

UNIVERSITY OF MICHIGAN

VERIFICATION INSTITUTIONS IN FINANCING TRANSACTIONS

Ronald J. Mann

UNIVERSITY OF MICHIGAN
LAW SCHOOL

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INTRODUCTION

One of the most common problems in commercial transactions is the resolution of information asymmetries, situations in which one party to the transaction knows more about a relevant fact than the other party.¹ The natural response of the disadvantaged party is to attempt to investigate the transaction for itself—to investigate the matter with “due diligence”—but often such an investigation will be expensive and, however diligently undertaken, leave the truth of the matter uncertain.² A law-centered approach to the problem would call for the development of warranties and covenants that the party with superior information would give to the party with inferior information. Such an approach would rely on lawsuits to prevent and redress any breach of the applicable warranties and covenants.

For numerous reasons, however, the formal legal system cannot provide a satisfactory solution to the problem. For one thing, formal legal rules cannot show the context sensitivity necessary to obtain the correct set of assurances from parties with superior information. Thus, formal legal rules by themselves often provide assurances that are either excessive or inadequate in the circumstances of a particular transaction. Similarly, the costs of transacting often make it impractical for the parties to develop those assurances on their own on a case-by-case basis.³ Finally, even if legislators or contracting parties could devise appropriate assurances, the cost and uncertainty of enforcing those assurances through legal processes is prohibitive. Accordingly, contracting parties often can provide more effective solutions to information problems through the use of privately instituted sanctions that operate either partially or wholly apart from the legal system.⁴

1. See, e.g., Ronald J. Gilson & Reinier H. Kraakman, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549, 595 n.134 (1984) (“The difficulty of assuring oneself of the value of purchased information has been recognized for some time.”).

2. See, e.g., GEORGE W. FENN ET AL., FINANCIAL MARKETS, INSTITUTIONS & INSTRUMENTS: THE PRIVATE EQUITY MARKET: AN OVERVIEW 43-44 (1998) (discussing the role of pre-investment due diligence in resolving informational sorting problems).

3. This could be true either because the situation is too complicated to justify the cost of agreeing upon dispositions of all the possible outcomes or because the decisions in question (such as the future effort of managers) are not verifiable to third parties such as courts. For a thorough analysis, see Sanford J. Grossman & Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 J. POL. ECON. 691, 698 (1986).

4. See, e.g., Lisa Bernstein, *Merchant Law in a Merchant Court: Rethinking the Code’s Search for Immanent Business Norms*, 144 U. PA. L. REV. 1765, 1793-94 (1996) (explaining why contracting parties might make extralegal commitments to respond to the possibility of untrustworthy behavior by contract partners); Stephen Choi, *Market Lessons for Gatekeepers*, 92 NW. U. L. REV. 916, 920-921 (1998) (noting that private institutions for solving information problems are useful when legal remedies are ineffective); Robert C. Ellickson, *A Critique of Economic and Sociological Theories of Social Control*, 16 J. LEGAL STUD. 67, 81-90 (1987) (criticizing “legal centralism” and law-and-economics scholars generally because they “have underappreciated the role that nonlegal systems play in achieving social order”); Lewis A. Kornhauser, *Reliance, Reputation, and Breach of Contract*, 26 J.L. & ECON. 691, 703 (1983) (presenting a model in which “reputation will substitute perfectly for a damage rule”); Stewart Macaulay, *Non-Contractual Relations in Business: A Preliminary Study*, 28 AM. SOC. REV. 55 (1963); Eric Posner, *The Regulation of Groups: The Influence of Legal and Nonlegal Sanctions on Collective Action*, 63 U. CHI. L. REV. 133, 144-65 (1996) (discussing the interaction between the nonlegal sanctions available to private groups and the legal sanctions imposed by the state); Jane Kaufman Winn, *Relational Practices and the Marginalization of Law:*

In that vein, this article works within the tradition of institutional economics associated with Douglass North. The article starts from the premise that the success and failure of parties in conducting value-increasing transactions cannot be explained solely by reference to the mechanics of supply and demand curves. A crucial part of any account of transactions must analyze the institutional background against which individual parties contract, because the success and failure of transacting parties often depends on the effectiveness of those institutions.⁵ I have published a series of articles in the last few years that present a substantial amount of empirical evidence drawn from interviews and case studies about the transacting practices that businesses follow in a variety of commercial contexts involving some form of credit or payment.⁶ Each of those articles has attempted to provide a localized theoretical explanation for the behavior that it describes, much of which consists of sophisticated mechanisms for resolving problems of information asymmetry. This article tries to build upon those prior articles by providing a unified theoretical framework for those mechanisms. Specifically, this article contends that all of those mechanisms (as well as the law-centered mechanisms described above) can be analyzed most clearly by reference to a single theme, the bond-like transaction described in Oliver Williamson's seminal paper on the use of hostages in relational contracting.⁷

The article proceeds in three steps. The first part provides a simple and relatively abstract model of the hostage or bonding process that I use to analyze the institutions and mechanisms discussed later in the article. Part I emphasizes how a one-sided punitive bond arrangement provides a useful solution to the problem of information asymmetry by enhancing the cost of a breach while minimizing the bond-holder's incentive for opportunism. It also highlights a variety of practical problems that limit the circumstances in which that arrangement can be effective.

The second and third parts of the article are more concrete. Part II uses the model set out in Part I to consider the extent to which the most common devices for resolving information asymmetries in financing transactions (collateral, relational contracting, and reputational bonds) in fact rely on the incentives created by the bonding mechanism. The description emphasizes the apparent importance of punitive bonding mechanisms to all three devices, but uses the model to show the limited commercial contexts in which those mechanisms are effective.

Informal Financial Practices of Small Businesses in Taiwan, 28 LAW & SOC'Y REV. 193, 196-97 (1994) (discussing the marginalization of law in the Taiwanese business system).

5. See generally DOUGLASS C. NORTH, INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE (1990) (providing an overview of Douglass North's approach to economic analysis).

6. See Ronald J. Mann, *Explaining the Pattern of Secured Credit*, 110 HARV. L. REV. 625, 626 (1997) [hereinafter Mann, *The Pattern of Secured Credit*]; Ronald J. Mann, *The First Shall Be Last: A Contextual Argument for Abandoning Temporal Rules of Lien Priority*, 75 TEX. L. REV. 11, 27-31 (1996) [hereinafter Mann, *Temporal Priority*]; Ronald J. Mann, *The Role of Secured Credit in Small-Business Lending*, 86 GEO. L.J. 1, 30-34 (1997) [hereinafter Mann, *Small-Business Lending*]; Ronald J. Mann, *Searching for Negotiability in Payment and Credit Systems*, 44 UCLA L. REV. 951, 984-85 (1997) [hereinafter Mann, *Searching for Negotiability*]; Ronald J. Mann, *Strategy and Force in the Liquidation of Secured Debt*, 96 MICH. L. REV. 159, 221-26 (1997) [hereinafter Mann, *Strategy and Force*]; see also RONALD J. MANN, PAYMENT SYSTEMS AND OTHER FINANCIAL TRANSACTIONS (1999) (textbook presenting the results of a series of interviews and site visits regarding payment systems, credit systems, and liquidity systems).

7. See Oliver E. Williamson, *Credible Commitments: Using Hostages To Support Exchange*, 73 AM. ECON. REV. 519 (1983) (explaining how relational contracts rely on hostage-like, transaction-specific assets).

The third part extends that typology to situations in which the two transacting parties rely on a third party to provide verification of the contested assertions. I distinguish two separate ways in which the third party can verify the contested assertions: by a financial commitment of the third party (such as a guaranty), or by an independent assertion of the third party. That third party's assertion, in turn, could be obtained through something as simple as word-of-mouth communication, or through a more formal arrangement involving an information merchant or an information intermediary. Again, the model illuminates the reasons that those mechanisms are effective (in some contexts) and explains the problems that limit their effectiveness in other contexts.

The result is a rich picture of a variety of elegant devices for resolving information asymmetry, many of them functioning without substantial aid from public enforcement authorities. The ability of private parties to design such complex and specifically tailored solutions to their problems should give pause to those who aim to solve all the problems of commercial transactions by enacting ever more comprehensive statutory rules to govern those transactions. As suggested above by the analogy to the use of hostages, the devices that I discuss often contemplate the starkly brutal exercise of leverage by one party against another, but this article shows that such devices nevertheless can reflect rational choices by the parties that select them to precommit to a specified course of conduct. Thus, any effort to regulate or prohibit those devices should be grounded in some other policy: either a concern that the parties did not understand the devices (imperfect information) or a concern that the devices are fundamentally unacceptable to society as a whole—even if parties accept them voluntarily (unconscionability). The raw exercise of power might be disquieting, but, standing alone, that is not sufficient reason to prohibit it.

I. THE BASIC STRUCTURE OF INSTITUTIONS FOR VERIFYING INFORMATION

The main purpose of this article is to develop a framework for understanding the mechanisms that the parties to financing transactions use to resolve information asymmetries. Because the discussion that follows addresses a wide variety of transactions, it is important at the outset to describe the types of information problems that I analyze and to explain a few standard terms that I use throughout the article. The discussion in this part is necessarily abstract, even vague, because its purpose is to provide a general overview of the framework applied in the latter parts of the article. Thus, if the abstract descriptions in this part seem unsatisfying in their generality, the problem should be remedied by the more specific, empirically grounded discussions in the latter parts of the article.

A. THE PROBLEM OF INFORMATION ASYMMETRY

Information asymmetries arise whenever one party to a transaction possesses superior information. To use a simple example, I might be thinking about loaning you money, but I am troubled by your superior knowledge of your reliability (or unreliability) as a borrower. Your self-interest makes it difficult for us to agree upon the terms of such a transaction because—absent some device for minimizing the effects of that information problem—I must account for

the possibility that you are a highly unreliable borrower, which would lead me to propose onerous lending conditions. Conversely, you might know yourself to be a highly reliable borrower, most unlikely to default, and thus think it appropriate to borrow money on highly favorable terms.

Although my analysis aims to cover a broad range of transactions, my focus (like the focus of most of my prior work) is on transactions that involve the financing of business operations. Accordingly, for convenience I refer throughout the article to the parties struggling with an information asymmetry by terms that reflect that basic transaction. Thus, I generally refer to the party with inferior information—the party trying to evaluate the information—as the “lender” and the party with superior information—the party seeking to persuade the lender that it is reliable—as the “borrower.”⁸

Before moving on to discuss the devices that businesses use to resolve information asymmetries, it is important to distinguish two distinct contexts in which the borrower can have superior knowledge. One context involves assertions of historical facts as to which the borrower is more likely to have accurate knowledge than the lender: Do this company’s financial statement and prospectus accurately present the current state of its operations? Was this building constructed in a first-class manner? Is this person authorized to bind the company to repay the proposed loan? For convenience, I refer to that type of information as a fact or a factual assertion. A second context involves information about the borrower’s future conduct. The accuracy of any assertion about such conduct cannot be known presently by either party, although the eventual accuracy might be wholly or partially within the control of the borrower. That type of information is particularly important—indeed, central—to credit transactions or other long-term relational arrangements: Will you repay a loan in a timely manner as the payments come due in the future? Will you shirk in your future performance? For convenience, I refer to that type of information as a forecast.⁹

Those two types of information are not entirely distinct. Information about historical facts often sheds light on the plausibility of forecasts about future conduct. For example, information about the current financial position and past repayment practices of a borrower may be quite predictive (in the statistical sense) of the likelihood that the borrower will repay a proposed loan.¹⁰ But the distinction is important because forecasts raise a moral hazard

8. It is possible that the lender occasionally will have superior information and the borrower will have inferior information, perhaps because the borrower is unduly optimistic and the lender has superior expertise at evaluating the project in question. My impression, however, is that such an occurrence is so uncommon that it does not form an organizing feature of the transactions in question.

9. For a similar dichotomy between facts and forecasts, see Gilson & Kraakman, *supra* note 1, at 561-63. The distinction is also similar to the line that Alan Schwartz draws between contractible and noncontractible information. See Alan Schwartz, *Relational Contracts in the Courts: An Analysis of Incomplete Agreements and Judicial Strategies*, 21 J. LEGAL STUD. 271, 280 (1992); see also Grossman & Hart, *supra* note 3, at 698-99, 710-13 (earlier use of a similar distinction).

10. See, e.g., Mann, *Small-Business Lending*, *supra* note 6, at 30-34 (discussing how credit-scoring systems rely on a small number of facts to identify borrowers likely to repay proposed loans).

problem¹¹ about future conduct that is not present in the assertion context. Nevertheless, because the borrower's relation to the two types of information is quite different, transactional arrangements that resolve those problems necessarily function differently in some ways. With respect to assertions, the effect of the arrangement is contemporaneous with the assertion; it enhances the incentive of the borrower to make an assertion that is truthful at that moment. With respect to forecasts, on the other hand, the arrangement has a continuous effect, enhancing the incentive of the borrower at each moment during the term of the arrangement (until the funds are entirely repaid) to act in a way that minimizes the risk that the borrower will not be able to perform as agreed. The point of this article, however, is that notwithstanding those differences, parties seem to use structurally similar devices to respond to the two kinds of problems. Hence, a joint analysis of the two kinds of problems produces a more thorough understanding of those devices.

B. SOLVING THE PROBLEM: VERIFYING INFORMATION WITH BONDS

One important goal of this article is to consider the extent to which the traditional mechanisms with which businesses respond to information asymmetries can be explained as relying on the classic hostage or bonding arrangement. Of course, businesses sometimes solve informational asymmetries by using related devices that operate *without* the posting of a bond.¹² In the financing context, however, parties generally respond to such asymmetries with a range of more or less successful bonding devices.¹³

The basic structure of a bonding device is simple. First, the borrower posts some sort of asset that functions as a hostage, or bond,¹⁴ to verify the truth of the information that the

11. For the benefit of readers unfamiliar with the term, "moral hazard" describes the problem that arises when one party has an excessive incentive to engage in risky activity because another party will bear any loss from that activity.

12. For example, it is easy to identify simple screening devices in contexts that involve factual assertions. Consider the use of a life-insurance policy that pays nothing if the insured dies within three years of issuance: that term functions to screen out potential insureds that believe that they have an elevated chance of death in the ensuing three years. It is beyond the scope of this article to explain why businesses do not always use bonding devices in those other contexts. As the method of explication developed here suggests, any explanation of that problem would require a detailed understanding of the institutional dynamics of those contexts. I limit this article to the context in which I feel capable of providing that understanding.

13. This article's focus on the dynamics that allow the bonding device to operate successfully distinguishes it from Stephen Choi's recent article on gatekeepers. *See* Choi, *supra* note 4. His article provides a detailed analysis of how imperfect competition limits the potential for an optimal gatekeeper regime. In contrast to this article, Professor Choi's article for the most part implicitly accepts the theoretical efficacy of reputational bonding and focuses instead on the difficulties of ensuring that such a system works well in an imperfectly competitive certification market. *See id.* at 939-49 (discussing the problems with the certification market and defects in traditional methods of legal intervention in that market); *see also id.* at 949-62 (analyzing several possible legal responses to defects in the certification market).

14. The hostage metaphor is, of course, Oliver Williamson's. *See* Williamson, *supra* note 7, at 519-20. In this article, I use the "bond" metaphor instead, largely because of concerns about the inaccurate implications of references to the hostage transaction. As my colleague Bill Miller has pointed out to me, the voluntarily given hostage traditionally agreed to provide active service to the party holding the hostage; that is quite different from the

borrower asserts.¹⁵ Then, if the information turns out to be false—if the borrower fails to make a promised payment, if the borrower's net worth falls below a stated level, if the building was not constructed as represented—the lender is entitled to execute on the bond.¹⁶

It is useful to view the bonding mechanism as providing an additional piece of information to the lender about the information that the borrower has asserted directly. That new piece of information (which I call second-order information) can help the lender determine the reliability of the borrower's underlying assertion (the first-order information). If the second-order information is generated in a way that makes it more reliable than the first-order information, then the second-order information can enhance the borrower's ability to prove the reliability of its assertions to the lender.

Of course, second-order information is not more reliable simply because it comes from a source other than the assertion of the borrower. Thus, that information does not necessarily solve the lender's problem. Rather, it moves the problem to another level—at which the lender must evaluate the second-order information. The process can be repeated iteratively until some external circumstance (other than the assertion of information itself) provides an independent indication of the reliability of one of the levels of information.¹⁷

As the various examples in the later parts of this article explain, the second-order information provided by the bond often is more reliable than the first-order information directly asserted by the borrower because of the consequence of falsity of the second-order information: the borrower must forfeit the bond. The bond imposes a penalty on the borrower—something that costs the borrower an amount greater than the amount it stands to gain from falsehood—to ensure that the borrower has an adequate motivation to tell the truth.

It is important to examine the incentives that determine the size and nature of the bond. Ideally, the parties would design a bond of asymmetric value, so that action by the lender to execute on the bond would impose a very large loss upon the borrower, but produce only a small gain for the lender. To understand that point, consider the analysis that rational parties would use in designing such a transaction.

