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Value from Tort Claimants in
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Abstract:

Many scholars question the priority enjoyed by secured debt in bankruptcy. They fear that secured debt will be used to inefficiently redistribute value away from pre-existing unprotected creditors of a firm. These scholars advocate a host of legal innovations, such as “superpriority” for tort claimants with respect to other creditors, to mitigate the redistributive problem. Other scholars minimize the redistributive problem, however, and argue that priority for secured credit is efficient. To help resolve this debate, this paper examines the redistributive theory from an empirical perspective. In particular, the paper focuses on secured debt usage by publicly traded firms facing large tort liabilities (“high-tort” firms). In theory, secured debt should be attractive for high-tort firms because they have a large class of unsecured and uncovenanted creditors (tort claimants) exposed to redistribution in bankruptcy through the use of secured credit. The paper’s empirical analysis contradicts the redistributive theory’s prediction, however. High-tort firms have unusually *low* amounts of secured debt. While this result is very difficult to explain under the redistributive theory, it can readily be explained according to other theories of secured debt. Several important policy implications for bankruptcy priorities follow from these findings.

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Introduction

Secured creditors enjoy priority status in bankruptcy with respect to other creditors.¹ While the rule is well-established, its desirability is the subject of a long-running scholarly debate.² Some academics assert that priority for secured debt promotes inefficient uses of secured debt as a means of redistributing value away from unsecured creditors toward those with collateral.³ Late arriving secured creditors can leapfrog earlier unsecured creditors, redistributing value to the benefit of the issuer and the

¹ See 11 U.S.C. §§ 361-364. The priority of secured creditors is protected by the “adequate protection” clauses of these sections, which ensures that holders of collateral whose repossession has been stayed by bankruptcy should receive the full amount of their secured claim by the end of the bankruptcy process.

² Professor Scott’s invaluable review article dates the debate to 1978. See Robert Scott, *The Truth About Secured Financing*, 82 CORNELL L. REV. 1436, 1437 n.1 (1997). Some of the many articles developing the debate include Barry E. Adler, *An Equity-Agency Solution to the Bankruptcy Priority Puzzle*, 22 J. LEGAL STUD. 73 (1993); Douglas Baird, *The Importance of Priority*, 82 CORNELL L. REV. 1420 (1997); Lucian Arye Bebchuk & Jesse M. Fried, *The Uneasy Case for the Priority of Secured Credit in Bankruptcy*, 105 YALE L.J. 857 (1996) [hereinafter Bebchuk & Fried, Uneasy Case 1]; Lucian Arye Bebchuk & Jesse M. Fried, *The Uneasy Case for the Priority of Secured Credit in Bankruptcy: Further Thoughts and a Reply to Critics*, 82 CORNELL L. REV. 1279 (1997) [hereinafter Bebchuk & Fried, Uneasy Case 2]; F.H. Buckley, *The Bankruptcy Priority Puzzle*, 72 VA. L. REV. 1393 (1986); David Gray Carlson, *Secured Lending as a Zero-Sum Game*, 19 *Cardozo L. Rev.* 1635 (1998); Steven L. Harris & Charles W. Mooney, Jr., *A Property-Based Theory of Security Interests: Taking Debtors’ Choices Seriously*, 80 VA. L. REV. 2021 (1994); Steven L. Harris & Charles W. Mooney, Jr., *Measuring The Social Costs And Benefits And Identifying The Victims Of Subordinating Security Interests In Bankruptcy*, 82 CORNELL L. REV. 1349 (1997); John Hudson, *The Case Against Secured Lending*, 15 INT’L REV. L. & ECON. 47 (1995); Thomas H. Jackson & Anthony T. Kronman, *Secured Financing and Priorities Among Creditors*, 88 YALE L.J. 1143 (1979); Hideki Kanda & Saul Levmore, *Explaining Creditor Priorities*, 80 *Va. L. Rev.* 2103 (1994); Saul Levmore, *Monitors and Freeriders in Commercial and Corporate Settings*, 92 YALE L.J. 49 (1982); Lynn M. LoPucki, *The Unsecured Creditor’s Bargain*, 80 *Va. L. Rev.* 1887 (1994); Ronald J. Mann, *Explaining the Pattern of Secured Credit*, 110 *Harv. L. Rev.* 625 (1997); Randal C. Picker, *Security Interests, Misbehavior, and Common Pools*, 59 *U. Chi. L. Rev.* 645 (1992); Steven L. Schwarcz, *The Easy Case for the Priority of Secured Claims in Bankruptcy*, 47 *Duke L.J.* 425 (1997); Alan Schwartz, *Security Interests and Bankruptcy Priorities: A Review of Current Theories*, 10 J. LEGAL STUD. 1 (1981) [hereinafter Schwartz, Bankruptcy Priorities]; Alan Schwartz, *The Continuing Puzzle of Secured Debt*, 37 VAND. L. REV. 1051 (1984) [hereinafter Schwartz, The Continuing Puzzle]; Alan Schwartz, *Taking the Analysis of Security Seriously*, 80 *Va. L. Rev.* 2073, 2075-81 (1994); Alan Schwartz, *Priority Contracts and Priority in Bankruptcy*, 82 *Cornell L. Rev.* 1396 (1997) [hereinafter Schwartz, Priority Contracts]; Robert E. Scott, *A Relational Theory of Secured Financing*, 86 COLUM. L. REV. 901 (1986); Paul M. Shupack, *Solving the Puzzle of Secured Transactions*, 41 *Rutgers L. Rev.* 1067 (1989); George G. Triantis, *Secured Debt Under Conditions of Imperfect Information*, 21 *J. Legal Stud.* 225 (1992); George G. Triantis, *A Free-Cash-Flow Theory of Secured Debt and Creditor Priorities*, 80 *Va. L. Rev.* 2155, 2162 (1994); Elizabeth Warren, *Making Policy With Imperfect Information: The Article 9 Full Priority Debates*, 82 *Cornell L. Rev.* 1373 (1997); James J. White, *Efficiency Justifications for Personal Property Security*, 37 VAND. L. REV. 473 (1984).

³ See, e.g., Bebchuk & Fried, Uneasy Case 1, *supra* note 2; Bebchuk & Fried, Uneasy Case 2, *supra* note 2; Hudson, *supra* note 2; LoPucki, *supra* note 2; Warren, *supra* note 2.

secured creditor but to the detriment of unsecured creditors and, possibly, to social efficiency. Other scholars minimize the importance of the redistributive motive and claim that the priority of secured debt mitigates agency conflicts between borrowers and lenders and facilitates efficient loans that could not occur if secured credit were not awarded priority.⁴

In a review article, Professor Robert Scott summarized the debate as follows.

To some extent, [the] leverage [afforded by secured debt] seems to be a singularly useful means of reducing conflicts of interest inherent in financial contracting relationships. These benefits are efficiency enhancing. To some degree, however, [the] leverage [afforded by secured debt] also appears to be a singularly useful means of enhancing the creditor's probability of repayment relative to other creditors. If, as seems plausible, some (or many) of these other creditors do not adjust to this reduction in bankruptcy share, there is a redistributive benefit to the creditor that the debtor does not fully internalize in assessing its total interest bill. This, then, would lead to some inefficient uses of security (as well as raise problems of distributional fairness). The question, in short, is simple: What are the relative values of these two offsetting effects? At this point we do not have a clue.⁵

This article attempts to “get a clue”. If redistribution constitutes a principal motive for secured debt, then firms with greater opportunities for redistribution should issue more secured debt than other firms.⁶ In particular, firms facing outsized, non-insurable tort liabilities should issue large amounts of secured debt. Tort claimants are the paradigmatic “non-adjusting” unsecured creditor.⁷ Tort claimants cannot demand

⁴ See, e.g., Carlson, *supra* note 2; Harris & Mooney, Property Based Theory, *supra* note 2; Harris & Mooney, Measuring, *supra* note 2; Kanda & Levmore, *supra* note 2; Schwarcz, *supra* note 2; Schwartz, Priority Contracts, *supra* note 2.

⁵ Scott, *supra* note 2, at 1461.

⁶ See, e.g., Schwartz, Bankruptcy Priorities, *supra* note 2, at 30 (stating that the “distributional explanation predicts that firms will issue secured debt only when a substantial number of their creditors are uninformed”).

⁷ For example, tort claimants are listed first in the taxonomy of non-adjusting creditors described by Bebchuk and Fried. See Uneasy Case 1, *supra* note 2.

covenants to prevent against being leapfrogged by later secured creditors, nor can they demand an interest rate premium in lieu of covenant protection. Unlike other creditors, they are exogenously unsecured (by virtue of the legal system). Firms facing large (and potentially terminal) liabilities should capitalize on this vulnerability by issuing large amounts of redistributive secured debt. The tortfeasor firm would pay lower interest rates on secured debt than on unsecured debt because a secured creditor will be paid in full before tort claimants receive any distribution should the tort liability ultimately force the company into bankruptcy.

Other rationales for secured debt make sharply contrasting predictions for the amount of secured debt likely to be issued by firms facing large tort liabilities (“high-tort firms”). While such firms are at risk of bankruptcy, they are unlikely to experience the agency problems thought to characterize secured debt issuers under alternate theories of secured debt. For example, secured debt is unlikely to prevent high-tort firms from “risk-shifting” towards riskier projects because the firm’s income production is not the source of the bankruptcy risk; instead it is the firm’s tort liabilities that are the problem. Similarly, firms facing large tort liabilities, such as tobacco firms, are not the type of firm likely to need secured debt as a commitment device.⁸ Large tobacco firms can credibly commit to avoid debt-dilution through the use of covenants, making costly secured debt unattractive as a commitment device. Finally, high-tort firms may produce stable cash flows—limiting the attractiveness of the “financial slack” proffered by secured debt.⁹

⁸ See Alan Schwartz, *Priority Contracts*, *supra* note 2, at 1412 (suggesting that borrower’s who cannot credibly commit to obey non-dilution covenants may choose to issue secured debt).

