent management who are reluctant to reconfigure capital structure, are more likely to involve firms with disparate capital structure.

It is interesting to contrast our predictions with those of existing conglomerate theory. The theory that conglomerate structures result from synergies between divisions generates empirical predic-

¹³⁴ See, e.g., Michael C. Jensen, Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, 76 *Am. Econ. Rev.* 323, 325 (1986).

tions that contrast with ours. For the synergy theory to hold, one would expect that the different lines of business within a conglomerate will often be related to one another in significant ways. Our theory suggests that even related businesses may not be integrated within a single firm if their capital-structure demands diverge sufficiently. Conversely, assets with very similar capital-structure demands might be combined even though they have no operational synergies or relationship with each other, simply to exploit informational economies from a single capital structure. In this sense, the capital-structure theory supports the diversification motivation for conglomerates because these informational economies are lost when an investor diversifies by buying securities in distinct entities.

B. Divestitures: Spin-Offs, Carve-Outs, and Securitizations

We use the term divestiture to describe the opposite of combinations: in a divestiture, a firm transfers its rights in an asset group to a distinct entity. Divestitures come in different forms, including spin-offs, equity carve-outs, and securitizations. The capital-structure theory of firm boundaries reveals new explanations for these reorganizations. A basic lesson of the theory is that distinct legal entities will separate asset groups in order to tailor capital structure. One well-known divestiture transaction is securitization, or structured finance, under which the firm sells a group of assets to a distinct corporation or trust—known as the special purpose entity (“SPE”)—that is created solely for the purpose of holding these assets and is financed by selling new securities.¹³⁵ Although the assets are commonly receivables, other types of cash flows or even hard assets have been securitized. Once receivables are earned by performance, they become a passive investment in a continuing stream of payoffs. As noted earlier, finance theory prefers debt financing to remove the cash flow from the discretion of managers. Securitization places the receivables in a distinct entity

¹³⁵ See Iacobucci & Winter, *supra* note 102, at 162; LoPucki, *supra* note 21, at 25; Steven L. Schwarcz, *The Alchemy of Asset Securitization*, 1 *Stan. J.L. Bus. & Fin.* 133, 152 (1994).

that can in effect be more highly leveraged than the originating firm that holds the operating assets.¹³⁶

We discussed earlier that partitioning asset groups into distinct entities, by any of the means mentioned above, might harness the discrete market valuation of each group (for example, by securities analysts). Partitioning is necessary to this objective because the law does not permit the issuance of debt or equity securities against only a subset of a firm's assets. We mention here two advantages that might arise from the separate market valuation of assets. First, some commentators argue that difficulties in valuing some assets within a firm spill over and discount the valuation even of other assets within the same firm. If that is the case, then partitioning the assets into separate firms leaves the opaque asset undervalued (because of an information asymmetry) but allows the market to value separately the more transparent assets. Second, the separate market valuation improves the effectiveness of equity-based incentive compensation to managers or other employees. Suppose that assets *A* and *B* are combined in a single firm. If the manager of asset *A* holds an equity-based compensation package, she internalizes fluctuations in the value of *B*, over which she has little, if any, control. The manager is subject to exogenous risks affecting the value of *B*, as well as the risk of a careless performance by her colleague who manages *B*. The firm may link the manager's compensation to the profitability of asset *A*. This measure, however, would depend on its internal accounting process, which carries its own uncertainty and potential for influence costs. In light of the obstacles to issuing asset-specific securities within a firm, the business might instead place *A* and *B* in distinct entities to allow the market to value *A* separately. An ancillary benefit of partitioning in this example is that it might also improve reputational sanctions and the discipline of the market for corporate control.

Securitization transactions present an important instance of the foregoing phenomenon because the partitioned assets typically require relatively little management and are subject to exogenous

¹³⁶ The sale of the receivables, however, leaves cash in the hands of the managers of the originator, raising similar concerns about the misuse of such cash. Professors Iacobucci and Winter argue, however, that securitization creates economies of scale in monitoring the cash: its use can be evaluated in a single capital budget, rather than a series of smaller budgets. See Iacobucci & Winter, *supra* note 102, at 179–80.

risks.¹³⁷ Suppose assets *A* and *B* are the operating assets and the receivables, respectively. The manager of the operational assets bears the exogenous risk of fluctuations in the recovery of receivables if she receives equity-based compensation in the integrated firm. The value of earned receivables may be largely unaffected by managerial effort, and securitizing them and selling them to third parties removes their influence on the value of the equity in asset *A*.

CONCLUSION

Economic analysis dominates corporate and commercial law scholarship. It is responsible for introducing the contractual paradigm for corporations (the “nexus of contracts”). More recently, it has added the important feature of economic integration: a firm unites groups of assets under common control. This paper emphasizes that a corporation is more than a nexus of contracts or group of assets; it has the legal rights and obligations of a person. This feature is the product of statutory and common law, and it is a core concern of corporate practice. This paper presents a new theory for why legal partitioning is significant to corporate structure: it tailors capital structure to asset types, as prescribed by finance theory. As such, it generates valuable insights for financial economists as well as for legal scholars.

We leave two important and complicated tasks to future research. First, the AT&T case is only one of a number of instances that are explained by our theory. The degree to which capital-structure tailoring motivates combinations and divestitures remains to be tested empirically across a much larger number of restructuring transactions.¹³⁸ Second, we will explore further the important

¹³⁷ *Id.* at 172.

¹³⁸ Another prominent example of a restructuring that resulted in divergent capital structures relating to two formerly integrated assets is the 1993 Marriott restructuring. In 1993, Marriott Corp. spun off equity in its hotel management business to its shareholders, thus separating the management assets and the real estate assets that Marriott Corp. had previously held. This spin-off resulted in much higher leverage for the real estate assets than the management assets: the combined corporation had a debt-equity ratio of 7.2, while the final restructuring plan contemplated that the management business would have a debt-equity ratio of 5.9 and the real estate assets a ratio of 9.0. See Robert Parrino, Spinoffs and wealth transfers: The Marriott case, 43 *J. Fin. Econ.* 241, 252 (1997). While these facts alone are consistent with our understanding

role played by the corporate law doctrine of limited liability in facilitating the tailoring efficiencies we describe in this paper.

Finally, we note that statutory business trusts appear to relax firm-wide constraints and allow for flexible, asset-specific (in rem) financing.¹³⁹ These trusts thereby provide a useful contrast to corporations in this respect, both from a theoretical and an empirical perspective.

of spin-offs, Professor Parrino finds that the restructuring resulted in a value-destroying wealth transfer from debt to equity. *Id.* at 253. That is, rather than addressing agency costs, the restructuring may have reflected them.

¹³⁹ See, for example, Delaware's treatment of statutory trusts. Del. Code Ann. tit. 12, § 3804(a) (Supp. 2004) (stating that plaintiffs suing a trust may be limited to the assets of specific divisions (series) of the trust if the governing instrument of the trust so provides and if separate divisional accounts are kept).