First, the benefits of the bonding mechanism increase with the loss that the borrower would face upon forfeiture of the bond—the greater the loss, the less likely the borrower will be to provide false information. That should be true whether the information in question involves factual assertions or forecasts. If it involves factual assertions, the prospect of a future loss should the falsehood of those assertions be discovered motivates the borrower to provide truthful assertions. If the information involves forecasts of events within the borrower's control, the

transactions I discuss, in which any benefit from use of the bond ordinarily accrues for the benefit of the party posting the bond, not the party holding it.

15. For a brief earlier effort to generalize Williamson's analysis, see David Charny, *Nonlegal Sanctions in Commercial Relationships*, 104 HARV. L. REV. 373, 392-99 (1990) (suggesting that bond-like institutions can be used to resolve problems of information asymmetry).

16. In most contexts, the parties would agree that the lender could execute on the bond whenever the assertion or forecast was false, without regard to the state of mind of the borrower in making the false statement. Thus, for example, a borrower could not prevent foreclosure for failure to pay by claiming that he in fact was truthful at the time he granted the bond to the lender because at the time his actual intent was that he would perform as promised.

17. For an understanding for how that works in practice, see, *e.g.*, *infra* Part IIIA (discussing the circumstances in which a guarantor's assertion might be more reliable than a borrower's).

continuing threat of a loss for actions inconsistent with the forecasts motivates the borrower to act in the future so as to cause the forecasts to come true. Thus, in either case, an increase in the loss that the borrower can suffer should increase the verificatory power of the bond.

Unfortunately, the costs of the bonding mechanism also are likely to increase with the value of the bond. That is true for two general reasons. First, the error costs of any such mechanism increase with the size of the bond, because erroneous execution on the bond increases the size of the loss from an error, even if the error is innocent.¹⁸ More important, however, an increase in the benefit that the lender receives from erroneous execution on the bond increases the costs of opportunism. The greater the profit to the lender from forfeiture of the bond, the greater the incentive for the lender to execute on the bond opportunistically, even if the assertions of the borrower turn out to be true.¹⁹ Both of those problems can be mitigated to some extent by practices that enhance the objectivity of the circumstances that justify the lender in executing on the bond.²⁰

Another way to lower the expected costs of opportunism is to devise a mechanism in which the benefits to the lender of retaining the bond are substantially less than the costs to the borrower of forfeiture of the bond. That can be accomplished in two ways. The first, which involves an asymmetrically punitive bond, is well known. In that arrangement, the borrower posts a bond that has some idiosyncratic value to the borrower, so that the asset is significantly more valuable to the borrower than it is to the lender.²¹ The second—what I call the interlocking-bond arrangement—is not so well recognized. In that arrangement, the process for forfeiting the bonds is structured so that the lender effectively posts *its* reputation as a bond against improper execution of the bond posted by the borrower; the result is an interlocking verification arrangement, with each party posting a bond to the other.²² In that case, the great

18. See Alan Schwartz, *The Myth That Promisees Prefer Supracompensatory Remedies: An Analysis of Contracting for Damage Measures*, 100 YALE L.J. 369, 375 (1990) (explaining that the costs of unprofitable performance increase with an increase in the size of the damage award).

19. See Charny, *supra* note 15, at 422 (criticizing the *in terrorem* effect that can come from opportunistic exercise of nonlegal sanctions). As Omri Ben-Shahar points out to me, the possibility of renegotiation between the borrower and the lender also limits the potential for opportunistic execution, but given the unpredictability of the results of that renegotiation, it is unlikely that it will remove entirely the *ex ante* perception of the possibility of opportunistic execution.

20. See, e.g., *infra* note 122 (discussing the types of defaults on which lenders rely to justify serious remedial actions in commercial lending transactions).

21. In the hostage literature, that institution is known as the “ugly princess” (in Oliver Williamson’s terminology) or “puny prince” (in Bob Scott’s terminology). See Robert E. Scott, *A Relational Theory of Secured Financing*, 86 COLUM. L. REV. 901, 930 (1986). For one example, see *infra* note 59 (discussing a pledge of stock necessary for the borrower to control the corporation in question).

22. See, e.g., *infra* text accompanying notes 97-100 (discussing interlocking-bond arrangements in the venture-capital context). Earlier writers have recognized the use of a reputational bond to limit the likelihood that a lender will engage in opportunistic conduct. See, e.g., Niloy Bose & Richard Cothren, *Asymmetric Information and Loan Contracts in a Neoclassical Growth Model*, 29 J. MONEY, CREDIT & BANKING 423, 429-30 (1997); Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*, 65 MINN. L. REV. 521, 527 (1981) (referring to reputation as the main constraint on opportunistic behavior); Paul Gompers & Josh Lerner, *Reputation and Conflict of Interest in the Issuance of Public Securities: Evidence from Venture Capital* 30-31 (Mar. 1997) (unpublished manuscript, on file with author) (arguing that reputation constrains venture capitalists from large sales of their interests when companies in their portfolios issue securities). They have not, however, noticed the general success of the parallel

harms that the borrower might suffer from forfeiture of its reputational bond are offset by the harms the lender might suffer if it took the borrower's bond improperly. That arrangement substantially mitigates the lender's incentive to act opportunistically.

One important implication of the foregoing is that the amount of the ideal bond (at least from the perspective of the parties to the transaction) often would be punitive, not merely compensatory—that is, the loss to the borrower would exceed the total anticipated gain from falsehood divided by the anticipated probability of the discovery of the falsehood.²³ The reason is that, in the context of the bonding mechanism, the size of the benefit from increasing the amount of the bond—enhancement of the *ex ante* perception that the borrower will suffer a harm from falsehood—is logically unrelated to the size of the *ex post* benefit that the borrower obtains from falsehood—some unrelated benefit from diversion of funds or from some risky activity that led to the lack of funds.²⁴

To understand that point, consider the approach parties would follow if they attempted to design a perfectly compensatory bond to prevent the borrower from acting inconsistently with a forecast that the borrower would repay a loan. The parties would want the bond to be at least large enough that the gain to the borrower from not repaying the loan would be smaller than the loss to the borrower from forfeiture of the bond.²⁵ Approaching that problem *ex ante*, the parties would recognize the likelihood that the gains to the borrower from falsehood in the future might exceed the amount of the funds not paid over to the lender. Among other things, that could be true because of a liquidity problem that limited the borrower's ability to obtain funds elsewhere,

interlocking arrangement that I describe here. For a rare exception, see D. Gordon Smith, *Venture Capital Contracting in the Information Age*, 2 J. SMALL & EMERGING BUS. L. 133, 138-40 (1998) (analyzing venture-capital transactions as a cooperative relationship involving devices to protect against agency costs on both sides).

23. I do not consider the external effects on third parties and thus make no claims about the efficiency of the institutions that I discuss. My only goal is to understand why rational parties might choose the devices I observe in commerce.

24. I part ways at this point from David Charny, who criticizes reputational sanctions because of the difficulty in setting the sanctions at a precisely compensatory level. See Charny, *supra* note 15, at 420. I do not think that my analysis is inconsistent with Alan Schwartz's prominent rejection of the rationality of punitive remedies. His analysis is limited by its terms to cases in which the parties share the same estimate of the probability of breach. See Schwartz, *supra* note 18, at 393-94. I consider only cases in which one party (the lender) has reason to believe that the breach estimate of the other party (the borrower) is different from its own. In those cases, I believe that Schwartz would agree that institutions such as those that I describe productively help the lender to distinguish between good and bad borrowers. See Alan Schwartz, *A Theory of Loan Priorities*, 18 J. LEGAL STUD. 209, 220 (1989) (arguing that the ability of borrowers to offer credible signals of their quality permits a segmentation of the lending market into good and bad borrowers).

25. As Bob Scott puts it:

An effective commitment by Debtor includes any maneuver that will leave Debtor in the position for which the option of choosing to default . . . is no longer realistic because it imposes more costs than any benefits Debtor could derive from cheating. A credible commitment thus requires Debtor to assume a sufficiently severe penalty so that in all cases she would prefer to carry out her promise to pay in full

Robert E. Scott, *Rethinking the Regulation of Coercive Creditor Remedies*, 89 COLUM. L. REV. 730, 747 (1989).

coupled with a need to expend funds to avoid large losses (such as complete failure of the borrower's business). Because of the distinction between the potential benefits to the borrower from misconduct and the potential harm to the lender of misconduct, a penalty large enough to ensure that *no* borrower ever could gain from diversion of funds would have to be quite large, perhaps several multiples of the amount of the funds at stake.²⁶

The consequences of that analysis are striking. First, viewed *ex ante*, almost any increase in the size of the bond would present some positive benefit in decreasing the likelihood of future falsehood,²⁷ suggesting that the only significant constraint on the size of the bond would be the costs of potential opportunism by the lender. Thus, the parties might have an incentive to continue increasing the size of the ideal bond far beyond the amount of the funds involved in the transaction, until the point at which the potential opportunism costs exceed any additional gains to be had from increased deterrence of falsehood. If (as suggested above) the parties can devise an arrangement in which the potential opportunism costs do not rise directly with increases in the cost to the borrower of forfeiture of the bond, the breakpoint—at which increased costs from opportunism would exceed increased gains from further deterrence—might be quite high.

At first glance, it might seem that the punitive bond approach would be unattractive because it would force the borrower to repay a loan even if the borrower had a use for the funds at the time repayment was due that promised a greater profit than the loss that the lender would suffer from the payment deferral: in other words, the bond might deter an efficient breach.²⁸ That possibility is surely a cost of the arrangement, and a rational borrower considering the arrangement would have to take account of such possible losses in determining whether the bonding mechanism is acceptable.²⁹ But that possibility does not vitiate the potential value of the bonding mechanism. The principal goal of the bonding mechanism is not to influence the borrower to make a value-decreasing choice at the moment when payment is due. On the contrary, the point of the bonding mechanism is to influence the borrower during the period that elapses between the date the loan is made and the date payment is due.³⁰ If the bonding

26. A similar analysis would apply to assertions or forecasts related to events other than the payment of money. I use the monetary example only because it is one for which the value of nonperformance is most easily differentiated from the compensatory damage remedy.

27. Cf. Peter V. Letsou, *The Political Economy of Consumer Credit Regulation*, 44 EMORY L.J. 587, 601 (1995) (“[S]ince easier and expanded access to coercive remedies means a larger expected penalty in the event of a default, both the signal and bond become stronger as the lender’s power to seize and sell property following a default become greater.”).

28. The possibility of renegotiation at the time the payment is due also could prevent the mechanism from imposing losses by deterring efficient breaches. As discussed below, however, the bonding mechanism is most effective in cases in which renegotiation is made difficult or impossible. See text accompanying notes 44-47. Thus, at least in those cases, the cost of deterring efficient breach must be taken into account as a cost of the mechanism.

29. See Schwartz, *supra* note 18, at 375.

30. For that reason, I do not think that Aghion & Hermalin’s analysis of punitive contract sanctions is relevant here. See Philippe Aghion & Benjamin Hermalin, *Legal Restrictions on Private Contracts Can Enhance Efficiency*, 6 J.L. ECON. & ORG. 381 (1990). They argue that legal restrictions on punitive contract sanctions are efficient because they protect good borrowers from the “additional risks imposed by costly signaling.” *Id.* at 382. If, however, as I argue, the sanction principally targets conduct that is within the control of the borrower, then the signaling imposes no significant additional risks, because the borrower that issues the signal should know that it will not engage in the contract that will result in punitive sanctions.

mechanism works properly, the borrower will have an incentive to minimize the possibility that a liquidity problem would occur that would make payment difficult.³¹ The bonding mechanism should motivate the borrower to take care lest the borrower be in a position to suffer serious losses if it makes the required payment.

Thus, at least for borrowers that do not appear at the time of the loan likely to face serious liquidity crises at the time payment is due, the benefits from accepting a bonding mechanism (and committing to prudent behavior) easily could exceed the costs of being coerced by a punitive bond into making a value-decreasing payment. To put it another way, the bonding mechanism is most attractive to borrowers for whom the likelihood of payment difficulties (and their attendant costs) is sufficiently small to render trivial the *ex ante* costs of accepting a device that forces payment even in the face of such difficulties.³²

Second, viewed *ex post* (as it would be by a court evaluating the arrangement), the loss imposed by a large bond often might appear to be excessive, because the loss to the lender from breach would be unlikely to exceed the amount of the unpaid funds by any significant amount even accounting for interest and other transaction costs of collection.³³ Because of the general reluctance of courts to enforce contractual provisions that they perceive to be “penalties,”³⁴ that appearance complicates matters considerably. The problem would be exacerbated further if courts examined the lender’s conduct to determine if the execution of the bond is a “value-maximizing” action at the time it is taken.³⁵ In sum, any legal rule that limits the ability of the

31. Or, which is much the same thing from an *ex ante* perspective, the mechanism will be attractive only to borrowers that believe that they would act prudently during the entire period even without the bonding mechanism.

32. For a similar line of reasoning, see Kathryn E. Spier, *Incomplete Contracts and Signalling*, 23 RAND J. ECON. 432, 432-34 (1992). Spier offers the somewhat implausible example of a well-advised athlete, who might “refrain from asking for an injury clause, because the team manager would infer from such a request that the athlete is more accident prone and would make the terms of the contract worse.” *Id.* at 433.

33. I differ from Samuel Rea on the significance of the compensatory damage amount. Samuel Rea briefly considers the possibility that parties might use penalty clauses as a signal in the fashion that I describe. See Samuel A. Rea, Jr., *Efficiency Implications of Penalties and Liquidated Damages*, 13 J. LEGAL STUD. 147, 156-57 (1984). He rejects that possibility, however, on the theory that a rational buyer would purchase from “the lowest-cost seller offering full compensation in the event of breach.” *Id.* That response, however, assumes that some legal remedy is available that offers costless, perfectly calculated, immediate, and guaranteed compensation for misconduct. The world I study is a world in which that is impossible.

34. See, e.g., RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* § 4.10, at 128 (4th ed. 1992) (“[I]f it is plain from the beginning that the specification is designed to give the victim of the breach much more than he could expect actually to lose from the breach, or the contract breaker to gain, then it is a penalty clause and is unenforceable.”); Mark P. Gergen, *A Defense of Judicial Reconstruction of Contracts*, 71 IND. L.J. 45, 59 (1995) (“At its core, the rule prohibits parties from writing damage clauses in contracts that they expect will overcompensate the promisee on breach.”). As Gergen shows, that rule is not applied nearly so consistently as the doctrinal statement suggests. See *id.* at 63-69. It is, though, sufficiently powerful to undermine the legal enforceability of the arrangements that I discuss here. See *id.* at 67-69 (discussing cases that invalidate clauses based on opportunistic behavior by the beneficiary of the clause).

35. It is difficult to say that courts in fact take that approach, but a number of academics have recommended that they do. See POSNER, *supra* note 34, § 4.1, at 92 (suggesting that the law generally assumes that the parties did not intend to permit literal enforcement of apparently one-sided arrangements); Hanoch Dagan, *Restitutory Damages for Breach of Contract: An Exercise in Private Law Theory*, 1 THEORETICAL INQUIRIES L. (forthcoming 1999) (manuscript on file with author) (general discussion of a “more cooperative” conception of good faith); Mark

lender to execute on the bond limits the efficacy of the arrangement and frustrates the intent of the parties.³⁶

The result of such rules, and a common theme of the later parts of this article, is that constraints on legal enforcement drive contracting parties even further from the legal system and toward more frequent use of contracting mechanisms that do not depend on—and cannot be stymied (or regulated) by—the legal system. Parties can achieve that result in two general ways: by designing the bond so that its retention does not appear to impose a penalty (generally because the high value of the bond is caused only by its particular utility for the borrower)³⁷ or by designing the bond so that legal enforcement is not necessary for its forfeiture (as in the case of reputation).³⁸

C. A FEW DIFFICULTIES

One serious impediment to the effectiveness of the bonding mechanisms described above is the difficulty of finding a way to make the threat credible.³⁹ For the bonding mechanism to alter the incentives of the borrower, the borrower has to believe that the lender actually will follow through on a threat to execute on the bond, even if execution causes a loss to the borrower that exceeds the gain to the lender in that transaction. Three general considerations might limit the credibility of the threat. First, the existence of norms against destructive behavior often might decrease the lender's willingness to follow through on its threat.⁴⁰ Second, if there is any doubt about the propriety of the execution on the bond by the lender, the lender might worry that

P. Gergen, *The Use of Open Terms in Contract*, 92 COLUM. L. REV. 997, 1064-72 (1992) (urging courts to interpret open terms in contracts as requiring value-maximizing performance).