⁹ See George Triantis, *Financial Slack Policy and the Laws of Secured Transactions*, 29 J. LEGAL STUD. 35 (2000).

Consequently, high-tort firms offer an ideal test case of the redistributive theory of secured debt. If redistribution is a prime motive for secured debt, then such firms should issue large amounts of secured debt. If redistribution is relatively unimportant, then firms facing large tort liabilities should not issue unusual amounts of secured debt.

The “answer” to the question of whether or not high-tort firms issue large amounts of secured debt has implications for many of the debates raging around the priority of secured debt. First, many commentators, assuming that redistribution from tort claimants occurs, have argued for a change in legal regime towards one awarding super-priority to tort claimants with respect to other creditors.¹⁰ If tort liabilities lead to redistributive secured debt issuance, then priority for secured creditors with respect to tort claimants is both unfair and inefficient. Secured creditor priority is unfair because tort claimants receive less than they are entitled to, and cannot receive a higher award to compensate them for the risk that their claims will be subordinated by secured claimants in bankruptcy. It is inefficient because it dilutes the incentives for potential tort-feasing companies to take precautions against injuries and encourages such companies to use secured debt in situations where, redistribution aside, they would prefer to issue

¹⁰ See, e.g., Barry Adler, *A World Without Debt*, 72 WASH U. L.Q. 811, 826 (1994); Kathryn R. Heidt, *Cleaning Up Your Act: Efficiency Considerations in the Battle for the Debtor's Assets in Toxic Waste Bankruptcies*, 40 RUTGERS L. REV. 819, 851-63 (1988); Rebecca J. Huss, *Revamping Veil Piercing for All Limited Liability Entities: Forcing the Common Law Doctrine into the Statutory Age*, 70 U. CIN. L. REV. 95, 133 (2001) (arguing that tort claims should be given superpriority in bankruptcy because tort creditors have no ability to allocate risks or demand security); David W. Leebron, *Limited Liability, Tort Victims, and Creditors*, 91 COLUM. L. REV. 1565, 1643 (1991); Lynn M. LoPucki, *supra* note 2; Note, *Switching Priorities: Elevating The Status Of Tort Claims In Bankruptcy In Pursuit Of Optimal Deterrence* 116 HARV. L. REV. 2541, 2562 (2003). See generally Andrew Price, Note, *Tort Creditor Superpriority and Other Proposed Solutions to Corporate Limited Liability and the Problem of Externalities*, 2 GEO. MASON L. REV. 439 (1995).

unsecured debt. As a result, super-priority for tort claimants makes good sense— assuming that secured debt is actually used to expropriate value from tort claimants.¹¹

Similarly, other commentators have pointed to redistribution as a rationale for adjusting the priority of secured credit more generally. Bebchuk and Fried explain that tort claimants are not the only non-adjusting creditors. Other non-adjusting creditors include trade creditors and all prior unsecured creditors of a debtor who is considering borrowing on a secured basis. Because secured credit redistributes value away from these third parties, there may be more secured debt than the socially efficient amount.¹² To prevent inefficient use of secured debt, Bebchuk & Fried, among others, advocate deviations from full priority for secured credit in favor of adjustable rules that enable sharing of assets between secured and unsecured creditors.¹³ Again, however, if redistribution is not an empirically important phenomenon, then the impetus for this change disappears.

Finally, a finding that high liability companies issue secured debt would provide evidence to support the claim that companies alter their capital structure to avoid tort liability.¹⁴ If companies behave this way, then fears about the “death of liability” are more than idle worries and reforms to the tort system will be essential to prevent

¹¹ Awarding superpriority to tort claimants may prove to be sound policy even if secured debt is not used to redistribute value away from secured creditors. The arguments presented here and elsewhere in favor of super-priority will not apply, however. Instead, scholars must formulate new arguments in favor of the change.

¹² This argument alone explains too much, as it implies that all credit should be secured. See Schwartz, *Bankruptcy Priorities*, *supra* note 2; Adler, *supra* note 2, at 74. As a result, Bebchuk & Fried include redistribution as one of several explanations for secured debt. See Bebchuk & Fried, *Uneasy Case 1*, *supra* note 2, at 880-904.

¹³ Even if these non-adjusting creditors receive a premium for the risk of redistribution, secured debt will be used too frequently from an efficiency standpoint, with a resultant deadweight loss. See Bebchuk & Fried, *Uneasy Case 1*, *supra* note 2, at 880-904.

¹⁴ See generally Richard Brooks, “Liability and Organizational Choice,” 45 *Journal of Law & Economics* 91 (2002); Al H. Ringleb & Steven N. Wiggins, “Liability and Large-Scale, Long-Term Hazards,” 98 *J. Pol. Econ.* 574 (1990);

companies from avoiding liability through legal manipulations.¹⁵ If companies do not use secured credit to avoid liability, however, then it is unlikely that companies will favor more radical rearrangements to capital structure where the benefits of avoiding liability are more nebulous than the case of secured credit. In total, a finding that companies facing large tort liabilities “load up” on secured debt would have important implications for the future direction of the law at the intersection of bankruptcy, corporate law, torts, and secured transactions.

Although the stakes are high, there has been little if any empirical investigation of the use of secured credit to redistribute value away from tort creditors. Indeed, one scholar decried the general “lack [of] any persuasive empirical data” in the secured debt literature.¹⁶ While several financial and legal scholars have investigated the use of secured lending, these papers have either ignored the redistributive motive or focused on the use of secured credit for redistribution against general unsecured creditors.¹⁷ To this point, the use of secured credit to redistribute value away from tort claimants remains unexplored, in spite of the fact that redistribution from tort claimants is both interesting by itself and provides an ideal test case for the redistributive theory more generally.

This article tests the hypothesis that firms facing large tort liabilities will redistribute value away from tort claimants using secured debt. As described above, tort

¹⁵ See Lynn M. LoPucki, *The Death of Liability*, 106 YALE L.J. 1 (1996).

¹⁶ Scott, *supra* note 2, at 1437; Warren, *supra* note 2, at 1374.

¹⁷ Several empirical finance papers study the priority pattern of lending in light of economic theories of corporate finance. See, e.g., Michael J. Barclay & Clifford W. Smith Jr., *The Priority Structure of Corporate Liabilities*, 50 J. FIN. 899 (1995); Allen N. Berger & Gregory F. Udell, *Collateral, Loan Quality, and Bank Risk*, 25 J. MONETARY ECON. 21 (1990). These papers do not consider the role of tort liability or the priority status of tort creditors in their consideration of loan priorities, however. In an important paper, Ronald Mann interviewed individuals involved in secured lending and examined their attitudes with respect to redistribution. See Mann, *supra* note 2. Mann, however, also does not examine the implications of tort claimants for the desirability of secured lending

claimants are the paradigmatic example of the unsecured creditor in danger of expropriation through the use of secured debt. First, the article examines several different methods of identifying companies at high risk for mass tort bankruptcies. Next, financial data for these companies and for other publicly traded companies from the COMPUSTAT database published by Standard & Poor's¹⁸ is collected and evaluated. Using several methods of statistical analysis and controlling for many other factors, the amount of secured debt held by high-tort firms is compared to the amount of secured debt held by otherwise similar companies that do not face large tort liabilities.

The results are striking. Companies facing large tort liabilities *do not* issue abnormal amounts of secured debt. Instead, high-tort firms appear to issue less secured debt than otherwise similar companies not facing bankruptcy. Moreover, these results are robust to many specifications, strongly suggesting that these findings are not the result of some quirk in the data but rather are a genuine phenomenon. Individual examples comport with the statistical trends. For example, companies headed for mass tort bankruptcy as a result of asbestos liability have considerably less secured debt one year before declaring than the average firm within one year of a bankruptcy declaration.¹⁹ Large cigarette manufacturers also are likely candidates to use secured debt to redistribute value away from tort creditors should tort liabilities bankrupt these firms. And yet Phillip Morris, the nation's largest tobacco company, had no secured debt in the years 2000 and 2001.

¹⁸ COMPUSTAT is available online (with a subscription) at www.compustat.com. It can also be obtained through the Wharton Research Data Service (WRDS) at <http://wrds.wharton.upenn.edu/>.

¹⁹ See *infra* Part IV.

The results contradict the redistributive theory of secured debt. If redistribution does not occur against non-adjusting tort claimants, it is unlikely to occur in other contexts. The results are consistent with the reduction-of-agency-costs explanation for secured debt, however. Tobacco companies and companies with large asbestos liabilities, for example, are not like other firms in financial distress. They are successful companies in relatively mature industries. Firms in industries such as these encounter relatively small agency costs relative to other firms. As a result, the agency-mitigating features of secured debt are relatively unattractive to these firms. If firms issue secured debt primarily to mitigate agency costs (and not for redistribution), then these firms should not have large amounts of secured debt—a prediction confirmed by the findings presented in this paper.

Indeed, firms with large tort liabilities may be particularly averse to secured debt. A number of observers have noted that secured creditors have a tendency to prefer liquidation over reorganization in bankruptcy.²⁰ Mass tort bankruptcy candidates are more likely to be viable firms than other firms in financial distress--their bankruptcy is not the result of a failing business model but rather is caused by tort. As a result, reorganization will tend to be more attractive for these firms than others. Knowing this, a firm at risk of mass tort bankruptcy may prefer to limit the amount of secured debt to facilitate a successful reorganization in bankruptcy.

²⁰ See, e.g., J. Bradley Johnston, *The Bankruptcy Bargain*, 65 *Am. Bankr. L.J.* 213, 246 (1991). For a judicial recognition of this tendency of secured creditors, see *In re Bermec Corp.*, 445 F.2d 367, 369 (2d Cir. 1971) (stating that “[w]e are conscious of the deep concern of the manufacturing secured creditors lest their security depreciate beyond adequate salvage, but we must balance that with the Congressional mandate to encourage attempts at corporate reorganization where there is a reasonable probability of success.”)

Several normative recommendations follow from these results. First, superpriority for tort claimants in bankruptcy solves a problem that is not empirically significant. If firms are not expropriating value from tort claimants under the present priority scheme, then the inefficiencies and inequities decried by advocates for superpriority are exaggerated. While there are still justifications for superpriority, the benefits of the change must be weighed against the costs of a change in legal regime. Second, as Professor Scott notes, “if nonadjusting creditors are statistically insignificant ... then the redistributive claim largely fails and the observed preference of many market actors for secured credit is strong evidence of the dominating effects of its cost-reducing properties.”²¹ Therefore, proposals to change the current regime of full priority for secured claims on behalf of non-adjusting creditors are empirically unsupported. Finally, these results contradict those advocating changes in liability regimes because of fears that firms adjust their capital structure to minimize liability.²²

This Article proceeds as follows. Part II examines the secured debt debate and provides a theoretical framework for the empirical results presented below. Part III describes the data collection process and examines means of identifying high-tort risk companies. Part IV presents statistical analysis of the relation between tort risk and secured debt usage. Part V evaluates and interprets the results in the context of the theoretical framework presented in Part II. Part VI concludes.

²¹ Scott, *supra* note 2, at 1462.

²² Note that many of these conclusions are cautionary in nature. The empirical results serve more to contradict one theory of secured debt—the redistributive theory—than to support another theory in particular.

I. Explaining the Use of Secured Debt

Firms face a choice between issuing secured and unsecured debt. Unsurprisingly, secured debt has both benefits and costs relative to unsecured debt.²³ Secured debt's priority status in bankruptcy plays an important role in defining these benefits and costs. The debate described in the introduction, and the empirical analysis presented below, examines the relative size and importance of these costs and benefits. This Part describes these costs and benefits of secured debt to provide a framework for the empirical examination presented below.

A. The Costs of Secured Debt from a Firm's Perspective.

Scholars have identified several costs associated with secured debt with respect to other forms of debt. Bebchuk & Fried identify three primary categories of costs. These are “(1) ‘contracting costs’—including the cost of negotiating and perfecting the security interest; (2) ‘enforcement costs’—the costs of policing the collateral; and, perhaps most importantly, (3) ‘opportunity costs’—the costs created when the security interest prevents the borrower from pursuing efficient activities.”²⁴ While many of these costs may be born directly by the secured lender, the debtor must pay a higher interest rate to compensate the lender for these expenses.

²³ These benefits and costs must vary from firm to firm because some firms issue no secured debt, others issue only secured debt, while a third category issues both secured and unsecured types. See Adler 73, 74 (1993) (describing the puzzle that secured credit is valuable but not ubiquitous). Adler's observation relies heavily on earlier work by Schwartz, Bankruptcy Priorities, *supra* note 2, at 24-25. Therefore any theory that predicts that secured debt should be either non-existent or ubiquitous fails the armchair verification test.

²⁴ Bebchuk & Fried, Uneasy Case 1, *supra* note 3, at 877.

Professor Mann's investigation suggests that enforcement costs are considerably higher for secured loans than for unsecured loans.²⁵ Secured lenders must monitor their securities to ensure that their rights are protected. This monitoring is costly.²⁶

The largest cost associated with secured debt relative to unsecured is the prevention of efficient investment activities. A secured lender may prevent its collateral from being used in a productive investment if it fears that the investment may reduce the lender's recovery (even if the investment is profitable on average). Renegotiation of a secured loan may ameliorate this problem, but the renegotiation is itself costly. As one borrower quoted by Professor Mann stated about a secured loan, "you just don't have the same flexibility of dealing with your properties as if you owned them unencumbered."²⁷ This loss of flexibility is costly for the secured debt issuer.

Secured credit may also increase the cost of reorganization in bankruptcy. Because secured creditors have priority, they tend to prefer low-risk bankruptcy strategies such as liquidation, even if liquidation destroys value.²⁸ Furthermore, secured debt may increase free-rider problems. The firm's bundle of assets may be worth more together than apart. Each secured creditor may attempt to extract this value from other creditors by attempting to hinder the attempted reorganization. Because the secured creditor with priority loses little if negotiations fail and end in liquidation and has a right that is clearly associated with a particular asset, the secured creditor is uniquely placed to "hold-up" the

²⁵ See Mann, *supra* note 2, at 663.

²⁶ See Mann, *supra* note 2 at 663-64. Mann notes that these costs will only be incurred because there is a benefit in increased repayment probabilities. These benefits will be examined below, however.

²⁷ See Mann, *supra* note 2, at 663.

²⁸ See Bris, Arturo, Welch, Ivo and Zhu, Ning, "The Costs of Bankruptcy" (March 15, 2004). Yale ICF Working Paper No. 04-13. <http://ssrn.com/abstract=523562> at 4 (stating that when banks are secured creditors, they prefer firms to be liquidated and do not favor reorganizations").

negotiations and demand excess value.²⁹ As a result, efficient bankruptcy reorganizations may be obstructed by large amounts of secured debt—an important additional cost created by secured as opposed to unsecured debt.

Finally, under some assumptions, the availability of security with a priority claim in bankruptcy raises a firm's cost of lending more generally. Unsecured creditors will demand a covenant restricting later secured debt or an interest rate premium to protect themselves against the risk that the issuance of later secured debt may dilute the value of their claims.³⁰ As a result, a firm will be forced to pay a higher price for credit.

B. The Benefits of Secured Debt from the Firm's Perspective.

Given the costs just described, secured debt must offer offsetting benefits if firms are ever to issue security. Unfortunately, there is far less consensus regarding the benefits of secured debt to firms than there is regarding the costs. This section details some of the many benefits proposed by scholars as explanations for the existence of secured debt.

1. Monitoring and Agency Costs

Most attempts to define the benefits of secured debt “focus on the ways in which secured credit can better control agency costs within the firm by reducing conflicts of interest between the debtor's managers (representing the residual equity claimants) and

²⁹ See Patrick Bolton & David S. Scharfstein, Optimal Debt Structure and the Number of Creditors, *104 J. Pol. Econ.* 1 (1996).

³⁰ This is part of what Professor Alan Schwartz has termed the “puzzle of secured debt”. See Alan Schwartz, *Taking the Analysis of Security Seriously*, 80 Va. L. Rev. 2073, 2079-80 (1994).

the firm's debt holders."³¹ Better control of agency costs reduces the interest rate a firm must pay; the more confident the lender is that the firm will not behave opportunistically, the less of a premium the lender will demand.³²

Secured lending appears to offer a partial solution to the "overinvestment" or risk alteration problem.³³ Security enables a lender to exact harsh penalties on a debtor in the event of default. For example, the secured lender may foreclose on potentially critical assets. Thus, if a borrower attempts to engage in covenant-violating risk alteration, a secured lender has considerably more power than an unsecured lender to prevent opportunistic risk alteration.³⁴ Because risk-alteration may be inefficient, the leverage gained by the secured creditor may enable socially preferred outcomes.

Secured lending may also mitigate the "underinvestment" problem.³⁵ The underinvestment problem occurs when a firm chooses to reduce its investment in a project because it must share the benefits of the project with a creditor/joint venturer. Instead, the firm may prefer to invest in a less promising project in which the firm retains all the profits. Security enables creditors/joint venturers to prevent underinvestment. If a

³¹ See Scott, *supra* note 2, at 1448.

³² This discussion focuses on secured debt as a means of reducing risk-alteration. Other agency costs related theories of secured debt focus on secured debt's ability to decrease monitoring costs. See Douglas G. Baird & Thomas H. Jackson, Cases, Problems, and Materials on Security Interests in Personal Property 324-28 (1987); Buckley, *supra* note 2; Jackson & Kronman, *supra* note 2; Levmore, *supra* note 2.

³³ For analyses of this issue, see Elazar Berkovitch & E. Kim, Financial Contracting and Leverage Induced Over- and Underinvestment incentives, 45 Journal of Finance 764 (1994); Bolton & Scharfstein, *supra* note 29; Scott, Relational Theory, *supra* note 2; Charles W. Smith & Jerold S. Warner, *On Financial Contracting: An Analysis of Bond Covenants*, 7 J. FIN. ECON. 117 (1979). Another prominent explanation of secured debt (and priority rules more generally) on the basis of agency costs and primarily risk-alteration-controlling-properties is Hideki Kanda & Saul Levmore, .

³⁴ Many scholars list specific ways in which the security can reduce risk alteration. See, e.g., Stulz and Johnson; Triantis, *supra* note 2; Carlson (1994). For a list of means of risk-alteration, see Bebchuk & Fried, Uneasy Case 1, *supra* note 2.

³⁵ The original explication of the underinvestment problem is Stewart C. Myers, *Determinants of Corporate Borrowing*, 5 J. Fin. Econ. 147 (1977). The underinvestment problem was related to secured debt by Smith & Warner, *supra* note 33 and Berkovitch & Kim, *supra* note 33.

firm violates a covenant associated with a lending contract in a way that will reduce the creditor's return, then the secured creditor can threaten to foreclose on the collateral.

This harsh penalty deters the firm from inefficiently starving the joint venture of funds.

Similarly, secured lending may reduce the number of "opportunistic" defaults.³⁶ An opportunistic debtor will declare bankruptcy when there is no shortage of liquidity if it believes that a bankruptcy reorganization will improve its credit terms. In response, a lender must demand potentially excessive interest rate premiums to protect against the strategic default risk. Secured debt may offer another solution. Because secured debt makes bankruptcy reorganization more costly and uncertain,³⁷ it will deter opportunistic bankruptcy declarations. When opportunistic bankruptcies are a large risk, the secured debt solution may be the most efficient. When opportunistic bankruptcies are unlikely, however, then secured debt will be less attractive because it will raise the cost of potentially efficient bankruptcy reorganizations.³⁸

³⁶ This discussion borrows from the discussion of Bolton & Scharfstein, *supra* note 29.