36. Posner questions the law's hostility to such arrangements, but does not attempt to explain why parties might select punitive penalty arrangements. See POSNER, *supra* note 34, § 4.10, at 129; see also John R. Lott, Jr., *The Level of Optimal Fines To Prevent Fraud When Reputations Exist and Penalty Clauses Are Unenforceable*, 17 MANAGERIAL & DECISION ECON. 363, 367 (1996) (noting the inconsistency between the position that it is inefficient for contract penalty clauses to be enforced and the view that it is appropriate for the government to enforce penalty sanctions).

37. See, e.g., *infra* text accompanying notes 62-65 (discussing pawn-shop transactions).

38. See, e.g., *supra* Part IIC2 (discussing reputational sanctioning).

39. I thank Jeff Mackie-Mason and Omri Ben-Shahar for pushing me to think about that point.

40. At this point I should mention what should be obvious by now: my discussion of bonds and hostages is devoted entirely to the question of their potential to increase the gains from contracting between the parties that use them. Like most prior writers in the area, I do not attempt to evaluate the moral and distributional implications of those devices. See, e.g., Gergen, *supra* note 35, at 1001-02. It is obvious that those considerations can make the devices that I discuss quite troubling, at least in situations where they are used by parties that are not thoroughly sophisticated. See, e.g., Ian R. MacNeil, *Economic Analysis of Contractual Relations: Its Shortfalls and the Need for a "Rich Classificatory Apparatus"*, 75 NW. U. L. REV. 1018, 1056-62 (1981) (arguing that the American legal system generally limits unilateral contractual power).

execution would harm the reputation of the lender.⁴¹ The problems of norms impeding execution and possible reputational losses may occur in specific circumstances, but they seem unlikely to pose a general barrier to establishing the credibility of enforcement. The third problem—more general and thus less tractable—is the possibility of renegotiation: if the loss to the borrower exceeds the gain to the lender, a borrower might be able to buy off a lender by offering some amount that exceeds the amount the lender would gain from execution on the bond but nevertheless is less than the amount the borrower would lose from execution on the bond.⁴² Not surprisingly, such bargaining seems to be a prominent feature of the end-game of large commercial loans involving sophisticated parties.⁴³

Several potential responses offset that difficulty. For one thing, it is not clear that the *possibility* of renegotiation renders the bonding mechanism ineffective.⁴⁴ Although it is likely to prevent the lender from extracting the full amount of its asymmetrically punitive bond, even a consensual renegotiation at the point of the end-game puts the borrower at a risk of a substantial loss, because it is difficult for the borrower to predict in advance that it will fare well in such a negotiation. The lender's ability to insist on the full penalty effectively sets a lower bound on the end-game for a defaulting borrower, so that the borrower is highly unlikely to escape without paying some amount at least equal to the value that the lender could obtain if it executed the bond. Thus, even a renegotiable bonding mechanism should have a substantial effect on the borrower's incentives.

Moreover, in many contexts renegotiation will not be available to allow the borrower to avoid the full impact of the punitive bond. Most generally, because of the limited cognitive capabilities of borrowers and lenders, it often might be impractical to resolve smaller problem loan transactions by rational negotiations between the parties.⁴⁵ Perhaps most important, even a thoroughly rational (some might say Machiavellian) lender might execute on the bond, solely for the purpose of establishing the credibility of the threat against others. That kind of *in terrorem* activity would be rational if the loss in the selected case of scorched-earth collection was exceeded by the gains from enhancing the lender's negotiating power in the future and from inducing prudent behavior from future borrowers.⁴⁶

41. That problem is an artifact of the interlocking-bonds arrangement discussed above. Although it could be mitigated by fashioning objective descriptions of the events that would justify execution on the bond, in many circumstances that will not be practical.

42. See, e.g., Garey Ramey & Joel Watson, Contractual Intermediaries 11 (Oct. 1997) (unpublished manuscript, on file with author) (explaining that reputational bonding mechanisms are ineffective where it is feasible for the parties to renegotiate to avoid imposition of the penalty).

43. See *infra* note 122 (discussing case studies describing that outcome).

44. Another benefit from the potential for renegotiation is that it reduces the *ex ante* costs from the bond's potential to deter efficient breaches of the payment obligation. That is particularly true if, as seems likely, the lender is particularly likely to renegotiate in cases in which it believes that the borrower is acting in good faith to fulfill its obligations as soon as possible.

45. See *infra* text accompanying note 74 (discussing evidence related to liquidation of defaulting consumer loans).

46. See Mann, *Strategy and Force*, *supra* note 6, at 227-32 (discussing that point); Scott, *supra* note 26, at 749-51, 773. An acquaintance of mine familiar with the collection practices of a large national retailer (which should go unnamed) assures me that the retailer has an affirmative policy consistent with the statement in the text. The retailer

One final possible response to renegotiation is a system in which the loss is inflicted more or less automatically upon default, so that the lender's ability to renegotiate and withhold enforcement is limited. One prominent example of that practice is the clearinghouse that forces Japanese lenders to provide information about payment defaults on certain types of promissory notes.⁴⁷ A similar though less formal arrangement operates in the context of publicly traded securities in the United States. Absent a bankruptcy proceeding, renegotiation is impractical because of the large number of lenders. Because information of a payment default inevitably is widely disseminated, a payment default inevitably results in a serious reputational harm to the borrower.⁴⁸

Another difficulty to address is whether the bonding mechanism ever can produce a benefit large enough to justify the transaction costs of implementing the mechanism. After all, the most that the bond can do is enhance the likelihood that the lender ultimately will be repaid. The greatest benefit that the borrower can obtain from the bond is that it lowers the cost to the borrower by an amount equal to the expected present value of the increased likelihood of repayment. But any such diminution in the present fees charged to the borrower must be matched precisely by an increase in the future costs to the borrower reflected in the increased likelihood that the borrower in fact will repay the funds in the future. Thus, if creation of the bonding mechanism imposes any transaction costs at all, it is difficult to see how the borrower possibly could gain from agreeing to the mechanism.

The answer is that the arrangement functions not only to alter the likelihood that the borrower will perform as agreed, but also to allow the borrower to signal its character by demonstrating that it is the type of entity that will perform as agreed. Remember, the basic problem is that the borrower is in a better position to know the truth of an assertion than the lender. If the borrower knows (or thinks it highly likely) that it will repay the funds even without the bonding mechanism, then (opportunism by the lender aside) the mechanism imposes no payment costs on the borrower, because the mechanism does not alter the likelihood of repayment. Thus, the bonding mechanism permits the lender to distinguish between borrowers that believe themselves likely to perform as they promise and those that do not.⁴⁹ The more likely the borrower believes it is to perform, the lower the costs of the bonding mechanism, and thus the more attractive the lower price that comes with the bonding mechanism. Those that believe themselves less likely to perform will be more likely to prefer transactions without the

occasionally uses vigorous collection tactics against particular consumer borrowers, even though the tactics are not cost-effective in the individual case.

47. See *infra* text accompanying note 119 (discussing that system).

48. That effect depends, of course, on the impracticality of renegotiation. For a recent and thoughtful proposal that would create a trustee with the power to renegotiate on behalf of the bondholders as a group, see Yakov Amihud et al., *A New Governance Structure for Corporate Bonds*, 51 STAN. L. REV. 447 (1999).

49. See also Spier, *supra* note 32 (providing general formal analysis of the use of contract clauses as a signalling device to resolve information asymmetries). The ability of lenders to use such strategies to separate borrowers based on risk is crucial to a well-functioning credit market. Absent a mechanism for assessing the differing risks of borrowers, lenders would fall into the famous "credit-rationing" trap described by Stiglitz and Weiss. See Joseph E. Stiglitz & Andrew Weiss, *Credit Rationing in Markets with Imperfect Information*, 71 AM. ECON. REV. 393, 395 (1981) (presenting the classic model of credit rationing, which rests on the assumption that banks cannot ascertain the riskiness of any particular project).

costs of the mechanism, but with the higher costs that come from the absence of the verification institution.⁵⁰

One final caveat is in order. All of the foregoing analysis presupposes a high degree of analytical rationality and foresight on the part of all of the contracting parties. That is not because I believe that all people act rationally in all situations.⁵¹ Hence, the analysis of this article has little or nothing to say about transactions involving consumers and less sophisticated small businesses. Moreover, it might be unreasonable to expect the necessary level of rigorous rationality even from relatively large and sophisticated entities.⁵² Don Langevoort, in particular, has shown that the internal dynamics of large business enterprises often create systematic barriers to the accurate collection and analysis of information relevant to important decisions.⁵³ Finally, even if the parties understand the ramification of the mechanisms that they adopt, they might misapprehend the probabilities of the adverse events that would call those mechanisms into play.⁵⁴

But that problem is outside the scope of the article. Collecting empirical data on why businesses adopt particular contracts is extraordinarily difficult. Hence, it is not possible to prove directly that the motivations I explain in this part of the article *cause* businesses to adopt the various mechanisms that I am about to describe. My goal, rather, is to show how the actual practices of businesses may be consistent with the adoption of verification mechanisms for the theoretical reasons that I have described above. In other words, the persuasive force of my analysis should come from its ability to make sense of the wide variety of practices analyzed below.

II. A TYPOLOGY OF INSTITUTIONS FOR VERIFYING INFORMATION

Part I proceeded at a high level of abstraction because its purpose was to describe a general framework for the structure of institutions for verifying information in financing

50. For a numerical example of how that could work out in a particular context, see Mann, *Temporal Priority*, *supra* note 6, at 27-31.

51. See generally, Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1476-79 (1998) (summarizing the distinctions between the predictions of rational-actor theory and the behavior of actual people).

52. See, e.g., Manuel A. Utset, *Innovation & Governance: High-Powered Incentives, Opportunism, and Venture Capital Contracts* 55-63 (Feb. 24, 1997) (unpublished manuscript, on file with author) (providing reasons why entrepreneurs might enter into opportunistic contracts with venture capitalists without understanding the problems with those contracts).

53. See Donald C. Langevoort, *Organized Illusions: A Behavioral Theory of Why Corporations Mislead Stock Market Investors (and Cause Other Social Harms)*, 146 U. PA. L. REV. 101 (1997).

54. See, e.g., Jolls et al., *supra* note 51, at 1480 (“[B]ounded rationality as it relates to decisionmaking behavior will come into play whenever actors are valuing outcomes . . .”). For a sampling of the empirical evidence suggesting that entrepreneurs tend to be unduly optimistic, see Arnold C. Cooper et al., *Entrepreneur’s Chances for Success*, 8 J. BUS. VENTURING 97 (1993) (presenting the results of an empirical study indicating that entrepreneurs are unduly optimistic about the prospects for success by their business); Leslie Palisch & D. Ray Bagby, *Using Cognitive Theory To Explain Entrepreneurial Risk-Taking: Challenging Conventional Wisdom*, 10 J. BUS. VENTURING 425 (1995) (presenting the results of an empirical study indicating that entrepreneurs overestimate the chances of success in equivocal business scenarios).

transactions. This part of the article uses that framework to provide a more empirically grounded description of actual transactions. The empirical description makes no effort to provide a complete picture of those transactions. On the contrary, the description is consciously stylized to illustrate the extent to which the broad range of transactions can be understood as more or less successful manifestations of the bonding device described in Part I. The description is designed to show that the perspective outlined above provides a sufficiently rich view of a diverse group of transactions to persuade the reader that my perspective captures a significant part of the motivation for the transactions described in the rest of the article.

With those qualifications in mind, I have divided the description into three parts, based on three general ways in which the borrower can post a bond with the lender: by posting collateral with the lender, by committing relation-specific assets to the transaction, or by investing in reputation.

A. COLLATERAL

The first device is the simplest. The borrower can post specific assets as collateral with the lender and grant the lender the right to retain the assets if the assertions of the borrower are (or become) false. Although transactions that use collateral are a common feature of our economy,⁵⁵ it is not clear to what extent the collateral is posted to serve the bonding function described in this article. To examine that question, the following sections examine three general types of transactions in which collateral-like devices are used: possessory secured transactions, non-possessory secured transactions, and software financing transactions. The final section of this portion of the article pauses to evaluate the analogous law-centered mechanism, a lawsuit for misrepresentation.

1. Possessory Secured Transactions

The oldest type of secured transaction is the classic pledge, in which the borrower delivers the collateral into the possession of the lender. As it happens, the pledge does not play a major role in modern financing transactions; most modern commercial secured transactions fall into the nonpossessory category discussed in the next section.

The framework summarized in Part I suggests two reasons why a possessory secured transaction ordinarily is an unsuitable arrangement for providing a bond to a lender. First, posting assets with the lender often takes the assets out of a productive use; it is costly for a manufacturer to put its drill press in the bank vault as a condition for a loan transaction. If a transaction requires the borrower to remove productive assets from use, the foregone income from those assets becomes a cost of the transaction. Second, our legal system is likely to resist enforcement of such a transaction in any case in which the asset posted as a bond is designed to cause a loss to the borrower that exceeds the loss suffered by the lender. The common law characterizes such an arrangement as a “penalty” and responds with significant obstacles to

55. See Mann, *The Pattern of Secured Credit*, *supra* note 6, at 627 & n.1 (reporting statistics that support an estimate of at least two trillion dollars of outstanding secured debt in this country).

enforcement of the agreed-upon arrangement.⁵⁶ Furthermore, the legal rules associated with retention of collateral generally require the lender to return to the borrower any amount by which the value of the collateral exceeds the outstanding amount of the loan advanced by the lender.⁵⁷

Direct pledges, however, do survive in a variety of contexts. Probably the most common is the pledge of passive income-producing assets (such as certificates of deposit or securities). Because those assets produce value for the borrower even while in the possession of the lender, a transaction posting the assets does not present the foregone income problem directly.⁵⁸ On the other hand, because the remedy of the lender in those transactions typically is limited to retention of financial assets with a value equal to the amount of the obligation to be secured (together with any incidental transaction costs), the loss of such assets ordinarily inflicts only compensatory damages.⁵⁹

Thus, properly understood, those transactions do not appear to involve the use of collateral as a bonding mechanism of the kind I describe here. Rather, the collateral in those cases appears to function directly to reduce the *ex ante* costs of anticipated defaults by increasing the *ex post* likelihood of coerced collection.⁶⁰ Because the collateral only enhances the likelihood of involuntary collection through liquidation of the collateral, it does not generally provide the incentive-altering effects on which I focus.⁶¹ If loss of the collateral does not threaten the borrower with a significant loss—a loss that is, for the reasons explained in Part I, a substantially punitive loss—then the collateral does nothing to increase the borrower's incentive to conduct its affairs prudently. There may be transactions in which it is worthwhile to post collateral without those incentive-altering effects, but because they will be limited to cases in which the opportunity costs of delivering the collateral to the lender are small, they do not provide a general device for financing ongoing business enterprises.

That is not to say that a possessory secured transaction could not function as an effective bonding mechanism. For example, consider the most common consumer possessory secured transaction: the pawn. For several reasons, the pawn is likely to provide a significantly more effective device than a typical commercial possessory secured transaction. Because pawned

56. See *supra* note 34 and accompanying text.

57. See RESTATEMENT (THIRD) OF PROPERTY: MORTGAGES § 6.4(a) (1997) (articulating that rule for real-property transactions); U.C.C. §§ 9-608(a)(4), 9-615(d) (articulating that rule for personal-property transactions).

58. The pledge still might impose some opportunity cost by limiting the liquidity of the investment portfolio of the borrower, but that does not strike me as a major organizing feature of the arrangement.

59. That may not always be true. For example, if the taxpayer's basis in the stock is lower than the stock's value (a common situation in an era of rapidly increasing stock markets), liquidation of the stock would impose a loss on the borrower (in the amount of the taxes the borrower must pay on the gain from liquidation). Similarly, consider the pledge of a controlling block of stock, the loss of which would deprive the borrower of control of the corporation in question. In that case, loss of the stock might inflict a punitive sanction by depriving the borrower of control of the corporation in addition to the loss of the market value of the lost shares. Furthermore, if the lender is unable to obtain the control premium when it liquidates the shares, the transaction presents the asymmetrically punitive arrangement that minimizes the lender's incentive for opportunism.

60. See Mann, *The Pattern of Secured Credit*, *supra* note 6, at 639 (describing that effect as one of several potential advantages of secured lending transactions).

61. The transaction costs associated with involuntary payment through liquidation of the collateral might increase the likelihood of voluntary performance. That strikes me, however, as a relatively insignificant aspect of such a transaction.

assets have an idiosyncratic value to the pawnor that exceeds their liquidation value to the pawnbroker, forfeiture imposes a substantially punitive loss that makes the pawn an effective bond.⁶² And because the pawnbroker will not be able to liquidate the pawn at a price that reflects that idiosyncratic value, the pawn is only asymmetrically punitive, diminishing the pawnbroker's incentive for opportunistic liquidation of the pawn. Finally, and most important for my purpose, that punitive loss is unlikely to be mitigated by legal concerns about penalties. For one thing, the small size of the average transaction⁶³ and relative indigence of the average pawnor makes it unlikely that many pawn transactions will result in litigation.⁶⁴ And even if the transaction does result in litigation, the punitive nature of the loss would be likely to elude legal notice, because it is an artifact not of a high market value of the asset, but of the asset's high idiosyncratic value to the pawnor.⁶⁵

2. Nonpossessory Secured Transactions

Given the problems discussed in the preceding section, it should be no surprise that most modern commercial secured transactions do not contemplate that the creditor will retain possession of the collateral during the pendency of the relationship. Rather, in the typical arrangement, the borrower retains possession of the collateral and the lender places a filing in a public record that gives third parties notice of the creditor's claim against the collateral.⁶⁶ The question for this article is whether, in those transactions, collateral actually is used as a bonding mechanism.