³⁷ See *supra* note 20.

³⁸ In their important article, Professors Bebchuk & Fried argue that these benefits of secured debt are independent of secured debt's priority. Instead, they argue that the benefits arise from "the special rights accorded to secured creditors outside of bankruptcy." Indeed, the unique characteristics of secured debt just described, such as the right to foreclose on an asset in response to default, are related to the state law rights of foreclosure and not to the priority of security in bankruptcy. Bebchuk & Fried's claim that the agency cost reduction abilities of secured debt is independent of bankruptcy priority is incomplete, however. Bebchuk & Fried correctly note that foreclosure is a state law right that enables a creditor to effectively deter opportunistic behavior (such as risk-alteration) by the debtor. They fail to discern, however, that the effectiveness of the foreclosure deterrent depends critically on the priority that secured credit receives in bankruptcy. The argument runs as follows. Suppose that secured creditors do not enjoy priority in bankruptcy. Suppose further that a debtor attempts to violate the terms of a secured debt contract and engages in opportunistic risk altering behavior. The secured creditor threatens to foreclose, seeking to dissuade the debtor from engaging in risk-alteration. In turn, the debtor threatens to declare bankruptcy. If the secured debtor does not enjoy priority in bankruptcy, then the debtor's counter-threat is effective. The secured creditor will be reluctant to foreclose because it risks losing value while sharing priority with other creditors. The state law right of foreclosure is toothless if secured creditors do not enjoy priority in bankruptcy. When the secured creditors enjoy priority, however, the debtor's bankruptcy threat does not intimidate the secured creditor, who can be confident that it will recover its loan (along with interest) because it enjoys priority in bankruptcy. Indeed, secured lenders are more likely to place a creditor in bankruptcy than other lenders, suggesting that they are far less afraid of bankruptcy, and therefore better able to exercise leverage, than other creditors.

2. Redistribution—Priority Related

Redistribution offers another explanation for the use of secured debt.³⁹ The redistributive capacities of secured debt operate as follows. First, suppose that a firm has non-adjusting creditors. Non-adjusting creditors are creditors who do not adjust the interest rate charged to the firm in response to events that alter the expected recovery of the loan should bankruptcy occur. Next, suppose that the firm needs to issue debt and must choose between secured and unsecured debt. If the firm issues secured debt, then the new creditor will demand a lower interest rate as compared with unsecured debt because the new creditor will be more confident of recovery in bankruptcy due to secured debt's priority. Secured debt reduces the value of non-adjusting creditors' claims, however. Because the new creditor's claims are secured, the non-adjusting creditors will only recover in bankruptcy after the secured creditors are paid in full. Thus, more secured credit means lower recoveries for other creditors. In response to this effect, pre-existing creditors should charge a higher interest rate to compensate for the increased risk of non-recovery in bankruptcy or demand covenants to limit the probability of redistribution. For a variety of reasons, non-adjusting creditors fail to do so, however. As a result, the firm can issue new secured debt and obtain a lower interest rate, thereby "redistributing" value away from the non-adjusting creditors whose claims have been diluted through the use of security.

³⁹ See, e.g., Schwartz, Bankruptcy Priorities, *supra* note 2, at 30-33; James H. Scott, *Bankruptcy, Secured Debt, and Optimal Capital Structure: Reply*, 34 J. FINANCE 253 (1979); James H. Scott, *Bankruptcy, Secured Debt, and Optimal Capital Structure*, 32 J. FINANCE 1 (1977). Bebchuk & Fried, *Uneasy Case 1*, *supra* note 2 present a new and more general analysis of the redistributive theory.

Secured debt's redistributive benefits to a firm stem from the existence of non-adjusting creditors. Scholars have identified several groups of non-adjusting creditors.⁴⁰ These include private involuntary creditors, government tax and regulatory claims, voluntary creditors with small claims, and prior voluntary creditors.⁴¹ Of these classes, the most frequently noted and commented upon are tort claimants.⁴²

Tort claimants become creditors when firms do not carry enough insurance to cover all tort claims. Insurance may not cover all tort claims because insurers insist on a coverage limit or because firms have an incentive to underinsure.⁴³ Whatever the cause, when firms are underinsured, tort victims of the firm must recover from the firm rather than the firm's insurer. The size of the tort claimant's claim is fixed by the size of damages. The tort claimant is therefore the paradigmatic non-adjusting creditor--the tort claimant cannot claim additional compensation if a later secured loan reduces the expected tort recovery in bankruptcy. Moreover, tort claimants, as involuntary creditors, enjoy no contractual protections against redistribution such as covenants. As a result, tort claimants are highly exposed to redistribution. A firm with many tort creditors should pay a considerably lower interest rate for secured debt, which enjoys priority over the tort creditors, as opposed to unsecured debt, which must share firm assets pro-rata with the tort claimants.⁴⁴ The redistributive theory suggests that firms should therefore issue

⁴⁰ See Bebchuk & Fried, *Uneasy Case 1* *supra* note 2, at 882-91.

⁴¹ See Bebchuk & Fried, *Uneasy Case 1*, *supra* note 2, at 882-91.

⁴² See, e.g., Bebchuk & Fried, *supra* note 2, at 882 (presenting tort claimants as the first type of creditor in their taxonomy of non-adjusting creditors); LoPucki, *supra* note 2, at 1898-99; Scott, *supra* note 39 at 2-3; Shupack, *supra* note 2, at 1094-5.

⁴³ See Bebchuk & Fried, *Uneasy Case 1*, *supra* note 2, at 882; Henry Hansmann & Reinier Kraakman, *Toward Unlimited Shareholder Liability for Corporate Torts*, 100 *YALE L.J.* 1879, 1889 (1991).

⁴⁴ Because fraudulent conveyance doctrines in bankruptcy only apply to transactions made within one year of filing and exempt transactions for which "reasonably equivalent" value was paid, "fraudulent conveyance" offers limited protection for tort claimants against redistributive secured debt. See 11 U.S.C. §548(a).

secured debt. Tort claimants will suffer from the secured debt, as the tort claimant's bankruptcy share is reduced without any countervailing increase in payoffs.⁴⁵

C. Should Secured Debt Enjoy Priority in Bankruptcy?

Whether or not secured debt should enjoy priority in bankruptcy depends upon the relative merits of the two theories of secured debt presented above. If the agency cost reduction theory is primarily correct, then secured debt should receive priority over other types of debt. Priority increases the leverage the secured lender enjoys over the creditor. In turn, this leverage enables the secured lender to reduce potentially inefficient opportunistic behavior by the debtor. Any reduction in priority for secured credit may reduce leverage and inhibit the usefulness of secured debt as an agency cost reducing tool.

If one believes that firms issue secured debt for redistributive reasons, by contrast, then priority for secured debt is less desirable.⁴⁶ Redistribution leads to inefficiencies. Redistribution involves the transfer of value from non-adjusting creditors to newly arriving secured creditors. No value is created. Instead, value is shuffled. If secured debt costs more to issue than unsecured debt (for example, if transactions costs are higher in the case of secured loans), then secured loans would consume valuable resources for a benefit, redistribution, that transfers but does not create wealth—an inefficient outcome. Secured debt issued for redistributive reasons also may lead to

⁴⁵ The other classes of non-adjusting creditors may suffer from similar forms of redistribution. These nonadjusting creditors may demand interest rate premiums to compensate for potential redistribution or they may demand contractual protections instead. While there may still be some inefficiencies associated with redistributive secured debt in these contexts, they are clearly less problematic than the case of involuntary creditors. Redistribution does not necessarily imply that a firm's incentives to take precautions against torts will be reduced. For a discussion, see Yeon-Koo Che & Kathryn E. Spier, "Strategic Judgment Proofing," (Working Paper, June 18, 2005).

⁴⁶ Of course, elements of both theories may be correct. The scholarly "debate" concerns the relative importance of the explanations in determining the "real-world" usage of secured debt.

other inefficiencies. In the tort context, for example, redistribution may lead to excessively low levels of precaution. Suppose a firm with no insurance commits a large tort that threatens to force the firm into bankruptcy. If the firm cannot issue debt with priority over tort claimants, then it will be forced to borrow at high rates; contract creditors will know that they will be forced to share pro rata with the large group of tort creditors in the event of bankruptcy and will demand to be compensated accordingly. In this situation, the firm will take precautions to avoid mass torts, which raise the firm's cost of credit.

Now suppose, however, that secured debt enjoys priority over tort claimants and that firms issue secured debt for redistributive reasons. In this scenario, the firm's incentives for precaution are greatly reduced. If a tort occurred, the firm's cost of credit would not be greatly altered. Instead, the firm would issue secured debt. Contract creditors would not demand high interest rate premiums because the secured debt enjoys priority in bankruptcy and will be fully repaid before the large class of tort claimants receives anything. Thus, secured debt enables a firm to avoid the full costs of large torts.⁴⁷ In response, a firm will have less of an incentive to take precautions to avoid the large tort.

If redistribution is the primary motive for secured debt issuance, then priority for secured debt also leads to inequitable distributions. While unsecured contract creditors are voluntarily unsecured and may receive compensation for their lack of security in the form of higher interest rates, the tort claimants can not choose their security level. They

⁴⁷ In this context, secured debt also diminishes a firm's incentives to purchase insurance. If firms can use secured debt to avoid making payments to tort creditors and thereby diminish the amount ceded by equity claimants to tort claimants, there is less of a need to purchase insurance that covers the firm's obligations to tort claimants.

are unwillingly exposed to redistribution. Finally, tort victims may have extraordinary liquidity needs that might not be met as a result of secured debt's priority status.⁴⁸ In response to these efficiency and equity concerns, many adherents of the redistributive theory have advocated a reduction in secured debt's priority. Arguments to grant tort claimants priority over other creditors have a long history.⁴⁹ A recent commentator described the argument as follows:

One effective way of deterring insolvency and encouraging optimal precaution levels would be to alter the priority scheme by giving tort creditors "superpriority" status. Under this system of superpriority, tort creditors would be paid before all priority creditors, secured creditors, and unsecured creditors. Since secured creditors would not be guaranteed payment at the head of the line in this regime, they would bear a portion of the risk of insolvency. Secured creditors would be forced to price risk into credit and would in turn force firms to internalize this risk through credit prices that correspond to precaution levels. ... To force firms to include the full cost of accidents in business decisions, it is crucial to prioritize tort claims above all other priority claimants, even secured creditors. If tort debt were given priority, all creditors would have an incentive to monitor business risk-taking. Because they are often less diffuse and more savvy than shareholders, creditors are in the best position to monitor levels of risky activity.⁵⁰

These arguments apply only to non-insured tort liabilities. When tort liabilities are insured, the insurer has an incentive to price the insurance appropriately and encourage the firm to take appropriate precautions. Furthermore, tort claimants do not suffer from priority for secured debt when firms are insured as the tort claimants receive compensation from the insurance company and not the tort-feasing firm.

⁴⁸ See Yair Listokin & Kenneth Ayotte, Protecting Future Claimants in Mass Tort Bankruptcies, 98 *N.W.U. L. Rev.* 1435 (2004).

⁴⁹ See note 10 *supra*.

⁵⁰ See Note, *supra* note 10, at 2562.

Superpriority for tort claimants is not the only proposed bankruptcy priority reform. Noting that tort claimants are not the only nonadjusting creditors, Professors Bebchuk and Fried advocate a “partial priority” rule for secured debt.⁵¹ They believe that partial priority would reduce the amount of secured debt issued for inefficient redistributive reasons. Finally, Professor LoPucki points to redistributive secured debt as an example of a growing trend leading towards the “death” of tort liability.⁵² Concluding that tort claimant priority alone is insufficient in the face of this trend, Professor LoPucki considers unlimited shareholder liability and consensual creditor liability as potential solutions but finally concludes that even these radical steps are potentially inadequate.

Clearly, the debate over the primary reasons for secured debt’s usage involves high stakes. If secured debt is primarily used to reduce agency costs, then it is efficient for secured debt to enjoy priority over other debt. If secured debt’s primary purpose is to redistribute money from one class of creditors to another, however, then a host of changes to the current bankruptcy priority rules are warranted.

II. Empirical Analysis: Secured Debt and Tort Liability

The discussion in Part II described the importance of distinguishing between the agency-cost theory and the redistributive theory of secured debt. This Section presents an empirical framework for distinguishing between the two theories by focusing on secured debt usage in response to non-insured tort liabilities.

⁵¹ Bebchuk & Fried, *Uneasy Case 1*, *supra* note 2, at 866.

⁵² LoPucki, *supra* note 15, at 14-23.

A. Theories of Secured Debt and Predictions Regarding Secured Debt Usage and Tort Liability

The redistributive theory predicts that firms with large, non-insured tort liabilities should have large amounts of secured debt. Recall that tort claimants are uniquely exposed to redistribution.⁵³ They do not enjoy contractual protections such as covenants, nor do they voluntarily choose to forego such protection in exchange for greater compensation. As a result, firms faced with large tort liabilities have particularly strong motives to engage in redistribution. The spread in interest rates between secured and unsecured debt, and thus the payoff for engaging in redistribution through secured debt, should be particularly high for “high-tort” firms. Moreover, “high-tort” firms will not have to engage in the hassle of renegotiating covenants with the large class of unsecured tort claimants. Thus, redistribution is at its easiest and most compelling for high-tort firms. If redistributive motives ever drive secured debt issuance, then surely firms facing non-insurable tort liabilities should engage in large amounts of secured borrowing relative to otherwise similar firms without large tort liabilities.

By contrast, the agency-cost theories of secured debt do not predict that high-tort firms should issue large amounts of secured debt. Firms facing large tort liabilities are no more susceptible to “risk-alteration” or other agency costs than other firms. Indeed, high-tort firms may be less susceptible to these agency costs than other firms. High-tort firms’ risks stem primarily from exogenous, non-performance related factors such as court decisions. Other firms, by contrast, encounter more significant performance related risk that can be adjusted through risk shifting and controlled with secured debt. Furthermore,

⁵³ See the discussion in Section I, *supra*.

many of the high-tort firms identified below are in mature industries with stable cash flows, making them poor candidates for secured debt given secured debt's undeniably high costs.⁵⁴

Thus, high-tort firms offer a compelling empirical test of the redistributive theory. If high-tort firms do not have large amounts of secured debt, it is unlikely that secured debt is ever used for large scale redistribution.

B. Identifying Firms with Large Tort Liabilities

This paper adopts several techniques for identifying firms with large, non-insurable tort liabilities. First, the paper focuses on firms in industries with large mass tort liabilities. Firms with large asbestos liabilities are the most prominent example. These firms were identified from a list of companies that declared bankruptcy as a result of asbestos liability compiled by Professor Michelle White.⁵⁵ Note that many of these firms are not asbestos manufacturers; most manufacturers declared bankruptcy well before the time period examined in this sample.⁵⁶ Instead, the firms come from a number of industries and often became exposed to asbestos through liability assumed from successor corporations. These firms are identified through the use of a dummy variable that equals one if the firm is present on Professor White's list and zero otherwise.

⁵⁴ While firms in mature industries are unlikely to default on their loans, they may be likely to waste their free cash flow on unproductive projects. As a result, high debt loads for mature companies may be efficient ways to constrain management from wasting the free cash flows. See Michael Jensen., *Agency Costs Of Free Cash Flow, Corporate Finance And Takeovers*, 76 AMER. ECON. REV. 323 (1986). Because risk alteration is not an important concern for such companies, however, the need for secured debt, as opposed to other forms of debt, is limited.

⁵⁵ See Michelle White, *Why the Asbestos Genie Won't Stay in the Bankruptcy Bottle*, 70 U. Cin. L. Rev. 1319 (2003).

⁵⁶ For example, the Johns Manville Company, the largest asbestos manufacturer, declared bankruptcy in 1982. See *In re Johns-Manville Corp.*, 36 B.R. 743 (Bankr. S.D.N.Y. 1984).

Tobacco firms are another widely publicized group of firms with potentially large mass tort liabilities. Over the last decade, tobacco companies have become the target of suits from numerous sources, including smokers, second-hand smokers, and representatives of states and the federal government. While these suits have yet to force these firms into bankruptcy, there is no question that there is a high mass tort bankruptcy risk for tobacco firms. State tobacco bond interest rates provide evidence of this risk.⁵⁷ Adverse tort verdicts have made states reluctant to issue tobacco bonds securitizing settlement payments from tobacco companies.⁵⁸ Because investors fear that tort liability will force tobacco companies into bankruptcy, tobacco bonds carry a high interest rate premium. In response, states have avoided issuing tobacco bonds.

Tort risk is a salient characteristic of both tobacco and asbestos firms and it should surprise no one if these firms adopt capital structures with this risk in mind. To broaden the sample of high-tort firms beyond these two industries, however, a more rigorous method of identifying high-tort industries is necessary. This study uses the Westlaw database to assist in this task. The procedure for identifying high-tort risk industries operates as follows. First, the official census bureau titles of industries (known as the Standard Industrial Classification, or SIC, titles) were obtained from the United States Census Bureau.⁵⁹ Next, the key phrase⁶⁰ for each three digit Standard Industrial

⁵⁷ Tobacco companies have large obligations to states stemming from a large settlement of a 1998 class action lawsuit against tobacco companies by the Attorney Generals in many states. To plug large deficits, some states have securitized their receipts from tobacco companies. These bonds are called “state tobacco bonds”. See Al Baker & Jonathan Fuerbringer, *Shift in Bonds Has States Rethinking Tobacco Plans*, N.Y. TIMES, April 10, 2003, at A18.

⁵⁸ See Baker & Fuerbringer, *supra* note 57.

⁵⁹ The Census Bureau gives each industry an official SIC title as well as an official 4 digit SIC Code. See <http://www.osha.gov/cgi-bin/sic/sicser5> for a list of these industrial titles and codes.

⁶⁰ Many of the SIC titles contain extraneous words. For example, the paper industry is not termed the “Paper” industry but rather the “Paper and Allied Products” industry. For this study, the key term of each

Classification (SIC) code title was typed into Westlaw along with the following command

“[Industry Title]” /s “products liability”

The number of “hits” for this search was recorded. This search gives an indication of the number of times an industry is associated with products liability risk—the cause of almost all the mass tort bankruptcies heretofore. To control for the fact that some industries names are more common than others, I conducted another “control” search using the following command:

“[Industry Name]” /s “breach of contract”

and recorded the resulting hits. Industries that generated a lot of hits for the first search simply because they had a common name should also have large number of hits on the control search. By contrast, industries with genuinely high products liability risk should have many more hits on the first search than on the second. The industries with large numbers of hits for search 1 but not for search 2 were identified as high-tort industries with a dummy variable equal to one.

While this procedure is imperfect, it provides a rough-and-ready objective means of identifying industries with high-tort risk. Furthermore, the results from this procedure are intuitively reasonable. The two highest scoring industries according to this method were the tobacco and asbestos industries. Other industries identified as high-tort using the “Westlaw” method include pharmaceutical firms, surgical and medical equipment makers, paint manufacturers, pesticide makers, tire manufacturers, small arms manufacturers, household appliance manufacturers, and toy and sporting goods

SIC title was used. For example, searches were conducted using the word “Paper” and not “Paper and Allied Products.” A list of these phrases is available from the author upon request.

equipment makers. Note that the number of pharmaceutical and medical equipment firms dwarfs the number of other firms. As a result, these types of firms will be treated separately from the other group of high-tort firms.

C. Financial Data and Summary Statistics Note that the secured debt variable includes capitalized leases. Thus, the secured debt variable captures any attempt by companies to evade tort creditors through long term “sale and leaseback” arrangements or similar types of securitizations.