A full answer to that question must await considerably more empirical evidence than we yet have. As Bob Scott and I have suggested in earlier work, however, there is reason to believe that the bonding phenomenon does play some role in the decision of businesses to use collateral in their lending transactions.⁶⁷ Thus, lenders might take a lien on collateral expecting that the

62. The pawn could bear an idiosyncratic value to the borrower not only because of some kind of heirloom value (which might be difficult for the pawnbroker to verify) but also because of the typical phenomenon that the salvage value of consumer goods is quite low compared to their value in the hands of those who own and use them.

63. See JOHN P. CASKEY, FRINGE BANKING: CHECK-CASHING OUTLETS, PAWNSHOPS, AND THE POOR 26 (1994) (reporting statistics indicating that the average pawn transaction in 1991 was for approximately \$60).

64. Cf. *id.* at 118-19 (arguing that regulation of pawnshops is appropriate because of the inability of pawnshop customers to protect themselves from unscrupulous practices).

65. My view that pawn transactions rest on an effective bonding mechanism is descriptive and not normative. It would be easy to object to those transactions on the ground that they typically involve consumers who are less likely than commercial enterprises to understand with full rationality the consequences of the transactions into which they have entered. See *supra* text accompanying notes 51-54 (discussing that problem generally).

66. For the most detailed discussions of the relation between filings and nonpossessory lending transactions, compare Douglas G. Baird & Thomas H. Jackson, *Possession and Ownership: An Examination of the Scope of Article 9*, 35 STAN. L. REV. 175 (1983) (arguing that filings should be required in all such transactions, including leases that serve the same function), with Charles W. Mooney, Jr., *The Mystery and Myth of "Ostensible Ownership" and Article 9 Filing: A Critique of Proposal To Extend Filing Requirements to Leases*, 39 ALA. L. REV. 683 (1988) (rejecting Baird & Jackson's analysis).

67. See Mann, *The Pattern of Secured Credit*, *supra* note 6, at 645-49, 655-56 (describing the benefits of the increased leverage created in secured lending transactions); Scott, *supra* note 21, at 926-28 (suggesting that borrowers in commercial lending transactions grant collateral that functions as a hostage for the lender); see also

disastrous losses from repossession and liquidation by the lender would induce the borrower to repay the loan even if repayment alone is not value-increasing for the borrower at the time payment comes due.⁶⁸ Although different scholars have different perspectives on the question,⁶⁹ some scholars believe that much of the force of secured credit comes from the leverage that the lender holds in that transaction: repossession and liquidation cost the borrower much more than they aid the lender.⁷⁰ To the extent that is true, it provides a signal example of the asymmetrically punitive bonding mechanism on which this article focuses.

Evidence from two of my empirical studies suggests, however, that the significance of the bonding mechanism to the practice of secured credit is overstated. The problem comes from the relatively low values at which lenders tend to be able to liquidate the assets of their borrowers.⁷¹ Because the borrower often is able to liquidate (or buy) the assets at a price higher than the price at which the lender could liquidate them, mainstream commercial lenders apparently liquidate assets quite rarely.⁷²

Because liquidation occurs quite rarely, and because the reason for the rarity is the perception of the parties that liquidation is costly for the lender, the threat of liquidation by the mainstream commercial lender is so weak that the incentive effects of the transaction are quite limited. Thus, I believe that in most mainstream commercial contexts the primary motivation for secured credit is not the incentive-altering effects that would come from a bonding mechanism, but rather secured credit's ability to limit subsequent borrowing by giving notice of the lender's interest in the borrower's assets.⁷³

Letsou, *supra* note 27, at 593 (making a similar point in the consumer context: "By subjecting themselves to coercive remedies that allow lenders to seize debtor property or wages . . . borrowers are able to assure lenders that both the default risk and the expected costs of collection associated with their loans will be low.").

68. See Mann, *The Pattern of Secured Credit*, *supra* note 6, at 646-48 (providing a numerical example illustrating that point).

69. The literature on the reasons for secured credit is extensive. For a critical summary of that literature, see *id.* at 627-30.

70. See, e.g., David Gray Carlson, *On the Efficiency of Secured Lending*, 80 VA. L. REV. 2179, 2188-89 (1994); David Gray Carlson, *Secured Lending as a Zero-Sum Game*, 19 CARDOZO L. REV. 1635, 1679-80 (1998) ("[P]ower is the main thing. . . . Any theory of secured lending must concentrate primarily on power."); Letsou, *supra* note 27, at 597-98; Scott, *supra* note 21, at 926-27; George G. Triantis, *Secured Debt Under Conditions of Imperfect Information*, 21 J. LEGAL STUD. 225, 246-47 (1992).

71. That problem is particularly serious for small-business lenders, see Mann, *Small-Business Lending*, *supra* note 6, at 15-19 (presenting evidence on that point), but surely is not limited to that context, see Mann, *Strategy and Force*, *supra* note 6, at 221-26 (presenting evidence on that point from case studies of practices for dealing with problem loans at three large institutional lenders).

72. See Mann, *Strategy and Force*, *supra* note 6, at 227 (summarizing the results of case studies).

73. See Mann, *The Pattern of Secured Credit*, *supra* note 6, at 641-45 (explaining how the ability to limit subsequent borrowings is a significant benefit of a grant of collateral); Mann, *Small-Business Lending*, *supra* note 6, at 25-26 (arguing that the ability to limit subsequent borrowing is the primary motivation for small-business secured credit); see also Alan Schwartz, *Priority Contracts and Priority in Bankruptcy*, 82 CORNELL L. REV. 1396, 1412-14 (1997) (arguing that firms issue secured debt to prevent dilution of claims by debt issued to subsequent lenders). Bob Rasmussen has offered the interesting suggestion that even the borrowing-limiting function could be treated as a bonding mechanism, on the theory that the elimination of future borrowing enhances the relational value of the prime lending relationship, which enhances the bonded nature of that relationship.

As with my similar generalization about the limited significance of bonding effects in the possessory secured-credit context, some counterexamples are apparent. For example, substantial evidence indicates that forced liquidation does occur with some frequency in the consumer context.⁷⁴ More to the point of this article, my impression—as yet unsupported by any substantial evidence—is that a significant amount of foreclosure does occur in commercial loans to marginal businesses. In my *Strategy and Force* article, I described a system under which commercial borrowers move from lender to lender depending upon the riskiness of the borrower, with riskier borrowers going to more risk-tolerant (and expensive) lenders, and safer borrowers going to less risk-tolerant (and less expensive) lenders.⁷⁵ But all three of the case studies that I presented in that article involved mainstream lenders to profitable businesses: a bank, a multinational finance-company subsidiary, and a life-insurance company.⁷⁶ Thus, those studies probably presented a slice of practices at the safe-to-medium portion of the commercial lending range. A study of practices at the risky end of the commercial lending range probably would reveal a much higher incidence of forced liquidation. In that context, then, the bonding effects of collateral might have considerable power.⁷⁷

Mark Carey and his co-authors advance a related thesis in a recent paper.⁷⁸ They argue that the lending market is segmented not by the risk tolerance of the lender, but by the willingness of the lender to act forcefully against the borrower. The lender to low-risk businesses is less willing to take forceful action, they argue, because of the possible adverse reputational effects of such action.⁷⁹ Although that thesis offers an intriguing example of the interlocking-bond arrangement that I emphasize in this article,⁸⁰ I doubt its broad applicability. My general impression (admittedly still anecdotal) is that lenders do not worry that reputational markets will misinterpret forceful actions as misconduct, because lenders tend to rely on objective evidence of borrower misconduct (missed payments) to justify those actions. In my view, the reason that riskier lenders are likely to take more forceful action than more conservative lenders is that riskier lenders have more occasions to take such actions and thus develop expertise in that type of collection activity.⁸¹

If I am correct about the limited importance of the bonding effects of secured transactions, that would have significant policy consequences, because it suggests that little is gained from legal rules that support those aspects of secured transactions. Thus, for example, it

74. See Mann, *Strategy and Force*, *supra* note 6, at 227-32 (conjecture as to why forced liquidation seems to occur more frequently in the consumer context). *But cf.* Letsou, *supra* note 27, at 595-96 (suggesting that monitoring and bonding devices are less effective for consumers because of the small size of the loans).

75. See Mann, *Strategy and Force*, *supra* note 6, at 215-19.

76. See *id.* at 163.

77. I am in the opening stages of a case study of a commercial accounts-receivable factor, which does liquidate its collateral much more frequently.

78. See Mark Carey et al., *Does Corporate Lending by Banks and Finance Companies Differ? Evidence on Specialization in Private Debt Contracting*, 53 J. FIN. 845, 870-71 (1998).

79. See *id.* at 847 (“High-risk borrowers are served by lenders known to be tough and unbending, whereas lower-risk borrowers are served by those known to be gentle.”).

80. For a general discussion of an interlocking-bond arrangement, see *supra* note 22 and accompanying text.

81. *Cf.* Letter from Gary F. Winer, President, Monetrex, Inc., to Robert J. Mann [*sic*] (Mar. 30, 1998) (arguing that his company has more expertise at forceful collection activity than a mainstream lender).

might not significantly affect the availability of credit if lenders were forced to set aside a portion of the proceeds of their collateral to pay certain involuntary unsecured creditors.⁸² More radically, it suggests, at least in some contexts, that lenders might be adequately protected by some sort of negative lien that prevented others from gaining priority in specified assets without giving the lender any right of liquidation.⁸³

3. Software Financing

An analogous phenomenon is developing in the field of software financing. Prominent licensors are reluctant to allow remarketing of their software by lenders that might foreclose on a defaulting borrower/licensee.⁸⁴ Hence, lenders to borrower/licensees frequently are unable to obtain security interests to protect their loans. What they can obtain, however, is a right to terminate the licensee's interest under the license, which typically is described as "unsecured" software financing.⁸⁵ Although it appears unlikely that the proposed Uniform Commercial Code provisions governing software licenses will validate that arrangement,⁸⁶ the natural remedy for enforcing such a right would be through electronic self-help that would allow the lender to terminate the licensee's interest without physical entry into the premises of the defaulting borrower.⁸⁷

That arrangement is an elegant example of the asymmetrically punitive bond. On the one hand, the lender's incentive for opportunistic termination is relatively low, because the lender gains no monetary advantage from termination and arguably would suffer some reputational harm if the termination was unjustified. On the other hand, the remedy could be quite effective in imposing leverage against the borrower, upon which termination of the license could impose severe costs. Moreover, the ability of the lender to use electronic self-help to execute on the bond removes many of the transaction costs (such as the fee of the repossession agent) typical of the assets posted in more traditional secured-credit contexts. The main problem with electronic self-help would be making the threat credible: Will borrowers really believe that their lenders would use such a procedure just because the borrower misses a few payments?

82. See, e.g., Lucian Arye Bebchuk & Jesse M. Fried, *The Uneasy Case for the Priority of Secured Claims in Bankruptcy*, 105 YALE L.J. 857, 909-11 (1996); Memorandum from Elizabeth Warren to Council of the American Law Institute 1 (Apr. 25, 1996) (on file with author) (making such a proposal); see also Mann, *Strategy and Force*, *supra* note 6, at 241-43 (reporting anecdotal interviews with lenders generally indicating that the Warren proposal would not significantly constrict credit).

83. For a recent proposal to implement such a reform, together with detailed discussion of how such a reform might work, see Carl S. Bjerre, *Secured Transactions Inside Out: Negative Pledge Covenants, Property, and Perfection*, 84 CORNELL L. REV. 305 (1999).

84. The licensors' principal concern appears to be a desire to prevent sales by lenders that would undercut the licensors' ability to implement complex pricing schemes that impose different charges for software use based upon the size and type of the company using the software. See Ronald J. Mann, *Secured Credit and Software Financing* 21 (Jan. 28, 1999) (unpublished manuscript, on file with author).

85. See *id.* at 35-51 (discussing interviews describing this transaction).

86. Although the drafts for Article 2B at one time protected the right of self-help, they never protected the right of the unsecured financier to use self-help. See Proposed UCC § 2B-715(b) (Aug. 1998 draft) (granting a right of self-help only for "licensors"). I am not aware of any move by the drafting committee to add such a provision.

87. See *id.* at 49 n.147 (discussing the mechanics of electronic self-help).

It is unsettling for a lender to obtain the right to disable software that might be crucial to the borrower's operations, particularly when the loss of the software might cause harm to third parties that rely on the borrower's continued ability to operate. My goal here, however, is not to analyze the broader policy implications of validating that device, which are serious. Rather, I mean only to suggest that the device would be an unusually effective and inexpensive mechanism for verifying the seriousness of the borrower's commitment to performing as agreed.

4. Lawsuits as a Verification Institution

As a legal academic, I have some obligation to include within my framework the direct sanctions imposed by positive law to deter the misconduct at hand. Thus, before moving to other topics, I address the simple lawsuit for misrepresentation, a subject not so far afield as it might seem at first glance. Such a lawsuit rests on a legal rule that allows the lender to obtain assets of the borrower if the borrower commits a sufficiently serious misrepresentation.⁸⁸ Thus, it can be viewed as a standardized nonspecific pledge. That pledge, however, is created not by the agreement of the parties, but exists as a background default procedure without the necessity for tailored contracting by the lender and the borrower.

For a variety of reasons, however, the lawsuit often is considerably less effective than the other institutions discussed in this section. The most obvious reason is the extraordinarily high transaction costs of enforcement through litigation, which generally requires considerable time, effort, and expense. Furthermore, except in the most blatant circumstances, the lender will have considerable doubt about its ability successfully to recover for what it perceives to be a misrepresentation on the borrower's part. The lender might worry about its ability to convince a court that the misstatement was intentional,⁸⁹ to prove a misstatement, or to collect a judgment even if it prevails.⁹⁰ That problem is particularly serious in situations in which it is difficult for the parties to agree upon specific contract language describing the desired performance.⁹¹

88. In this context, the lawsuit would be directly relevant only if the misrepresentation harmed the lender in some way other than limiting the likelihood of repayment (because the borrower would be obligated to repay the loan without regard to the accuracy of any underlying factual statements). The point is important, however, to illustrate the comparative effectiveness of a legal remedy for false statements and the various privately ordered remedies discussed elsewhere in this article.

89. As mentioned above, the parties often would agree that the lender could recover for any false statement, without regard to intent or fault on the part of the borrower. *See supra* note 16. The standard lawsuit for misrepresentation, however, is likely to require proof of at least negligence, if not intentional misconduct by the borrower.

90. *See, e.g.,* CASE STUDIES IN CONTRACTING AND ORGANIZATION 10 (Scott E. Masten ed., 1996) [hereinafter MASTEN CONTRACTING STUDIES] (summarizing the economic effects on contracting practices of the uncertainty of contract enforcement through the formal legal process); Reinier H. Kraakman, *Gatekeepers: The Anatomy of a Third-Party Enforcement Strategy*, 2 J.L. ECON. & ORG. 53, 57 (1986) ("We cannot 'charge' individuals or corporations more than the value of their net assets in response to business delicts.").