This study focuses on manufacturing firms with SIC codes between 2000 and 4000. This range includes only manufacturing firms and excludes financial and services firms. Financial data for all the firms in the sample was collected from COMPUSTAT, a proprietary database containing detailed financial information for publicly traded firms traded on American Stock Exchanges.⁶¹ Table 1 presents summary statistics for many of the important variables used in the analysis. The dataset from which these figures are based contains data from 5,592 firms. For each firm, the dataset contains an average of almost seven years of data (6.802 years per firm on average). The total number of firm-year observations in the dataset is therefore $5,592 \times 6.802 = 38,040$ firm years. Table 1, as well as all of the future tables presented below, uses the firm (and not the firm-year) as the basic unit of observation. Thus, the averages in Table 1 are averages of the average value for each firm.⁶²

⁶¹ Because Compustat focuses on public firms, the conclusions presented below are necessarily speculative with respect to closely held firms. Given the strength of the redistributive motive for high tort firms, however, a failure of the redistributive prediction for publicly traded firms bodes ill for the theory's predictive power with respect to closely held firms.

⁶² To explain further, suppose that Firm A is a representative firm, there are two years (1 and 2) and two variables (secured debt and tort risk). Suppose that in year 1 Firm A has 1 unit of secured debt and 1 unit of tort risk and that in year 2 Firm A has 1.5 units of secured debt and 1 unit of tort risk. Thus, Firm A's average secured debt is $1.25 = (1 + 1.5) / 2$, and Firm A's average tort risk is $1 = (1 + 1) / 2$. In calculating the averages presented in Table 1, Firm A is entered as one observation with secured debt equal to 1.25 and tort

COMPUSTAT collects data for large, publicly traded firms. As a result, the average firm in the dataset is large. It has \$ 36.8 million of secured debt, \$219.2 million of total long-term debt, hard assets of over \$680 million, total assets of approximately \$1.06 billion, and more than 4,650 employees. The data for the firms is widely dispersed. Note how the standard deviations for many of the variables in Table 1 are greater than the means. This occurs because the size distribution of the firms in the sample is uneven. There are many more smaller-than-average firms in the sample than larger-than-average firms. A few very large firms help skew the distributions of the variables.⁶³

Not all firms have secured debt. Indeed, approximately 18% of the firms in the sample have no secured debt at all. This number is similar to the figure obtained from previous research.⁶⁴ On average, secured debt makes up 31% of all debt for firms that have at least some debt (the secured debt to total debt ratio is .31).⁶⁵ Thus, secured debt is an important part of firm's debt composition, although it is far from ubiquitous. Creditors do not hold collateral on most of the firms' assets. In fact, the average firm in the sample has a secured debt to property, plant, and equipment ratio of .18—only 18% of the average firm's hard assets are securitized, suggesting that lack of hard assets does not constrain most firms from issuing secured debt. Secured debt comprises an even

risk equal to one, rather than as two firm-year observations. The reasons for this choice are explained *infra*. See the text accompanying footnotes 73-74.

⁶³ Note that the values of most variables used *infra* are capped above and below at the 5 and 95 percentiles, respectively. This technique helps prevent outliers from driving the results. This process does not affect the primary focus of the primary focus of this paper, (the use of secured debt by high tort firms). It does affect the estimated coefficients of many of the control variables presented in Table 3, however.

⁶⁴ See Barclay & Smith, *supra* note 17, at 904.

⁶⁵ Note that some firms have no debt of any type. These firms do not appear in the calculation of the secured debt to total debt ratio because the ratio is undefined for these firms—the denominator, total debt, is zero. This explains why there are fewer firm-year observations making up the secured debt to total debt ratio as compared with the other ratios presented in Table 1. It also explains why the secured debt to total debt ratio does not simply equal the mean for secured debt amount divided by the mean for total debt amount.

smaller percentage of firms' total assets; the average secured debt to total assets ratio is only .09. Note that the secured debt variable includes capitalized leases. Thus, the secured debt variable captures any attempt by companies to evade tort creditors through long term "sale and leaseback" arrangements or similar types of securitizations.

III. Statistical Analysis of the Relationship Between Tort Risk and Secured Debt Usage

A. Simple Statistical Analysis of Secured Debt Usage

With these stylized facts regarding secured debt usage in mind, we now begin to examine the relationship between secured debt usage and tort risk. Recall that the redistributional theory of secured debt predicts that firms at risk of tort-liability related bankruptcies should have greater amounts of secured debt relative to otherwise similar firms that do not have high-tort liabilities. Before testing this hypothesis through regression analysis, this section presents some simple statistical comparisons of "high-tort" firms with respect to other firms.

Table 2 divides the firms in the sample according to several measures of tort risk and compares the secured-debt to hard assets and secured debt to total debt-ratios for high-tort risk and low-tort risk firms. These ratios are chosen over other measures of secured debt usage for several reasons. First, the theoretical literature examines the tradeoff between secured debt and other types of debt. This tradeoff is best analyzed empirically through the use of the secured debt to total debt ration. Second, ratios

facilitates empirical comparisons of firms of very different sizes by putting relative secured debt usage of any firm on a comparable scale.

Row A of Table 2 presents figures for firms that are not identified as high-tort risks. This group consists of all firms not identified as high-tort using the methods described above. Secured debt accounts for 32% of total debt for the “control group” firms, and only 16% of the average firm’s hard assets are secured. The low figure suggests that limits on securable assets do not constrain the average firm from obtaining more secured debt.

Rows B-E of Table 2 present data for various categories of high-tort risk firms.⁶⁶ Row B analyzes cigarette manufacturers.⁶⁷ Column III shows that secured debt accounts for a much *lower* proportion of total debt for tobacco firms than for the average firm not facing high-tort risk (only 11% of total debt for cigarette as compared with 31% for the control).⁶⁸ This contradicts the redistributive theory’s prediction that high-tort firms should have higher proportions of secured debt. Taken alone, this finding means relatively little, however. First, the small number of tobacco firms (10) in the sample cautions against making overly broad interpretations of the data.⁶⁹ In addition, non-tort related differences between cigarette firms and the “control group” may be the cause of these differences. One possible source of these differences would be if cigarette firms’ secured debt capacities were limited by their securable assets. In this scenario, cigarette

⁶⁶ See *supra* for discussion of these categories.

⁶⁷ Note that the statistics in Row B are derived from only 67- firm year observations. As a result, these figures must be treated more skeptically than the statistics presented in Row A.

⁶⁸ A t-test reveals that the cigarette firms mean secured-debt to total-debt ratio is lower than that of the control firms at the 99% significance level. This t-test, however, treats each firm-year as distinct. The true significance level may therefore be somewhat smaller.

⁶⁹ Because the unit of observation is the firm and Table 2 presents averages of averages, the data for the 10 firms is derived from 65 firm-years. Thus, the data are more accurate than the 10 firms figure would initially suggest and, as a result, better inferences can be made.

firms are unable to obtain more secured debt because they have nothing to use as security. The data, however, do not support this hypothesis (see Column IV). Cigarette firms have a lower secured debt to hard assets ratio than the control group (12% as opposed to 18%). Moreover, both groups appear to have plenty of securable assets available to collateralize loans; less than 20% of hard assets are secured.

These results repeat themselves for firms facing large asbestos liabilities (Row C). Firms facing large asbestos liabilities are ideally situated to use secured debt for redistribution. Nevertheless, secured debt accounts for a smaller proportion of their debt loads than for the control group (15% for high asbestos liability firms as compared to 31% for the control group). Here too, the results cannot be attributed to lack of securable assets. Secured debt equals only 18% of these firms' hard assets, making it unlikely that the asset constraint is preventing these firms from obtaining more secured debt.

As with cigarettes, however, the results must be treated with caution because of the limited size of the asbestos firm sample. To address this issue, Row D pools tobacco and asbestos firms as well as two other high profile mass tort bankruptcy firms (Dow Corning and A.H. Robins). The pooled sample also has considerably lower secured debt to total debt (12%) and secured debt to hard ratios (13%) than the control group. Row E reports very similar results for the group of industries identified as high-tort risks using Westlaw.⁷⁰ Firms in these industries have considerably lower secured debt proportions than the control group of firms.

The results for pharmaceutical and medical devices firms (Row F) provide limited support for the redistributional theory. Indeed, these firms have a slightly higher secured

⁷⁰ See *supra* at III.B.

debt to total debt ratio than the control group (33% for the pharmaceutical and medical devices firms as opposed to 31% for other firms). These results should be treated with caution for several reasons, however. First, as described above the link between the pharmaceutical industry and tort risk is far weaker than for asbestos or tobacco. In addition, many other factors may be causing these differences.

Because the simple statistics presented here do not control for a myriad of other factors, firm conclusions based on these results are impossible. Nevertheless, one observation is justified. Redistribution's ability to explain the pattern of secured debt is limited at best. If redistribution is a principal determinant of secured debt, then firms with near-perfect opportunities to engage in redistribution through secured debt should do so, regardless of whatever other factors militate against the use of secured debt. The fact that high-tort risk firms such as tobacco and asbestos firms have lower than average secured debt contradicts the notion that redistribution is a prime motive for secured debt.

B. Regression Analysis of Secured Debt Usage

Simple statistics are instructive, but a robust identification of the effects or non-effects of redistribution on secured debt usage requires more sophisticated techniques. The previous section demonstrated that firms with high-tort risk use smaller amounts of secured debt. While these results cast doubt on the redistributive theory of secured debt, their reach is limited. To address these concerns and control for other determinants of secured debt usage, we must turn to regression analysis.

Previous studies of secured debt identified several non-tort related factors affecting secured debt usage.⁷¹ These factors include market-to-book ratio, earnings, marginal tax rates, size of firm, cash availability, and country and state of incorporation. In addition to these variables, the regressions run below control for the year of the observation and the exchange upon which the stock is traded. These variables control for other potential differences between high-tort firms and other firms that are unrelated to tort risk.

1. Tobit Models

Regressions using secured debt to total debt ratios or secured debt to hard assets ratios have a censored dependent variable. Even if a firm “wants” to hold negative amounts of secured debt, the firm would not be able to—the minimum amount of secured debt is zero. Such censoring can bias the estimates of the effects of various factors using the Ordinary Least Squares (OLS) model. To adjust for the bias, this study employs the Tobit model.⁷²

The appropriate unit of observation for the tobit regressions is also a source of concern. The tort indicator variables vary across firms, but do not vary across years

⁷¹ See Barclay & Smith, *supra* note 17; Berger & Udell, *supra* note 17.

⁷² For a discussion of the tobit model, see Angus Deaton, THE ANALYSIS OF HOUSEHOLD SURVEYS 85-92 (1997). Note that the additional assumptions made by the Tobit model to correct for the bias caused by censoring, such as homoskedasticity and normality of the error terms, are themselves suspect. *See id.* Indeed, sometimes the medicine is worse than the cure. Furthermore, ordinary tobit regressions treat all observations identically, ignoring potential correlations between observations of the same firm in different years. To address these concerns, several procedures are employed. First, the standard errors reported in the regressions are estimated using a bootstrap procedure to correct for potential clustering of error terms within firms across years. The bootstrap procedure also helps adjust standard error terms estimates for potential heteroskedasticity. Bootstrapping does not adjust point estimates for potential heteroskedasticity biases, however. Powell’s Censored Least Absolute Deviation (CLAD) model, by contrast, produces consistent point estimates in the face of heteroskedasticity. See James L. Powell, Least Absolute Deviations Estimation for the Censored Regressions Model, 25 *Journal of Econometrics* 303 (1984). As a result, I compare some of the tobit point estimates with estimates produced by the CLAD model. The two procedures produce point estimates within 10% of each other, suggesting that heteroskedasticity does not cause large biases in the tobit estimates.

within the same firm; a tobacco firm is always a tobacco firm. As a result, a “pooled” tobit regression model treating each firm-year observation as distinct will produce inappropriately small standard error estimates for the effects of tort risk. This specification “thinks” there is more data than there actually is.⁷³ To address this concern, the unit of observation for the regressions will be the mean values, across years, for each individual firm. This procedure reflects the source of variance of the tort risk variables of interest and produces more accurate standard error estimates.⁷⁴ Mathematically, the specification is:

$$\overline{sdebt}_i = \overline{X}'_i \beta + \delta \times \overline{tort}_i + \varepsilon_i$$

where \overline{sdebt}_i is the average (across years) secured debt to total debt ratio for firm i , \overline{X}'_i is a vector of control variables averaged across years,⁷⁵ \overline{tort}_i is an indicator variable for whether or not the firm is a high-tort risk firm (several different measures of this risk are used),⁷⁶ and ε_i is a normally distributed, homoskedastic error term that is uncorrelated with the regressors. If the redistributive theory is empirically important (the Null Hypothesis for this study), then the tort coefficient (δ), should be positive and significantly greater than zero. If the redistributive theory does not have predictive power, then (δ) may be zero or even negative.

⁷³ Because there is no variation in tort risk within firms, a fixed-effects regression model is not feasible. For more discussion of this issue, see Section IV.C.1 *infra*.

⁷⁴ The standard error estimates for the control variables, however, will tend to be underestimated because the regression exploits only between firm and no within-firm variation.

⁷⁵ See *supra* text around note 71 for a discussion of the control variables.

⁷⁶ For a discussion of these measures, see *supra* Part II.

Table 3 presents results of tobit regressions using this specification.⁷⁷ Column II focuses on tobacco firms as the tort-risk category of interest. Even after controlling for many other factors, Column II shows that tobacco firms use *less* secured debt than other firms. Being a tobacco firm is associated with a “desired”⁷⁸ decline in a firm’s secured debt to total debt ratio of approximately .14, *ceteris paribus*—a substantial decrease. This estimated effect is imprecisely estimated, however. Indeed, the coefficient estimate is not significantly different from zero at the 5% level. The results are more significant (both statistically and economically) for the sample of firms that ultimately declares bankruptcy as a result of asbestos liability (Column III). These firms have a “desired” secured debt to total debt ratio that is .48 lower than would otherwise be expected.⁷⁹ This estimate is significant different from zero at the 5% level, although the estimate is still quite imprecise. The imprecision of the tobacco and asbestos company tort risk estimates is not surprising—very few companies can be clearly identified as tobacco or asbestos liability risk companies, limiting the statistical power of the regressions. Nevertheless,

⁷⁷ The results presented here are robust to the inclusion of many other potential control variables, including standard deviation of earnings, dummy variables for the presence of tax carryforwards, and measures of abnormal earnings. Note also that the regressions do not include firms that are in bankruptcy because their financial data may be radically altered by the bankruptcy process. In addition, the results are robust to the use of other dependent variables. For example, using the secured debt to market value ratio, rather than the secured debt to total debt ratio, does not change the results appreciably with the exception of the pharmaceutical firms regression. This exception is not surprising given the high value of intangibles for pharmaceutical firms.

⁷⁸ Because the topic of interest is the impact of tort liability on the underlying propensity of firms to use secured debt for both firms that do and do not currently have secured debt, the ordinary tobit regressions coefficients are the appropriate coefficient of interest. This interpretation applies to all of the regression results presented below. Note that the values presented below cannot be mechanically applied to other potential values of interest, such as the impact of a change in tort’s priority structure on the probability that firms will issue any secured debt. Instead, other adjusted estimates must be used. For a helpful discussion of the interpretation of tobit coefficients, see Lee Sigelman & Langche Zeng, *Analyzing Censored and Sample-Selected Data with Tobit and Heckit Models*, 8 *Political Analysis* 167 (1999).

⁷⁹ When a dummy variable indicating whether or not a firm ever declares bankruptcy during the time period is included in this regression, the effect of being an asbestos firm has an even larger downward impact on secured debt amounts. This is because the average (non-asbestos) firm that declares bankruptcy has an above-average ratio of secured debt, making the asbestos companies low secured debt usage even more exceptional.

the size of the negative effect of high-tort risk contradicts the redistributive theory of secured debt. In addition, Column IV pools the asbestos and tobacco companies to help address the limited sample issue. When the two high-tort groups of companies are combined, the results are both economically and statistically significant. High-tort risk companies with asbestos or tobacco liability have secured debt to total debt ratios that are .25 below expectation, *ceteris paribus*.

Column V identifies tort risk using Westlaw to identify industries subject to considerable products liability risk. The group of companies identified using this procedure is considerably larger than the group of tobacco or asbestos companies, enabling more precise identification. The link between potential mass tort bankruptcies and tort risk is weaker for the “Westlaw group”, however, because it includes companies and industries wherein mass tort risk is considerably smaller than for the asbestos or tobacco industries. As expected, the Westlaw tort risk variable coefficient in Column V is both smaller in size and more precisely estimated than the tort risk coefficients in columns II-IV. Companies in high-tort industries have secured debt to total debt ratios that are .071 lower than expected. Thus, the pattern recurs—high-tort companies have less secured debt than expected. Although (as predicted) the magnitude of the effect goes down considerably, the effect remains statistically significant.

Column VI examines secured debt usage amongst pharmaceutical firms and medical equipment manufacturers.⁸⁰ This is a large group of companies, enabling greater statistical precision. As with the tort risk firms examined by Westlaw, however, the salience of tort risk for these firms is considerably smaller than for firms facing tobacco

⁸⁰ The results do not change appreciably if these two categories are separated.

and asbestos liability, however. Yet again, both the size of the estimated “tort effect” and the standard error of this estimate are smaller than the coefficients reported for asbestos or tobacco firms. Interestingly, pharmaceutical firms are the only tort-risk firms with greater secured debt usage than other firms, other things being equal. The size of the positive effect is quite small but statistically significant. Indeed, the magnitude of the positive effect on secured debt usage is considerably smaller than the negative effects witnessed for the other categories of tort risk. Because the other categories of tort risk are more plausible tests of the redistributive hypothesis, the small positive effect found in the Column VI regression does not appear to offer compelling evidence for the redistributive hypothesis.

The impact of other factors on secured debt usage generally comport with previous estimates.⁸¹ A firm’s market to book ratio is an indicator of future investment opportunities and growth options. Because secured debt hinders a firm’s ability to take advantage of growth opportunities (by allowing a creditor to limit the uses of a given asset), one would expect firms with high market-to-book ratios to have low secured debt levels. Indeed, previous studies have found that “firms with more growth options ... (as proxied by high market-to-book ratios) issue significantly fewer fixed claims [including secured debt].”⁸² The results in Table 3 confirm these results, as a higher market-to-book ratio is associated with a statistically significant, but economically small, lowering in the amount of secured debt. Another robust conclusion regarding secured debt is that large firms use less secured debt than small firms.⁸³ The regressions reported here replicate this finding. Firms with higher value have less secured debt as a proportion of total debt,

⁸¹ See, e.g., Barclay & Smith, *supra* note 17.

⁸² Barclay & Smith, *supra* note 17, at 906 table IV 908.

⁸³ See Barclay & Smith, *supra* note 17, at 906 table IV.

although the affect is not statistically significant. Marginal tax rates have little to no impact on secured debt ratios—also a finding that has been made in previous empirical studies.⁸⁴ The regressions confirm this hypothesis, with cash being negatively associated with secured debt proportions. Foreign firms consistently have less secured debt in the regressions. This may be caused by the fact that foreign firms traded on U.S. markets are unusually large and successful firms.

Firms that pay high amounts of dividends (to common shareholders) have considerably less secured debt than other firms. Firms paying dividends have ample cash flow to finance their own operations (otherwise they would not be paying discretionary dividends), and are therefore unlikely to submit to the monitoring and restrictions imposed by secured debt. One surprising result of the regressions is that firms with higher annual income as a proportion of fixed assets have higher secured debt to total debt ratios. This result appears counterintuitive. One would think that more profitable companies would have less need for secured debt, and yet the opposite phenomenon is observed. The size of the impact is considerably less than the negative impact of dividends, however. Combining these two results, the regressions suggest that mature and profitable firms have less secured debt as a proportion of total debt than other firms.