91. It is clear that parties consciously select such terms in many contexts. *See* Gergen, *supra* note 35, at 1026-37 (providing a general theory of why open terms are useful when parties contract about assets of uncertain value); Kornhauser, *supra* note 4, at 695-96 (providing a formal analysis of reasons for incomplete contracting); Mann, *The Pattern of Secured Credit*, *supra* note 6, at 666-67 (discussing the difficulties of using precise terms in commercial lending arrangements); Schwartz, *supra* note 9, at 278-81 (providing a typology of the causes of incomplete

Finally, because of the general hostility of the legal system to penal sanctions, the lender will be unlikely to obtain punitive damages in any but the most blatant cases, which further limits any potential *in terrorem* effect from potential lawsuits for misrepresentation. Thus, although the misrepresentation lawsuit certainly has been an effective disciplining device in some contexts at some times in our legal system, I seriously doubt its direct importance in the contexts addressed by this article.⁹²

B. RELATIONAL ASSETS

Although arranging for the borrower to hand assets over to the lender is the simplest way to establish a bonding arrangement, it certainly is not the only way. As Oliver Williamson demonstrated in his justly famous article on the subject, contracting parties can accomplish the same thing through the use of relational assets.⁹³ Instead of posting a bond directly with the lender, the borrower invests in relation-specific assets (specialized equipment, expertise, and the like) that have a relatively low value in alternative uses (salvage). The difference between the value of the assets in that relationship and their value in any alternative use practicably available to the borrower provides a source of “quasi rents” for the lender. Thus, if the lender takes an action that ends the relationship and diverts the assets to the alternative uses, the borrower suffers a substantial loss.⁹⁴

That arrangement has the potential to provide three general improvements upon the simpler, more direct arrangements discussed in the preceding sections. For one thing, because the assets that constitute the bond remain in the borrower’s control, the arrangement does not require the removal of assets from productive use. The arrangement, however, is not costless. Aside from the transaction costs of creating the arrangement, the need for the borrower to structure its business to depend on relation-specific assets could impose costs by leaving the borrower in a sub-optimal, inflexible condition. To put it another way, relational assets should work better as a bond in contexts in which the underlying economics of the business call for considerable asset specificity than they would in contexts in which—absent the need for some verification institution—the borrower’s assets would not be highly specific to its operations in the transaction that involves the lender. If the borrower’s assets would be specialized anyway, then the benefits of relation-specific assets can be obtained without substantial alteration of investment policies.⁹⁵

Another benefit of the arrangement is its ability to dispense with legal enforcement. Many (if not most) of the collateral-like arrangements discussed in the previous section of the

contracting). For a thorough theoretical discussion of the difficulties of appropriate enforcement of nonspecific contract terms, see Gergen, *supra* note 35, at 1019-25.

92. To the extent the lawsuit for misrepresentation has any significance, I would attribute that to the lawsuit’s indirect negative effect on the reputation of the borrower, a topic discussed *infra* Part IIC.

93. See Williamson, *supra* note 7; see also Rachel E. Kranton, *The Formation of Cooperative Relationships*, 12 J.L. ECON. & ORG. 214, 219-27 (1996) (providing a formal model of the conditions necessary for commencement of a long-term cooperative relationship).

94. For a general discussion of the concept of quasi-rents in relational contracting, see MASTEN CONTRACTING STUDIES, *supra* note 90, at 13.

95. That assumes, of course, that the salvage value of those assets remains low by comparison to their cost.

article depend on some form of affirmative legal action by which the lender executes the bond in response to misconduct by the borrower. With relational assets, however, the action that imposes the loss need not be a lawsuit; it might be a simple termination of the relationship, which imposes costs by forcing a diversion of relation-specific assets to less valuable alternative uses. As long as the law tolerates the termination, the arrangement can function properly.

As a related point, because the harm to the borrower arises out of that indirect diversion of assets to less valuable uses, it is not likely to be hindered by the persistent legal hostility to punitive sanctions. (If it is hindered at all, it will be hindered by legal rules that limit the ability of lenders to terminate relationships in situations in which it appears that termination will impose substantial losses on their borrowers.⁹⁶)

Finally, because relational contracts almost by definition involve bilateral arrangements, it often is feasible to structure an interlocking-bond arrangement that constrains the lender from opportunistically executing on the bond. Venture capitalists and entrepreneurs have one such arrangement. It seems well established that the commitment of the parties to that relationship allows each to repose considerable trust in the statements of the other. The entrepreneur has an incentive to act honestly, because the funds are provided to it in several stages over a period of years; its misbehavior could lead to termination of funding and probable failure of the enterprise.⁹⁷ The venture capitalist's broad right to remove management of the entrepreneur at any time serves as an additional check against misbehavior.⁹⁸

But the relationship also includes structural protections against opportunism by the venture capitalist. Most important, the venture capitalist is unlikely to profit from the transaction, or even recover all of its investment, unless the enterprise reaches a point at which it can issue publicly traded securities: It is like an investment in railroad tracks, which has little value until the tracks reach their destination. The venture capitalist *has* to keep funding, or it might lose its entire investment.⁹⁹ As a result, the venture capitalist's incentives for fair dealings

96. See, e.g., R. Wilson Freyeremuth, *Enforcement of Acceleration Provisions and the Rhetoric of Good Faith*, 1998 BYU L. REV. 1035, 1068-91 (analyzing cases that have imposed subjective limitations on a creditor's right to accelerate). As I have stated before, the structural importance of prompt termination mechanisms makes me deeply "skeptical of the propriety of recent litigation and academic proposals to limit the ability of lenders to . . . terminate their lending relationships." Mann, *Strategy and Force*, *supra* note 6, at 218.

97. See Bernard S. Black & Ronald J. Gilson, *Venture Capital and the Structure of Capital Markets: Banks Versus Stock Markets*, 47 J. FIN. ECON. 243, 253 (1998) (discussing the importance of staged investments to venture-capital structure); William A. Sahlman, *The Structure and Governance of Venture-Capital Organizations*, 27 J. FIN. ECON. 473, 507 (1990) (explaining how staging investments limits opportunistic conduct by entrepreneurs); Thomas Hellmann, *Financial Structure and Control in Venture Capital* 14-16, 24-30, 37-38 (June 7, 1994) (unpublished manuscript, on file with author) (arguing that investments by venture capitalists need to be staged to ensure continued efforts by the entrepreneur and that debt from other lenders needs to be minimized to ensure that venture capitalist's incentives are adequately aligned with the firm in which it invests).

98. See Black & Gilson, *supra* note 97, at 253 (arguing that the venture capitalist's right to remove management limits opportunism by the entrepreneur); Thomas Hellmann, *The Allocation of Control Rights in Venture Capital Contracts* 13-15 (1998) (unpublished manuscript, on file with author) (same).

99. See Black & Gilson, *supra* note 97, at 255-57.

with the entrepreneur are bolstered by the need to keep the company going until it can make a successful initial public offering.¹⁰⁰

For obvious reasons, relational contracting works best in circumstances involving long-term transactions between the same parties, such as employment contracts or commerce in the production and distribution of assets.¹⁰¹ The lengthy term of those arrangements lessens the costs the arrangements impose in foregone flexibility, because of the greater likelihood that the relationship will endure for a major portion of the useful life of the relation-specific assets. That same characteristic, of course, tends to limit the types of transactions in which relational assets can be used to verify information.

Mainstream long-term lending relationships present a challenging area for relational theory. Although the role of relational concerns is difficult to assess, they nevertheless seem to be significant in some contexts.¹⁰² As Bob Scott has explained, commercial borrowers and lenders can gain considerably from an arrangement in which one lender is the predominant lender to a borrower and thus has the ability to impose significant costs on the borrower by withdrawing from the relationship in response to misconduct by the borrower.¹⁰³

Scott and I do differ somewhat on how the relationship works. He focuses more on the threat of loss—he characterizes the debtor as offering all of its assets as a hostage—while I am more sanguine about the borrower’s ability to escape the relationship successfully. My differing perspective rests on a desire not to overemphasize the extent to which termination by the existing lender will harm the borrower; one of my prior studies indicates that even distressed borrowers often find a new lender upon termination by their existing lender.¹⁰⁴

Nevertheless, it seems clear that termination should impose at least three kinds of costs on the borrower. First, the borrower will incur some out-of-pocket transaction costs in shifting its relationship from one lender to another. Second, if the shift is motivated by a perception that

100. See Smith, *supra* note 22, at 150-53 (explaining how contracts between entrepreneurs and venture capitalists limit the potential for opportunistic conduct by venture capitalists).

101. As my colleague Scott Masten explains: “One of the most firmly established regularities in the empirical literature on contracting is the association between relationship-specific investments (or reliance) and the use and duration of contractual agreements.” Scott Masten, *Contractual Choice* 13 (Aug. 1998) (unpublished manuscript, on file with author) (collecting studies).

102. See generally Allen N. Berger & Gregory F. Udell, *The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle*, 22 J. BANKING & FIN. 613, 645-51 (1998) (analyzing the existing empirical evidence regarding the nature and significance of relational considerations in commercial lending transactions).

103. See Scott, *supra* note 21, at 927-28. Mark Carey and his co-authors present empirical evidence of multi-lender loans supervised by finance companies, with banks as more passive participants. They argue persuasively that those arrangements suggest that loan contracts are influenced by relational considerations rather than simply the cross-selling activity by banks that would support multi-lender arrangements led by banks. See Carey et al., *supra* note 78, at 865-66.

104. See Mann, *Strategy and Force*, *supra* note 6, at 215-19. The deterrent effect of the threat of termination also is mitigated by the possibility of renegotiation—the lender instead of terminating will retain the borrower in its portfolio upon more onerous terms. That could reflect only an implicit alteration of terms, such as a transfer of the relationship from the originating loan officer to a division that handles problem loans, an action that at least implies less merciful treatment by the lender. Alternatively, the renegotiation could occur more formally. See, e.g., *id.* at 196-98 (discussing a bank’s use of renegotiated increases in interest rates as a tool to motivate distressed borrowers).

the borrower is unreliable, the shift often will move the borrower to a lender in a higher-risk category, resulting in a higher interest rate for the borrower.¹⁰⁵ Third, and most crucially, the new lender is likely to charge substantially more than the existing lender because of the relatively inferior state of the lender's knowledge about its new borrower: a borrower always faces costs in starting over with a new lender unfamiliar with the borrower's operations. Although those costs are difficult to quantify, existing empirical studies put the interest-rate benefits of a lengthy relationship in the range of one-twentieth of a percent per year, a substantial amount.¹⁰⁶

C. REPUTATION

In the third scenario, the borrower uses its reputation as a bond. Although reputation is a wholly intangible asset, it nevertheless functions in much the same way as the more tangible assets described in the preceding sections: if the information provided by the borrower turns out to be false, the borrower can suffer a significant harm through diminution of its reputation. For example, if a reputable commercial real-estate developer transfers real estate with a representation regarding the quality of the construction, it will suffer a substantial loss to its reputation if the representation turns out to be false.¹⁰⁷ The prospect of that *ex post* loss of reputation gives the representation considerable *ex ante* value.¹⁰⁸ Essentially, the willingness of

105. See *id.* at 216-19.

106. See Allen N. Berger & Gregory F. Udell, *Relationship Lending and Lines of Credit in Small Firm Finance*, 68 J. BUS. 351, 369, 372-75 (1995) (presenting statistically significant data indicating that a 10-year banking relationship would lower the cost of a firm's credit by 48 basis points); see also John McMillan & Christopher Woodruff, *Interfirm Relationships and Informal Credit in Vietnam*, 114 Q. J. ECON. (forthcoming 1999) (manuscript at 10, on file with author) (presenting data from Vietnam indicating that the willingness to offer trade credit increases with the length of the relationship); David W. Blackwell & Drew B. Winters, *Banking Relationships and the Effect of Monitoring on Loan Pricing* 17-20 (Mar. 1996) (unpublished manuscript, on file with the author) (presenting empirical evidence that longer relationships lead to lower monitoring efforts and thus indirectly to lower interest rates).

107. Several of the papers in MASTEN CONTRACTING STUDIES, *supra* note 90, provide illuminating examples of reputational sanctioning in context. See, e.g., Thomas M. Palay, *Comparative Institutional Economics: The Governance of Rail Freight Contracting*, in MASTEN CONTRACTING STUDIES, *supra* note 90, at 52-55 (describing reputational constraints in arrangements between shippers and owners of railroad freight cars); Edward C. Gallick, *Exclusive Dealing and Vertical Integration: The Efficiency of Contracts in the Tuna Industry*, in MASTEN CONTRACTING STUDIES, *supra* note 90, at 203, 211-15 (analyzing reputational constraints on opportunistic behavior by tuna processors). For some particularly persuasive examples from environments in which legal sanctions are effectively nonexistent, see Janet T. Landa, *A Theory of the Ethnically Homogeneous Middleman Group: An Institutional Alternative to Contract Law*, 10 J. LEGAL STUD. 349, 355-57 (1981) (discussing the reputational sanctions among members of Chinese clan groups serving as middlemen in southeast Asia); John McMillan & Christopher Woodruff, *Networks, Trust, and Search in Vietnam's Emerging Private Sector* 13-14 (Mar. 9, 1998) (unpublished manuscript, on file with author) (discussing the importance of reputational sanctions in Vietnam).

108. See R.H. Coase, *The Nature of the Firm: Influence*, 4 J.L. ECON. & ORG. 33, 44 (1988) (arguing that "the propensity for opportunistic behavior is usually effectively checked by the need to take account of the effect of the firm's actions on future business"). Indeed, Coase generally believes that reputational sanctioning is so effective as to obviate the need for the kinds of asset specificity postulated by the theory of relational contracting. See *id.* at 44-46.

the asserting party to put its reputation on the line provides second-order information about the directly significant first-order information.

Numerous earlier scholars have recognized the existence of reputational sanctioning.¹⁰⁹ My goal here is to extend that literature in two ways: to broaden it by situating reputational sanctions in the larger framework of devices discussed in this article and to give it context by analyzing the mechanisms by which reputational sanctioning functions. As with the other mechanisms discussed in this article, the primary goal is to understand the situations in which that mechanism is most likely to function successfully.

1. Reputation as a Bond

On the first point, two aspects of the structure of reputational sanctioning suggest that it should work well to provide a bonding incentive to the borrower. First of all, reputational sanctioning provides the punitive remedy described in Part I. Because the process by which harm is inflicted on reputation—the dissemination of adverse information—does not require recourse to a judicial remedy, legal constraints on punitive penalties do not constrain the process. Also, because the value of reputation is not limited by the amount at stake in the transaction, it is easy to see that the harm from loss of reputation could exceed significantly the funds at stake in the underlying transaction.

The second feature that makes reputational sanctioning an attractive contracting mechanism arises from the nature of the asset that is posted. Unlike the institutions discussed above, reputational sanctioning does not directly undermine the effectiveness of the borrower's use of productive assets. Recall that transactions involving collateral can require the borrower to place assets in the control of the lender, thus removing them from productive use by the borrower. Similarly, relational contracting can require the borrower to invest in relation-specific assets that might have a lower salvage value than other similarly productive assets. Reputational sanctioning, by contrast, does not require any such misallocation of productive assets. Indeed, because reputation has something of a public-good character—the borrower can post it in several places at the same time without dilution—it costs little or nothing for the borrower to post a reputational bond.

Of course, a system of reputational sanctioning could cause losses by inducing borrowers to invest more in the building of their reputation—by advertisement and the like—than they

109. The general idea is not new, as I noted in my preliminary analysis of the topic in Mann, *The Pattern of Secured Credit*, *supra* note 6, at 673-74. I have found the most useful prior work in the area to be Arnoud W.A. Boot & Anjan V. Thakor, *Moral Hazard and Secured Lending in an Infinitely Repeated Credit Market Game*, 35 INT'L ECON. REV. 899, 904-14 (1994) (showing through a formal model how reputational lending can limit the borrower's ability to export risk to the lender by smoothing out profits and losses); Charny, *supra* note 15, at 391-408 (offering a tripartite typology of nonlegal sanctions and explaining the circumstances in which they are more effective than legal sanctions); Douglas W. Diamond, *Reputation Acquisition in Debt Markets*, 97 J. POL. ECON. 828 (1989) (providing a formal model of how borrowers acquire reputation to improve the loan contracts that lenders will offer to them); Kornhauser, *supra* note 4 (providing a formal model of reputation as a substitute for legal remedies).

otherwise would.¹¹⁰ The benefit of reputational sanctioning, however, is that no such investment is required. Indeed, it is doubtful in this context that such an investment would be useful; I rather doubt that lenders will be persuaded of the creditworthiness of borrowers by advertisements that are not accompanied by objective evidence of behavior commonly associated with creditworthiness.

2. When Is Reputational Sanctioning Effective?

The next problem is to consider the circumstances in which reputational sanctioning will be effective. Working from the idea that reputational sanctioning works best when it provides the kind of punitive sanction discussed above, two factors should dictate the efficacy of a reputation-bond arrangement: the value of the reputation to the borrower and the costs that the lender incurs in assessing the borrower's reputation.

The most general point to make about a reputational bond is that for several reasons its value is related to the size of the business to which it attaches. First, the value of the reputation generally is limited by the size of the business, or at most by the value of the potential businesses that the entrepreneur could expect to build if the entrepreneur's reputation remained intact. Accordingly, all things being equal, reputational constraints provide support of a greater absolute value for large firms than they do for small firms. That is not to say that reputation cannot be central to the success of smaller firms; it is easy to imagine a small business that has few substantial assets other than its reputation. For such a business, the reputation might have a larger relative value than it would for a typical business much larger in size.¹¹¹ But notwithstanding that large relative value, the limited absolute value of the small business's reputation should limit the size of the transactions for which that reputation can provide credible support.

Apart from the size of the business, the value of the reputation also depends on the nature of the borrower's business, and in particular on the extent to which the borrower frequently engages in transactions for which its reputation is crucial. That is the familiar "return-to-the-market" point.¹¹² If the borrower is a repeat player that relies on its reputation frequently—such as a large company that issues commercial paper almost every day¹¹³—then its reputation is

110. See Gilson & Kraakman, *supra* note 1, at 619 (discussing investment by sellers in "brand name or reputation as a means of signaling the quality of [their] information"); Benjamin Klein & Keith B. Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. POL. ECON. 615, 626-27 (1981) (modeling the relation between investments in brand name and reliability of quality assurances by producers).

111. Thus, in some contexts small size can enhance the value of the reputation, because loss of the business opportunity in question would be devastating to the borrower. Merritt Fox identifies such a phenomenon for proponents of new inventions in the semi-conductor industry. See MERRITT B. FOX, *FINANCE AND INDUSTRIAL PERFORMANCE IN A DYNAMIC ECONOMY: THEORY, PRACTICE, AND POLICY* 114 (1987).

112. See Charny, *supra* note 15, at 414-15; Mann, *The Pattern of Secured Credit*, *supra* note 6, at 673-74. For an earlier and less generalized discussion, see Gilson & Kraakman, *supra* note 1, at 620 (explaining how the "repeat player" status of investment bankers limits "final period" problems that "dampen" the value of investments in reputation).

113. See Mann, *Searching for Negotiability*, *supra* note 6, at 984-85 (discussing the modern process for the issuance of commercial paper).

particularly valuable because a loss of reputation will harm the borrower swiftly and surely.¹¹⁴ Conversely, if the borrower could continue its business without reputation-dependent transactions, then a loss of reputation would be less costly to the borrower, a feature that limits the value of the reputational bond such a party can post.¹¹⁵ That should not be a problem in the credit markets on which I focus here, because most borrowers are likely to believe that they will need to return to those markets with considerable frequency.

As a related point, the identity of the buyer is part of the calculus of whether transactions are reputation-dependent: large commercial entities are much more likely than consumers to use specialized purchasing agents sensitive to reputational information about the seller.¹¹⁶ Thus, reputational sanctions generally will be more effective in transactions involving acquisitions by sophisticated parties.¹¹⁷

The second factor—the costs that the lender incurs in ascertaining the reputation of the borrower—is considerably more complicated. Three distinct elements are important. The first is size. Because larger entities tend to engage in larger transactions, and because the costs of assessing an entity's reputation should be largely independent of size, the proportionate costs of assessing reputation should grow smaller as the size of the entity and the transaction in question increase. Thus, as a practical matter, it should be relatively less expensive to assess reputation for larger companies.

A second element is the difficulty of discovering the events that have occurred. A reliable mechanism for disseminating reports of reputation-relevant events makes it cheaper for lenders to be sure that they have all of the potential events before them when they evaluate the reputation of the borrower.¹¹⁸ Thus, for example, reputational sanctions against Japanese borrowers are particularly powerful because of a formal mechanism that obligates all banks to provide prompt public notice to a central clearinghouse when any commercial borrower fails to make a scheduled payment on a promissory note.¹¹⁹ As with some of the earlier factors, that factor indirectly creates a tendency toward larger transactions, because the costs of disseminating

114. See, e.g., Kraakman, *supra* note 90, at 96-97 (explaining that reputation is particularly important in cases where sellers expect to engage in future transactions with their buyers); G. Richard Shell, *Opportunism and Trust in the Negotiation of Commercial Contracts: Toward a New Cause of Action*, 44 VAND. L. REV. 221, 268-69 (1991) (explaining how “[p]arties in one-time transactions . . . have limited reputational concerns toward the other party because the parties contemplate no future business dealings”).

115. See POSNER, *supra* note 34, § 4.1, at 91; Klein & Leffler, *supra* note 110, at 617 (using a formal model to show that reputational sanctioning works “only if firms are earning a continual stream of rental income that will be lost if” the firm engages in deceptive conduct).

116. See OLIVER E. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM* 396-97 (1985).

117. That is not to say that reputational sanctions have no force in transactions involving unsophisticated individuals. For example, as Mark Gergen has pointed out to me, reputational sanctions from institutional stockholders might constrain large companies from opportunistic reductions of dividend payouts that otherwise might harm small individual stockholders.

118. See Charny, *supra* note 15, at 418-19; Muris, *supra* note 22, at 527 (“[R]eputation provides little deterrent when potential opportunists can conceal their actions from those with whom they expect to contract.”); Shell, *supra* note 114, at 269-70.

119. See Toshihiro Matsumura & Marc Ryser, *Revelation of Private Information About Unpaid Notes in the Trade Credit Bill System in Japan*, 24 J. LEGAL STUD. 165 (1995). I thank Mark West for calling this reference to my attention.

and acquiring information will be relatively lower for larger transactions than they are for smaller transactions.¹²⁰

The third element that affects the cost of assessing reputation is the objectivity of the reputation-relevant events. If a false assertion by the borrower is clear and indisputable—the borrower failed to honor a letter of credit that it had issued—then a reputation-damaging event is easier to identify than it would be if it is difficult to distinguish between false assertions and true assertions.¹²¹ Thus, reputational sanctioning will work best in transactions for which the parties can establish objective circumstances that are the focal points around which satisfactory performance is assessed.¹²² To the extent that the parties are unable to create such objective reference points, the lawsuit can provide a reasonably effective substitute: a judgment against the borrower provides relatively objective evidence of a negative reputation-relevant event.¹²³

A final point relates the costs of assessment back to the value of the underlying bond. Factors that make it easy to assess reputation do more than lower the costs of evaluating the status of the bond at any time. They also have a second, *ex ante* effect. If the borrower knows before the transaction that its reputation can be evaluated cheaply and accurately at any given time, the borrower knows that it is sure to suffer in the future if information that it has provided turns out to be false. And if the lender knows (as it should) that the borrower is aware of that problem, then the lender should place more reliance on the bond. Essentially, ease of enforcement of reputational sanctions lowers the slippage costs that can hinder the effectiveness of bonds in other areas.¹²⁴

120. See Letsou, *supra* note 27, at 596 (arguing that reputational bonds will be less valuable for consumers because of the limited incentive to gather information about consumers). That point can be overstated, because merchants in some contexts do develop systems for disseminating reputational information even for relatively small transactions. See, e.g., John McMillan & Christopher Woodruff, *Dispute Prevention Without Courts in Vietnam 16-17* (1999) (unpublished manuscript, on file with author) (discussing meetings of Vietnamese merchants designed to disseminate information about the reliability of their customers). Moreover, advances in information technology, of course, can offset that problem. See, e.g., Rafe Needleman, *Why eBay Works and Why Other Auction Sites May Work Even Better*, RED HERRING, Jan. 1999, at 118, 118 (explaining how eBay provides reputational information about parties that provide objects for sale in on-line auctions by providing hypertext links from each seller to the comments of previous purchasers from that seller).

121. See Shell, *supra* note 114, at 270 (noting the problems with reputational sanctions in circumstances in which “reputational facts, if known, are subject to multiple interpretations”).

122. That appears to be the case in commercial lending transactions. As my prior case studies have suggested, sophisticated parties are relatively unlikely to rely on breaches of vague or subjective covenants, and much more likely to focus on defaults with respect to clear and objectively verifiable obligations. Thus, although the dominant concern motivating lenders to terminate relationships generally would be a subjective concern about the borrower’s long-term financial strength, lenders almost invariably took action only in response to an objective problem such as a specific payment default. See Mann, *Strategy and Force*, *supra* note 6, at 174-75 (finance company), 188 (bank), 202-03 (insurance company).

123. See Jonathan Karpoff & John Lott, Jr., *Punitive Damages: Theory and Evidence* (1998) (unpublished manuscript, on file with author) (presenting empirical evidence indicating that punitive-damage awards against publicly traded companies have an adverse reputational effect that lowers the value of the company by an amount significantly larger than the nominal size of the award).

124. See, e.g., Mann, *Temporal Priority*, *supra* note 6, at 34-35 n.85 (discussing the difficulties of enforcing surety bonds issued in the construction-loan context).

III. VERIFICATION BY THIRD PARTIES

As the discussion in Part II suggests, a variety of constraints often make it impractical for parties to use any of the mechanisms described above to verify borrowers' assertions. None of those mechanisms provides a general solution for information problems. Rather, as Part II explains, the effectiveness of each depends on a particular set of transactional circumstances.

With respect to the collateral-related practices discussed in Part IIA, the borrower might not have assets adequate to post a pledge that would satisfy the lender. Alternatively, the opportunity cost of posting such assets might exceed the gains from verification (that is, the higher price that the lender would pay to enhance its ability to distinguish between true and false information). Similarly, the relational-asset solution described in Part IIB is not suited for the frequent one-shot transactions that characterize the mass market; it has value only in contexts that involve a protracted and mutually beneficial interaction between the lender and the borrower. Finally, as suggested in Part IIC2, reputational bonds will not be a useful solution for many businesses: their reputations might not be important to continued successful operations, it might be difficult for lenders to verify their reputations, or lenders might doubt the likelihood that adverse actions would harm the borrowers' reputation.

Another more general possibility noted in Part IC is that the borrower either will not behave with complete rationality, or (a more intractable problem) that the lender will not be able to trust the borrower to behave with complete rationality. Because the bonding mechanisms depend on the likelihood that the incentives that they create will provide effective constraints on the conduct of the borrower, those institutions can be effective only if the lender expects the borrower to respond to the incentives. In many cases, however, the lender cannot expect consistently rational responses. For example, building on work by Bob Scott, I have argued in a previous article that borrowers and lenders in the consumer credit market often fail to reach negotiated solutions because of the lender's lack of certainty about the rationality of its borrowers.¹²⁵ Therefore, the ability of the parties to implement the mechanisms outlined above will be limited in cases where the borrower is not conspicuously rational.

In this part, I consider a common solution for situations in which it is difficult for the borrower itself to solve the information-based concerns of the lender: use of a third party to verify the information. For ease of illustration, I distinguish two general ways in which the third party can verify the borrower's assertions: by offering a financial commitment that would compensate the lender upon falsehood (a guaranty or suretyship arrangement) or by directly asserting the truth of the borrower's assertions.

125. The problem is that it arguably is not cost-effective for lenders to consumers to engage in case-by-case renegotiation of defaulted loans with borrowers, given the limited likelihood that consumer borrowers will both understand the ramifications of the situation that confronts them and respond rationally to that situation. Thus, a rational lender might adopt a single onerous response to defaulting consumer borrowers and use that plan automatically in all cases, without regard to the possibility of profitable renegotiation in particular cases. *See* Mann, *Strategy and Force*, *supra* note 6, at 227-32 (explaining why a harsh stance against default might be preferable to case-by-case assessment) (discussing Scott, *supra* note 25, at 746-51).

A. VERIFICATION BY FINANCIAL COMMITMENT (GUARANTIES AND SURETIES)¹²⁶

In the most well-known third-party solution in financing transactions, the borrower induces a third party to offer its own financial strength to verify the borrower's commitments. The simplest example is a classic surety-bond transaction, in which a bonding company posts assets on behalf of the borrower. Although the transaction at first glance might seem closely analogous to the direct pledge arrangement discussed above, the use of a third party changes the dynamics of the transaction in important ways.

The first is a clear advantage: unlike a classic pledge, a surety-bond transaction usually does not remove assets from productive use. Although in common parlance the surety has "posted a bond," the surety has not actually "posted" any assets with the lender; it has simply exposed itself to legal liability. As discussed in Part II A4, exposure to a false-statement lawsuit can be viewed as a special type of pledge.¹²⁷ The key difference between the classic surety transaction and the classic secured transaction is that the surety transaction can proceed without the borrower or the surety removing any assets from productive use. For reasons that will be discussed below, it is possible that the parties might choose to verify the surety transaction itself by a grant of collateral—for example, in the case of a secured guaranty—but that is not necessary for the transaction to work.

In addition, the surety transaction creates a second occasion for information verification. If the lender wants to rely on the surety to address its concerns about the borrower, the lender needs to evaluate the likelihood that the *surety* will comply with the *surety's* obligation. And for that task, the lender is likely to use the direct two-party institutions described in Part II. Thus, for example, a surety that is in business to provide such assurances (as a bonding company, for example) might use its reputation to assuage the concerns of the lender.

In other contexts, the surety will be less dependent on its reputation: consider the entrepreneur that guaranties the obligation of a small business that it owns. If the guarantied business is the principal enterprise of the entrepreneur, the loss of reputation from failure to perform on the guaranty might seem to the lender inadequate to assure performance.¹²⁸ In such a case, the lender might choose to rely on another method of assuring performance, such as a grant of collateral or even the possibility of a lawsuit to enforce the obligation. But whatever device the parties select, the key structural point is that the lender cannot plausibly rely on the surety's reliability as a substitute for the borrower's without some assurance of the surety's reliability.

126. I do not intend to suggest any legal consequence in the distinction between sureties and guarantors. Under modern law, those differences have only limited practical significance. *See, e.g.*, RESTATEMENT (THIRD) OF SURETYSHIP & GUARANTY § 1 (reporter's note to cmt. c) (1996) ("The distinction, if any, between sureties and guarantors has been the subject of long-lasting debate. For purposes of rights provided by suretyship law, rather than by contract, the two mechanisms are, indeed, identical.") (citations omitted). I try to use whichever of the two terms is most commonly used to describe the transaction in question, with guaranties being used more commonly in purely financial contracts and suretyship being used more commonly in transactions involving some form of performance other than payment.

127. *See* discussion *supra* Part II A4.

128. *See supra* notes 112-115 and accompanying text (explaining how reputational bonds are more valuable when the party whose reputation is at stake frequently returns to the market).

Implicit in the previous paragraph is an assumption that the arrangement satisfies the lender by causing the lender to put faith in the surety directly, *not* by indirectly enhancing the lender's faith in the borrower. The surety transaction has only a limited potential for verifying the first-order information to the lender. By hypothesis, the surety is not directly asserting the truth of the information;¹²⁹ it is agreeing merely to indemnify the lender if the information turns out to be false. In a typical insurance transaction, for example, the surety does not promise that there will be no fires; it compensates for the fires that occur. Similarly in the financial context, the guarantor does not promise that there will be no defaults; it simply agrees to make the promised stream of payments if the primary obligor fails to perform as agreed.

Although that distinction might seem trivial at first, it poses the central difficulty with the arrangement. If the guaranty tells the lender nothing about the truth of the first-order information, it only substitutes the surety's assertions for those of the lender. Except in the case in which the surety is better placed to provide verification of its assertions than the borrower (because of the surety's reputation, for example), that substitution of assertion may do little to assuage the concerns of the lender. Thus, although the lender has obtained a right to sue the surety in the event of falsehood, such a legal right will solve the lender's problem only if that legal right by itself is adequate to verify the surety's assertions.

For a variety of reasons that parallel the problems that make litigation generally problematic as a mechanism for verifying information,¹³⁰ that often will not be true. Consider, among other things, the out-of-pocket costs of enforcing the bond, the surety's ability to interpose technical defenses to enforcement, the likelihood that the nominal amount of the bond will be less than the lender's loss, and the difficulty of ascertaining and proving that a falsehood has occurred.¹³¹ Thus, notwithstanding the right of the lender to pursue the surety, the lender is likely to retain a substantial independent interest in verifying the underlying first-order information.

Hence, in situations in which the guaranty's assertion is inadequately verified, a guaranty arrangement works best when something about the arrangement also increases the confidence of the lender in the underlying, first-order assertion of the borrower. If the surety is acting rationally, then its willingness to accept an obligation to pay the lender upon falsehood should rest on some cost saving from the arrangement. And if the surety cannot provide some improved verification at a cost to the borrower lower than the amount by which the surety's commitment lowers the costs to the lender, the arrangement is irrational from the borrower's perspective.¹³²

The surety can provide that cost saving in two general ways. One possibility is that the surety would have a greater tolerance for the risk of falsehood than the lender. Arguably, the business of the professional surety rests on its ability to aggregate and diversify a large number of

129. For discussion of transactions in which the third party directly asserts the truth of the borrower's assertions, see *infra* Part IIIB.

130. See *supra* text accompanying notes 88-92 (explaining the ineffectiveness of litigation to assure performance).

131. See Mann, *Temporal Priority*, *supra* note 6, at 34-35 n.85 (discussing the difficulties of enforcing surety bonds issued in the construction-loan context).

132. For a formal explication of that point, see Avery W. Katz, *An Economic Analysis of the Guaranty Contract*, 66 U. CHI. L. REV. 47, 68-74 (1999).

risks. But that explanation cannot solve the problem at hand, because many of the lenders in question are likely to be large and sophisticated companies fully capable of diversifying risks.¹³³ More important, when the surety's role is limited to bearing the risk of loss, the surety provides no independent verification to the lender of the underlying first-order information in which the lender is interested. Thus, the lender still must worry about both the accuracy of the borrower's information and the reliability of the surety's verification.

In many contexts, however, sureties appear to provide a second service in addition to risk-bearing. Specifically, sureties often can provide a superior verification institution that gives the lender a better assurance regarding the first-order information than either a simple assertion from the borrower or any other mechanism that the lender could implement directly with the borrower. In many cases, that superior verification institution might be something quite simple, such as effective control of the borrower (in the case where the guarantor is an individual or entity closely related to the borrower). Slightly less definitive but still quite effective would be cases in which a personal relationship between the borrower and the guarantor is sufficient to give the borrower a strong incentive to comply to prevent the adverse effects on the guarantor that would occur from a breach by the borrower.¹³⁴ Similarly, anecdotal evidence suggests that construction lenders rely on bonds more for their informational content than the legal recourse that they provide. The typical construction lender (properly) views its legal recourse on the bond as having little value. But the bonding company's expertise at assessing the skill, probity, and creditworthiness of the contractor provides substantial verification of those matters to the construction lender, even though the surety makes no direct representations regarding those matters.¹³⁵

A similar effect appears in the context of relational guaranties and standby letters of credit.¹³⁶ With respect to guaranties, the lender obtains a financial commitment from a party that has a strong relation with the borrower. Whatever the value of the legal recourse of that commitment,¹³⁷ the overall value of the commitment to the lender is buttressed by the likelihood that the guarantor (or issuer of the letter of credit) is better placed than the lender to verify or assure the truth of the first-order information. For example, in the ordinary arrangement the

133. It underscores the limited explanatory power of the risk-bearing thesis that life-insurance companies—the consummate risk diversifiers—are among the largest lenders (and most frequent seekers of guaranties) in our economy.

134. Cf. Jason DeParle, *As Welfare Rolls Shrink, Burden on Relatives Grow*, N.Y. TIMES, Feb. 21, 1999, § 1, at 1 (discussing the costs imposed on older generations when they have to care for the children of younger relatives who engage in criminal activity).

135. See Interview with Harry C. Mueller, Senior Vice President, Mercantile Bank of St. Louis, N.A., in St. Louis, Mo. (Dec. 11, 1995) (transcript on file with author) (discussing the reasons that construction lenders require their borrowers to obtain bonds); see also Mann, *Temporal Priority*, *supra* note 6, at 34-35 (general discussion of surety bonds issued in the construction-loan context).

136. Although formally distinct, a standby letter of credit is functionally quite similar to a guaranty, with the main difference being the limited defenses available to the issuer of the standby letter of credit. For a general discussion highlighting the similarities, see MANN, PAYMENT SYSTEMS, *supra* note 6, at 372-87.

137. The value of the legal recourse can vary substantially. As a general matter, the letter of credit probably is quite valuable, if only because of the reputational harm to an issuer from failing to honor one. Guaranties, on the other hand, might be considerably less valuable, except in cases in which the guarantor is quite large and established, and thus dependent on a reputation for financial responsibility.

guarantor is a controlling officer or shareholder of the borrower.¹³⁸ Hence, the guarantor has the ability to control the borrower directly and thus ensure that the borrower conducts itself as promised.

The effect of a standby letter of credit is somewhat less direct, but similar. Such a commitment ordinarily is issued by the primary lender to the borrower.¹³⁹ The bank issuing the letter of credit might have a superior ability to verify the truthfulness of the borrower's assertions because of knowledge acquired during its previous relations with the borrower. Less benignly, the issuer of the letter of credit may have the ability (using relational assets along the lines discussed above)¹⁴⁰ to cause the borrower considerable harm if the borrower commits an act that causes the issuer to become obligated to the lender on the letter of credit. Most obviously, the issuer might be able to harm the borrower by terminating all of the issuer's financing arrangements with the borrower.¹⁴¹ That power to punish makes the issuer a more effective enforcer, and thus better placed to verify than the nonrelational lender. But whatever the mechanism on which the issuer relies, the lender that receives a standby letter of credit can take some comfort in the knowledge that the issuing bank has taken some steps to assure itself that its likely exposure on the letter of credit is relatively low. And the existence of those steps gives the lender an independent verification of the truth of the first-order information that is driving the entire arrangement.

One final surety arrangement worthy of mention is title insurance. That industry is peculiar, because it presents a rare case in which parties use a surety relationship to verify statements about historical facts (facts that determine whether the borrower has clear title to specified real estate).¹⁴² In all of the other arrangements discussed above, parties use guaranties

138. See, e.g., Mann, *Small-Business Lending*, *supra* note 6, at 23 (providing anecdotal evidence of the typical relation between a guarantor and its primary obligor).

139. See MANN, *supra* note 6, at 374 (discussing the reasons for the typical relations between an obligor and the issuer of a standby letter of credit).

140. See *supra* Part IIB.

141. See *supra* notes 102-106 and accompanying text (discussing the dynamics of relational lending transactions).

142. A structurally similar phenomenon is the liability of a securities underwriter for a false statement in a prospectus, which supports the factual assertions of the issuer of the securities described in the prospectus. See FOX, *supra* note 111, at 347, 366 (discussing the *in terrorem* effect of Section 11 liability under the securities laws). In that context, however, liability rests on a vague legal standard, and thus is relatively unreliable as a verification institution and yet relatively risky for the underwriter. See *id.* at 346-47 (referring to problems with vague standard of proof). *But cf.* Kraakman, *supra* note 90, at 82-83 (stating that the underwriting community has developed sufficiently specific procedures to protect against the potentially "crippling risk-bearing costs" imposed by Section 11).

The problem is exacerbated because the party with the ability to impose liability—the individual lender (or, more cynically, the lawyer seeking a token plaintiff for a class action)—might have little or no reputational impetus to refrain from pressing a frivolous lawsuit. See Choi, *supra* note 4, at 948 (discussing the problems frivolous securities lawsuits pose for a gatekeeper regime); Shell, *supra* note 114, at 271-72 (discussing the possibility that adding a cause of action for opportunism by one contracting party for wrongful termination of pre-contractual negotiations will lead to opportunistic lawsuits by the other). That distinguishes the situation from the more common and effective situations of interlocking bonds where the party holding the vague enforcement mechanism, such as a lender, is constrained by reputational sanctions from opportunistic exercise of that mechanism. See *supra* note 22 and accompanying text (describing interlocking-bonds arrangement).

and suretyship arrangements to assure the truth of forecasts. Although I cannot explain why such arrangements are not used more often to verify factual assertions, it is easy to see why suretyship arrangements are valuable in the title-insurance context. For one thing, the legal mechanisms for enforcing responsibility for false title assertions by borrowers (suits for breach of title warranties in deeds) are notoriously ineffective.¹⁴³ In addition, the title company's expertise gives it a superior ability to evaluate the truth of the statements of the borrower. Thus, the lender accurately perceives that the title company's willingness to issue a policy carries with it an implicit assertion regarding the state of title that is more reliable than any explicit assertion the lender might obtain from the borrower. That is particularly true given the difficulties that even an honest and diligent seller would have in ascertaining the state of its title to the land in question. Moreover, because the title-insurance company is a repeat player whose profitability depends on a reputation for performance of its commitments, the assurance of that company typically would be much more valuable than the assurance of a seller much more likely to be a one-shot player.¹⁴⁴ Hence, reliance on the title company's assertion mitigates the inherent unreliability of the borrower's assertion.

B. VERIFICATION BY ASSERTION

A more direct way for a third party to verify the borrower's assertion is for the third party to adopt the borrower's assertion and obtain an independent assessment of the truth of the borrower's statement. That arrangement works when the lender has a better way to verify the second-order information provided by the third party than it does to verify the uncertain first-order information provided by the borrower. Essentially, that arrangement provides a mechanism for collecting, evaluating, and verifying what otherwise would be relatively anonymous information about the reputation of the borrower. Thus, institutions implementing that arrangement tend to operate as a supplement to reputational sanctioning against the borrower.

For illustrative purposes, I distinguish three situations that each use a different mechanism for verifying the second-order assertion of the third party: (1) the assertion is provided without monetary compensation; (2) the assertion is provided by an independent third party in return for monetary compensation from the lender (an information merchant); or (3) the assertion is provided by a third party that contracts with the borrower (an information intermediary).

Of course, the fact that Section 11 is not perfect does not prove it is a bad idea. As Reinier Kraakman has shown, it is not clear that reputation works perfectly in the market for provision of information by underwriters. Thus, it is at least possible that Section 11 functions as a value-increasing supplement to reputational sanctioning. See Kraakman, *supra* note 90, at 96-100; see also Choi, *supra* note 4, at 958-59 (recommending the limitation of antifraud liability to enhance the functioning of the private gatekeeper regime).

143. Among the difficulties are (1) the warranties that apply in such cases are not breached by many of the most damaging types of misrepresentation; and (2) the damages available for breaches are in an amount that often would not be close to fully compensatory. See, e.g., GRANT S. NELSON & DALE A. WHITMAN, REAL ESTATE TRANSFER, FINANCE, AND DEVELOPMENT 194-207 (5th ed. 1998) (discussing the difficulties of enforcing warranties in deeds).

144. I thank David Skeel for that point.

1. Free Information (Word of Mouth)

The first is the simplest: the assertions are verified by a third party that operates without monetary compensation or contractual arrangement, essentially by what we would call word-of-mouth advertising. The most obvious problem with that solution is the question of what verifying institution will function between the third party and the lender. The answer is that the verifying institution often is nothing more than unadulterated trust. Thus, that solution tends to work best when the lender and the third party have a personal relationship that extends beyond the transaction for which verification is required.¹⁴⁵

For example, in many contexts it would be common for us to choose from among competing products or services by asking for recommendations from our friends or acquaintances. I myself have used that practice frequently in selecting physicians or veterinarians. Because of the relatively random¹⁴⁶ selection process of persons from whom I inquire (the limited universe of my friends), together with the bonds of friendship, information obtained by that route tends to be relatively unbiased.¹⁴⁷

On the other hand, because the information is free, it might tend to have a value approximating its cost. Freely provided information can be expected to represent the honest opinion of the person providing it, and to reflect that person's anecdotal experience, but it is not likely to reflect the results of the detailed inquiry and analysis that could be provided through the mechanisms discussed below, in which businesses gather and provide information for profit. Thus, it might more frequently be erroneous or incomplete in significant respects.

The limitations discussed above suggest that word-of-mouth advertising should have a limited role in financing transactions. Somewhat surprisingly, however, it seems to play a major role in some important economic sectors, apparently because of the superior ability of that institution to provide unbiased information. Take, for instance, the practice of so-called "angel" investing in venture-capital companies. Angel investing provides an alternative to the more well-known venture-capital investments used to fund high-risk startup companies, especially in technology areas.¹⁴⁸ Although not well known or extensively studied, the amount of funds involved is impressive; a conservative estimate suggests that angels disburse billions of dollars each year to thousands of firms.¹⁴⁹ The typical angel investor is an individual who has become

145. As the sociologists would put it, trust is a function of "embeddedness." See, e.g., Mark Granovetter, *Economic Action and Social Structure: The Problem of Embeddedness*, 91 AM. J. SOC. 481, 490 (1985) (discussing reasons why information from a trusted informant is more reliable).

146. They are random only in the sense that it is unlikely that they will provide generally self-serving recommendations, a feature that makes them superior to some of the alternative mechanisms discussed below. They are not random in the sense that they are likely to provide information about a random subset of the potential service providers. My close friends, for example, might be limited to a particular social milieu that would limit the likelihood that they would be familiar with potential service providers outside that milieu.

147. See Granovetter, *supra* note 145, at 490.

148. See George W. Fenn et al., *The Role of Angel Investors and Venture Capitalists in Financing High-Tech Start-Ups* 11-13 (Dec. 3, 1997) (unpublished manuscript, on file with author) (presenting evidence regarding the relative incidence of angel and venture-capital investors).

149. See *id.*, at 5; Stephen Prowse, *Angel Investors and the Market for Angel Investments*, 22 J. BANKING & FIN. 785, 785-91 (1998) (general discussion of angel investments); Mary Beth Grover, *Starting a Company Is Like Going*

wealthy through previous activity as an entrepreneur supported by venture-capital investment.¹⁵⁰ The most significant difference between the two is that the angel investor ordinarily maintains less rigorously adversarial relations with the entrepreneur.¹⁵¹

The reason for the differing tone of the arrangements is clear from the work of George Fenn and his co-authors.¹⁵² They have presented persuasive empirical evidence indicating that much of angel investing is directed based on word-of-mouth recommendation by close acquaintances.¹⁵³ Because the relevant community is concentrated in a relatively small number of people, word-of-mouth recommendations can provide an unbiased assessment of the caliber of a substantial portion of the many potential borrowers seeking funds.¹⁵⁴ As the example of angel investing demonstrates, word-of-mouth advertising can promote investments of a considerable magnitude in an important sector of the economy. Moreover, George Fenn's results suggest that angel investing extends the range of fundable innovations by permitting investments in smaller and younger companies that would not interest venture capitalists.¹⁵⁵

Another interesting example comes from the recent work of John McMillan and Christopher Woodruff on financing transactions in Vietnam.¹⁵⁶ Their work is fascinating, because it analyzes the institutions that businesses develop for contracting in an economy devoid of any reliable mechanism for legal enforcement.¹⁵⁷ In the absence of any realistic possibility of legal enforcement, the drive for profit has created a laboratory for privately created contractual institutions.

One central institution that McMillan and Woodruff highlight is a form of word-of-mouth information collection. Like the angel investors described above, Vietnam merchants rely heavily on "family ties" and previous business dealings as "sources of information that could

to War, FORBES, Nov. 2, 1998, at 184 (reporting an estimate that angels invested \$10 billion during 1997); Harvard Business School, *The Band of Angels* (Case No. N9-898-188) (Mar. 11, 1998) (unpublished manuscript, on file with author)(detailed description of a large group of angel investors in Silicon Valley).

150. See Fenn et al., *supra* note 148, at 5-6.

151. See Joseph Bankman, *The Structure of Silicon Valley Start-ups*, 41 UCLA L. REV. 1737, 1752 (1994) (reporting that "fear of investor expropriation of gain makes [entrepreneurs] suspicious of venture capitalists"); Fenn et al., *supra* note 148, at 6-7 (discussing the relatively beneficent attitude of angel investors); Utset, *supra* note 52, at 4-5 (same). For a general discussion of the "high-powered" incentives that venture capitalists customarily impose on those in whom they invest, see Utset, *supra* note 52, at 21-39.

152. See Fenn et al., *supra* note 148.

153. See *id.* at 6.

154. Contrary to my expectations, it appears that angel investors are more successful at evaluating investments that are geographically dispersed than venture capitalists. Thus, angel investments appear to be much less concentrated in California than venture-capital investments. See Fenn et al., *supra* note 148, at 16; see also Josh Lerner, *Venture Capitalists and the Oversight of Private Firms*, 50 J. FIN. 301, 312-15 (1995) (presenting empirical evidence of a statistically significant relationship between the likelihood of a venture capitalist sitting on the board of a firm and the distance between the firm's location and the venture capitalist's headquarters).

155. See Fenn et al., *supra* note 148, at 15, 20-21. As Josh Lerner has pointed out to me, the evidence of those more "diverse" investments is scant. Thus, I must acknowledge some doubt about the reliability of the point suggested in the text.

156. See McMillan & Woodruff, *supra* note 106; McMillan & Woodruff, *supra* note 107.

157. See McMillan & Woodruff, *supra* note 106, at 2 (reporting results of survey indicating that less than 10% percent of Vietnamese firms thought that the judicial system could enforce contracts); McMillan & Woodruff, *supra* note 107, at 2, 4, 12 (same).

facilitate initial exchanges.”¹⁵⁸ But those merchants also rely heavily on information-sharing with other merchants, essentially a formalized gossip system. As McMillan and Woodruff explain, “producers of similar goods who are located close to each other continually meet for gossip, and they report that their most frequent topic of conversation is suppliers and customers (ahead of technology, product design, government regulations, and pricing).”¹⁵⁹ Although the authors do not discuss the point expressly, parties apparently have an incentive to provide truthful information because the information exchanges are mutual. In any event, their data indicate that merchants view the information as sufficiently reliable to determine not only the parties with whom to do business, but also such important aspects of the relationship as the amount of trade credit to be extended.¹⁶⁰

The arrangement obviously has limitations. Among other things, it allows merchants to obtain information only about those who have contracted with others whom the merchant can approach for information.¹⁶¹ Nevertheless, it remains surprisingly effective, emblematic of the potential for private institutions unsupported by formal legal sanctions.

158. McMillan & Woodruff, *supra* note 107, at 8 (reporting results of survey indicating that 23% of the managers of customers and 46% of the managers of suppliers were either “family members or friends” or “previous business acquaintances”).

159. *See id.* at 10, 11 (reporting results of survey indicating that 17% of customer relationships and 42% of supplier relationships were initiated based on information from other producers); McMillan & Woodruff, *supra* note 120, at 18-22 (further discussing that point). Janet Landa speculates about a similar mechanism for evaluating the reliability of outsiders in her work on Chinese middlemen groups, but she apparently collected no evidence about such practices. *See* Landa, *supra* note 107, at 359-60.

160. *See* McMillan & Woodruff, *supra* note 106, at 11-12, 18-19 (reporting statistically significant relationship between participation in “gossip” network by the potential lender and the amount of credit granted and received by manufacturer); *id.* at 18 (reporting statistically significant relationship between family relationship with supplier and the willingness of the supplier to grant credit); McMillan & Woodruff, *supra* note 107, at 8-9 (reporting statistically significant relationship between the frequency with which credit is offered to customers at the first transaction and the existence of a personal relationship with the customer that predates that transaction). Trade credit is particularly important because of the relatively limited availability of institutional lending in Vietnam. *See id.* at 12 (reporting results of survey indicating that only 20% of firms received bank financing).

161. *See supra* note 146 (discussing that difficulty as a general problem with word-of-mouth verification systems). That same limitation is evident in rotating credit clubs. *See* Hal Varian, *Monitoring Agents with Other Agents*, 146 J. INST. & THEOR. ECON. 153, 155-69 (1990) (providing a formal analysis of that effect); Lykke Eg Anderson & Osvaldo Nina, *Micro-Credit and Group Lending: The Collateral Effect 2-3* (1998) (unpublished manuscript, on file with author) (describing a “peer screening effect” under which “members [of such groups] choose to be in a group with others whom they believe to be credit-worthy and whom they can rely on to make timely payments” and explaining that the effect is useful “because community members have much better information about each other than the bank has”). Those clubs are common in many American immigrant communities and in numerous less-developed countries in Asia and Africa: the need to rely on community information to assess reliability limits the clubs’ membership to closely-knit ethnic groups. *See* Clifford Geertz, *The Rotating Credit Association: A “Middle Rung” in Development*, 10 ECON. DEV. & CULTURAL CHANGE 241 (1962) (discussing rotating credit associations in Japan, southeast Asia, and Africa); Christine Gorman, *Do-It-Yourself Financing; Loan Clubs Offer Cash and Dreams*, TIME, July 25, 1988, at 62, (discussing rotating credit associations in American immigrant groups); Lan Cao, *Looking at Communities and Markets*, 74 NOTRE DAME L. REV. 841, 874-92 (1999) (describing rotating credit associations in America and elsewhere); *see also* Posner, *supra* note 4, at 168-71 (providing a general economic analysis of rotating credit groups).

2. Information Merchants

The second common institution is for a third party, unrelated to the borrower, to collect the information and sell it to the lender. That is the model commonly used by businesses such as check-verification services and investment newsletters. In that scenario, reputational constraints readily bolster the reliability of the assertions of the third-party information merchant. If the information merchant provides information that is not useful, the market for its information should deteriorate, and eventually the information merchant should fail. Also, if the information merchant has no connection with the borrower, there is no reason to expect its information regarding the borrower to be biased.

A variety of problems traditionally have limited the ability of pure information merchants to proliferate in our economy. The first difficulty is a free-rider problem. Information merchants often can do little to prevent their customers from reselling information that they purchased from the information merchant. If the marginal cost of reproducing the information for resale is quite low (as it normally is), then each customer can resell at a profit (at a price just above that cost).¹⁶² Unless the information merchant can develop institutions to prohibit such reselling by its customers, its prices will be driven down to the marginal cost of copying, which is unlikely to provide a sufficient return to justify continued collection and analysis of information. A related problem is Arrow's well-known information paradox, which shows that it is difficult to sell information "because it is hard for a user to evaluate information without learning it, at which point there is no need to pay for it."¹⁶³

To succeed in the face of those problems, information merchants must do two things. First, they have to provide some credible verification of the information, something ordinarily done with a reputational bond.¹⁶⁴ Second, because of the free-rider problem, information merchants traditionally have succeeded in situations in which information is unusually time-sensitive or repeat transactions are rare, so that the potential benefits from free-riding are small. In those areas, resale of the information would be impractical, either because nobody else would have a use for the information, or because the information would have lost most of its value by the time a purchaser could find someone else to whom it could resell the information.

Consider the two contexts mentioned above: check verification and investment newsletters. In the first context, it would not be practicable for a merchant to save the information it receives on a particular check and attempt to resell the information to another merchant that considers accepting another check from the same consumer on a later date. Among other things, the possibility that the creditworthiness of the consumer would have changed during the intervening time renders the old information stale. Thus, in that case free-riding is difficult because the transactions in which the information would be useful occur at different times, but each calls for current information.

162. See, e.g., FOX, *supra* note 111, at 102-03.

163. FOX, *supra* note 111, at 103; see also ROBERT P. MERGES ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE 765-66 (1997) (explaining Arrow's information paradox).

164. See FOX, *supra* note 111, at 103 (suggesting "an incentive for users to get their information only from suppliers who have established their trustworthiness over a long period of continued relationship").

Similarly, the value of stock tips and similar information in investment newsletters probably degrades quite quickly upon the issuance of the newsletter. Again, that could be true because of external changes in the market that render the information out-of-date. Alternatively, even in the absence of such changes, the information is likely to be disseminated and incorporated into market prices quite quickly after its publication, rendering the information of little continuing value.¹⁶⁵ Thus, the high efficiency of the securities markets in so rapidly dealing with information makes it particularly difficult for free-riding to succeed.¹⁶⁶

In both of those cases, time sensitivity limits the ability of any individual purchaser to resell the information to others that could have purchased directly from the information merchant. Absent such a limitation, however, it is difficult for information merchants to be profitable. Thus, there is little role in the existing commercial marketplace for the information merchant. To be sure, recent advances in information technology have increased the ability of information merchants to protect themselves against retransmittal of their information and presage (in my view) a broad role for information merchants in financing transactions. But those developments are only beginning to appear in the marketplace, and thus remain beyond the scope of this article.¹⁶⁷

3. Information Intermediaries

The final device by which a third party verifies information involves an intermediary. Like those of the information merchant, the assertions of the information intermediary ordinarily are verified by the reputational sanctions that constrain the information intermediary. The difference is that the intermediary does not sell the information as a third party. Instead, the intermediary inserts itself into the transaction between the borrower and the lender, indicating its trust of the borrower by its own willingness to invest in the borrower.¹⁶⁸

By placing itself in the transaction between the borrower to which the information relates and the lenders that wish to take advantage of the information, the information intermediary can

165. See Gilson & Kraakman, *supra* note 1, at 565-92 (discussing the mechanisms by which securities markets rapidly account for new information regarding the value of securities); see also Larry Y. Dann et al., *Trading Rules, Large Blocks and the Speed of Price Adjustment*, 4 J. FIN. ECON. 3, 21 (1977) (summarizing study arguing that the market incorporates the price effect of large-block trades on the New York Stock Exchange in about 15 minutes); Michael T. Maloney & Harold Mulherin, *The Stock Price Reaction to the Challenger Crash* (Dec. 7, 1998) (unpublished manuscript, on file with author) (event study arguing that the market accounted for the crash of the Space Shuttle Challenger by the end of the day on which the crash occurred).

166. Of course, the rosy picture painted in the text is only one possible explanation for such newsletters. It also is possible that the customers of such newsletters are dupes and that the newsletters contain no valuable information not already reflected in existing market prices. Indeed, it also is possible that on some occasions the information in such newsletters reflects fraudulent attempts by insiders to manipulate stock prices by disseminating false or misleading information.

167. See Ronald J. Mann, *Information Technology and Institutions for Verifying Information* (Apr. 1998) (unpublished manuscript, on file with author).

168. For consistency of terminology, I use the terms "borrower" and "lender" throughout this section even though the mechanisms in question typically involve equity investments in issuers by investors, rather than loans to borrowers from lenders.

solve the free-rider problem that afflicts information merchants.¹⁶⁹ Whatever the customers of the information intermediary do with the information, they will have to come to the information intermediary to use the information to invest in the borrower. On the other hand, because the information intermediary gives itself an interest in the borrower, the information that the intermediary provides necessarily is subject to bias. Whether the reputational constraint is sufficient to overcome the perception of bias is a context-sensitive question. But it should be clear that the arrangement will work only in areas where reputational constraints are powerful.¹⁷⁰

The most obvious example of this institution is the commonly described phenomenon of reputational intermediation in the securities markets. As Ron Gilson and Reinier Kraakman first explained, the investment bank appears to serve a function beyond its nominal tasks of collecting and evaluating information about the borrower and marketing the borrower's securities to potential lenders. Specifically, the investment bank "rents" its own reputation to the borrower as a bond for the quality of the information associated with the issue.¹⁷¹ Similarly, stock exchanges at one point in time seem to have provided a similar service, verifying the quality of companies by agreeing to list their securities.¹⁷²

It is difficult to assess the extent to which current lenders rely on the reputation of the intermediary,¹⁷³ but the limited empirical evidence suggests that the effect is significant in at least some contexts.¹⁷⁴ In any event, the elegant structure of the institution is easy to see. The reputation of the intermediary (third-order information) verifies the assertion of the intermediary

169. See FOX, *supra* note 111, at 102-03.

170. That assumes (as I believe) that any remedy the legal system might provide against the information intermediary is either ineffective or counterproductive. See *supra* Part IIA4 and note 142.

171. The classic explication appears in Gilson & Kraakman, *supra* note 1, at 618-21. A brief suggestion of the effect appeared several years earlier in Hayne E. Leland & David H. Pyle, *Informational Asymmetries, Financial Structure, and Financial Intermediation*, 32 J. FIN. 371, 383-84 (1977). Gilson and Bernie Black extend that analysis to the venture-capital context in Black & Gilson, *supra* note 97, at 254-55.

172. See Jonathan R. Macey & Hideki Kanda, *The Stock Exchange as a Firm: The Emergence of Close Substitutes for the New York and Tokyo Stock Exchanges*, 75 CORNELL L. REV. 1007, 1023-24 (1990). Macey and Kanda argue that other reputational intermediaries have displaced the role of the New York Stock Exchange as a reputational intermediary. See *id.* at 1040-42. They do believe, however, that reputational intermediation remains an important function of the Tokyo Stock Exchange. See *id.* at 1048-49.

173. Saul Levmore, for example, finds Gilson and Kraakman's explanation completely unpersuasive. See Saul Levmore, *Efficient Markets and Puzzling Intermediaries*, 70 VA. L. REV. 645, 657-59 (1984).

174. See, e.g., Richard B. Carter & Frederick H. Dark, *An Empirical Examination of Investment Banking Reputation Measures*, 27 FIN. REV. 355, 360-71 (1992) (reporting statistically significant inverse relation between reputation of the underwriter [as measured by placement in "tombstone" advertisements] and both initial underpricing of the issue [as measured by first-day return] and risk of the issue [as measured by variance over the first 20 days after issuance]); Richard B. Carter & Steven Manaster, *Initial Public Offerings and Underwriter Reputation*, 45 J. FIN. 1045, 1059-62 (1990) (reporting evidence of a statistically significant inverse relation between reputation of the underwriter [as measured by placement in "tombstone" advertisements] and initial underpricing of the issue [as measured by two-week market-adjusted return]); Gompers & Lerner, *supra* note 22, at 30 (reporting statistical evidence of a positive relation between the performance of the initial public offerings of venture-capital supported firms and the relative reputation of the underwriters of the offerings); Kenneth A. Carow, *Underwriting Spreads and Reputational Capital: An Analysis of New Corporate Securities* (1998) (unpublished manuscript, on file with author) (reporting a statistically significant relation between barriers to entry into new product lines, as measured by spreads on products issued in new lines, and the general reputation of the underwriter).

(second-order information), which in turn verifies the assertions of the borrower (first-order information). Here, as with the word-of-mouth transactions described above, the intermediary is useful because of the superior value of its reputational bond. The information intermediary tends to be large, well known, and a frequent participant in the financial markets.¹⁷⁵ The borrower in those transactions, by contrast, is often a smaller or newer company that has not built a financial structure dependent on constant access to the financial markets. As a result, the reputational bond of the borrower is less valuable.¹⁷⁶

CONCLUSION

This article is but a first step in a new direction. With that in mind, I hope the article has done two things. The first is to provide a broad framework for understanding the devices that commercial enterprises use to resolve information problems that confront them. By describing the deep structure that those institutions share, I hope that I have illuminated the many similarities that tie together seemingly disparate arrangements.

That effort—grounded in the details of particular contexts—leads directly to the second goal. At the contextual level, I hope to have provided enough detail about a few particular verification institutions to further our understanding of how the institutions actually work to lower transaction costs and thus facilitate contracting. Also, by underscoring the extent to which parties rely on multiple overlapping devices at the same time—often combining reputation with some publicly supported remedy—the article should show how truly similar in function the public and privately ordered remedies really are. That contextual understanding should be the most valuable contribution of the work, because an understanding of the mechanics of those institutions is a necessary premise for any thoughtful evaluation of the policy implications of any of those institutions. Among other things, it should be more difficult to justify condemnation of the conduct if it appears to be a normal and comprehensible response to an informational problem instead of an inexplicable exercise of leverage.¹⁷⁷

To call this article a first step is to suggest other steps. The work readily calls for extension in two directions. The first is to take it forward in time. The institutions discussed in this article are by definition institutions for resolving problems about information. But any institution related to information will be powerfully affected by the rapid changes in information

175. See Gilson & Kraakman, *supra* note 1, at 620 (explaining how “repeat player” status of investment bankers limits “final period” problems that “dampen” the value of investments in reputation); see also Leland & Pyle, *supra* note 171, at 383-84 (explaining that an informational intermediary can succeed only if it has a mechanism for convincing investors to rely on the information that it gathers). For a discussion of potential problems in relying on the reputational bonds of underwriters and similarly situated parties, see Choi, *supra* note 4, at 924-27.

176. See Gilson & Kraakman, *supra* note 1, at 619-20 (discussing problems with the reputational bonds of smaller securities issuers); Curtis J. Milhaupt, *The Small-Firm Information Problem: Private Information and Public Policy*, 2 J. SMALL & EMERGING BUS. L. 177, 180-82 (1998) (discussing the information problems that afflict small businesses); discussion *supra* Part IIC2 (discussing conditions in which reputational sanctioning is effective and ineffective).

177. See, e.g., Jolls et al., *supra* note 51, at 1510-15 (arguing that principles of behavioral economics justify banning transactions that occur “at terms far from the terms on which those transactions generally occur in the marketplace”) (emphasis omitted).

technology that fundamentally alter our ability to obtain, analyze, and disseminate information. No discussion of those institutions can be complete without an assessment of how the developments of sophisticated information technology will alter the institutions.

Although this is not the place for a complete analysis,¹⁷⁸ it seems likely that advances in information technology will alter those institutions profoundly. Four effects are salient. First, and most directly, by lowering the costs of evaluating information, those advances will make direct verification of information more practical and thus in some contexts remove any need for the indirect verification institutions discussed in this article. Second, the advances should enhance the effectiveness of reputational sanctions by lowering the costs creditors incur in ascertaining and assessing reputation. Third, by lowering the costs of processing information, they already have broadened substantially the fields within which reputational intermediation can be effective: a technique that once was limited to the most creditworthy blue-chip stocks has been extended through the process of securitization to home mortgages, credit-card receivables, and other obligations of similarly dubious reliability. Finally, advances in software technology should solve the free-rider problems that hitherto have limited the role of information merchants.

The second step for extension involves the general relation between commercial law and commercial practice. One of the most intractable problems in commercial law is the interaction between the privately formulated norms and practices of commercial parties and the publicly formulated rules that the law provides for those parties' transactions.¹⁷⁹ As a number of scholars have recognized, it is too simplistic to treat the codification of commercial law as a codification of the norms reflected in everyday business practices.¹⁸⁰

This work suggests the potential for a similar dissonance between legal rules and nonlegal sanctions. The mechanisms discussed here necessarily involve the harsh exercise of power in commercial transactions. Concerns about the exercise of that power are underscored by the likelihood that the power often will be exercised by a larger and more experienced entity (the typical commercial lender) against a smaller and less experienced entity (the typical party seeking funds). The natural impulse of the law would be to respond to that harshness by limiting the potential for the exercise of that power.¹⁸¹

But that response would be too easy. Legal rules cannot eradicate the mechanisms that I have described any more than they could eradicate the institution of secured credit. As several of the examples in this article suggest, efforts to prohibit the use of the most effective institutions inevitably lead businesses to use less effective institutions—which are more costly but sufficiently invisible to the legal system to be beyond the reach of the prohibitions available to policymakers. Thus, policymakers who want to affect the tenor of commercial life must work to

178. This paragraph summarizes a forthcoming paper that analyzes the topic in detail. For further explication, see Mann, *supra* note 167.

179. For two of the most interesting treatments of that topic, see Bernstein, *supra* note 4; Charles J. Goetz & Robert E. Scott, *The Limits of Expanded Choice: An Analysis of the Interactions Between Express and Implied Contract Terms*, 73 CAL. L. REV. 261 (1985).

180. See, e.g., Bernstein, *supra* note 4, at 1820-21.

181. See, e.g., MacNeil, *supra* note 40, at 1056-62 (arguing that American law includes a general preference against permitting the exercise of power in contracting relations).

develop rules that account for the legitimate needs reflected in the reality of commercial transactions. As always, I hope that my work provides a glimpse of that reality.