In total, the results of the tobit regressions support the tentative conclusions made above. Even after controlling for many other variables affecting secured debt usage, firms with high-tort risk use less secured debt, in contradiction of the redistributive theory of secured debt.

⁸⁴ See Barclay & Smith, *supra* note 17, at 911 table V.

C. Time Series Analysis

Cross sectional regressions such as those presented in Table 3 are far from perfect, however. If any unobserved variables are correlated with the variables presented in the regression, then the regression estimates may be biased. To examine this possibility, this section turns to time series analysis.

Two obstacles prevent ordinary time series fixed-effects regression with the data presented here. First, the COMPUSTAT data constitute an exceedingly unbalanced panel. Few firms appear unchanged in the database for the entire 11 year span of the data. Many firms merge, are acquired, go private, or become bankrupt over the years in the database. As a result, firm level fixed effects regressions are subject to many sources of bias. Second, fixed effect regressions require within-unit variation in the variable of interest. The “high-tort” identification techniques described above do not provide for within firm variation in tort risk. Another source of variation is required. To address these difficulties, this paper employs two related specifications.

1. Tobacco Industry “Fixed Effects”

Because the turnover in firms makes ordinary fixed effects regressions of firm-level data impractical, this section adopts the industry as the unit of observation. While there is considerable turnover in firms within industries, each industry (as represented by a three digit SIC code) remains far more stable. As a result, this section creates industry level “observations” with a weighted average of all firms in a given industry in a given year.⁸⁵

⁸⁵ See Deaton, *supra* note 72, at 116-27.

The tobacco industry offers a promising source of within-industry tort risk variation. Tobacco firms' products liability has been steadily increasing throughout the years in the sample. The threat to firm survival caused by tobacco liability was much lower in 1990 than in 2001. For example, a search of major U.S. news sources on the Lexis-Nexis database found that the words "tobacco", "products liability", and "bankruptcy" only appeared in the same sentence three times during the years 1990 through 1993. The same combination of words appeared in the same sentence 19 times during the 1994-1997 period and 56 times during the 1998-2001 period, clearly suggesting that the risk of mass tort bankruptcy was increasing for tobacco firms from 1990-2001. The redistributive theory predicts that secured debt usage should increase as the tort liability risk of tobacco companies increased over the 1990s.

Table 4 examines secured debt usage for tobacco companies relative to other companies as tobacco liability increased through the 1990s. Columns I, II, and III present average industry secured debt to total debt ratios for industry categories for the years 1990-1993, 1994-1997, and 1998-2001, respectively. As the numbers indicate, the tobacco industry did not increase its secured debt usage over time, in spite of the fact that tobacco liability increased over the decade. The tobacco industry employs little secured debt throughout the process.⁸⁶ Secured debt makes up slightly greater than 1% of total debt in the 1990-1993 and 1994-1997 periods. This number decreases to below 1% for the 1998-2001 period, in spite of the increase in tobacco liability. Thus, the redistributive theory's prediction is once again contradicted by the evidence.

⁸⁶ The numbers in Table 4 represent weighted averages. Because larger firms tend to have less secured debt than other firms, the weighted averages are lower than the unweighted averages presented in Table 2.

2. Secured Debt Usage and the Approach of Bankruptcy

Examining the use of secured debt by firms approaching bankruptcy provides another means of determining whether or not secured debt is used for redistribution. As bankruptcy approaches, the expected value of secured debt's redistributive capacity increases.⁸⁷ With bankruptcy more probable, the value of secured debt's priority over other creditor classes grows larger. If the redistributive theory has explanatory power, then all firms in financial distress should therefore issue disproportionate amounts of secured debt. Ordinary firms' ability to issue redistributive secured debt will be constrained by pledge covenants held by contract creditors, however. Tort claimants such as asbestos claimants, by contrast, hold no such covenants. As a result, the larger the share of a firm's liabilities held by tort claimants, the easier it will be for a firm to issue secured debt to redistribute value away from creditors. In other words, firms facing mass tort bankruptcy should issue even more secured debt than other firms in financial distress.

This subsection tests this hypothesis. First, a sample of all firms declaring bankruptcy between the years 1995 and 2002 is obtained from COMPUSTAT. This restriction ensures that the analysis compares firms in similar states of financial distress; any differences between the secured debt levels of the high-tort companies are not the result of differential levels of financial distress because all of the companies declared bankruptcy at approximately the same time. The sample of bankrupt companies is then compared with the list of asbestos-related mass tort bankruptcies compiled by Professor

⁸⁷ See, e.g., Scott, *supra* note 2, at 1458.

White.⁸⁸ Five companies appear in both samples.⁸⁹ In addition, the mass tort bankruptcy list includes the Dow Corning Company, a prominent non-asbestos mass tort bankruptcy.⁹⁰ These six companies are assumed to be mass tort related bankruptcies, while the other companies in the sample are assumed to be ordinary bankruptcies. If the redistributive theory is correct, then these companies should have more secured debt as they approach bankruptcy as compared to the “control group” of companies.⁹¹

The data contradicts the redistributive theory’s prediction. Firms approaching mass tort related bankruptcies hold considerably *less* secured debt than other firms approaching bankruptcy. Row A of Table 5 displays data for firms that will declare bankruptcy as a result of mass tort liabilities within one year. These six firms do not have high proportions of secured debt. Their secured debt to hard assets ratio is just .08 (see Row A, Column III), while their secured debt to total debt ratio is .07 (see Row A, Column IV). Firms within a year of bankruptcy that do not have abnormally large tort liabilities have considerably higher proportions of secured debt. The non-tort firms secured debt to hard assets ratio is .30 (see Row B, Column III), while their secured debt to total debt ratio is also .30 (see Row B, Column IV). Thus, firms not facing large tort liabilities hold approximately four times the proportion of secured debt when compared

⁸⁸ See White, *supra* note 55.

⁸⁹ Missing data issues prevent more overlap between the two lists. To be included in this subset, a firm needed to have complete data for the four years preceding bankruptcy. As a result, a number of firms on Professor White’s list can not be included in the data analysis in this section. The five companies are Federal Mogul, Inc; W.R. Grace & Co.; Kaiser Aluminum and Chemical, Inc.; ; Owens Corning, Inc.; Solutia, Inc. Although Professor White’s article lists many other asbestos-related bankruptcies, the other corporations mentioned in her list do not appear in the COMPUSTAT database.

⁹⁰ See *In re Dow Corning Inc.*, 86 F.3d 482, 486 (6th Cir. 1996).

⁹¹ Note that although the firms in mass-tort group obviously share the characteristic of large tort liabilities, they do not many other traits. For example, the six firms come from 5 different SIC (Standard Industrial Classification) categories. As a result, it is unlikely (although not impossible) that the differences described below between the high-tort sample and the control group stem solely from unobserved non-tort related differences.

with firms approaching mass tort bankruptcy. t-tests of the hypothesis that the non-mass tort firms have a higher secured debt to hard debt ratio and a higher secured debt to total debt ratio than the mass tort firms are significant at the 97% and 99% confidence levels, respectively, in spite of the very small sample size of high-tort firms.

This pattern of secured debt recurs as the lag between the observation year and the year of the bankruptcy declaration grows longer. For example, the data for firms within two years of a bankruptcy declaration is strongly similar to the data presented in Rows A and B. Firms within two years of mass tort bankruptcies (see Row C) have considerably less secured debt than firms within two years of bankruptcy that do not have large tort liabilities (see Row D), although the absolute difference in secured debt proportions between the two categories is smaller than when the firms are within one year of bankruptcy. When the firms are four years from bankruptcy (Rows E and F), the difference in secured debt amounts is greater, with mass-tort-bankruptcy firms having almost no secured debt, while the “control group” of firms continues to have reasonably high amounts. In total, there is one robust conclusion; high-tort firms consistently have less secured debt than other firms near bankruptcy.

This finding strongly negates the redistributive theory. If secured debt is used to redistribute value away from non-adjusting creditors, then surely firms with large numbers of unprotected tort creditors should use large amounts of secured debt for redistribution when they are within one year of declaring bankruptcy. The redistributive benefits of secured debt will never be more obvious or appealing. The fact that such firms actually have *smaller than average* amounts of secured debt appears to present a strong refutation to the redistributive theory of secured debt.

IV. Evaluation of the Statistical Results

The previous Section examined the redistributive theory's predictions regarding the use of secured debt in response to tort risk. The theory's prediction—that secured debt should be used to redistribute value away from tort claimants—was refuted in a number of different specifications. Indeed, high-tort firms typically had lower secured debt amounts than otherwise similar firms without tort risk. Because tort claimants are ripe for redistribution, these results suggest that redistributive motives are not an empirically important determinant of secured debt usage.

While these findings are difficult to interpret in the context of the redistributive theory, they are less puzzling according to other theories. Agency theories, for example, make no strong predictions regarding secured debt usage by high-tort risk firms. High-tort risk firms are no more likely to suffer from agency problems than other firms. As a result, the agency cost reducing characteristics of secured debt should be no more attractive for high-tort risk firms than for other firms.

One variant of the agency cost theory of secured debt offers a particularly compelling explanation for these empirical results. Professors Bolton and Scharstein suggest that decisions regarding the distribution of debt priorities may be understood by focusing on two types of defaults: liquidity defaults, in which a firm lacks the cash to make debt payments; and strategic defaults, which result from opportunistic behavior by managers.⁹² Bolton & Scharstein argue that the efficient type of debt depends upon the relative probabilities of strategic and liquidity defaults. If strategic defaults are more likely, then types of debt that deter opportunistic defaults are more desirable, even if

⁹² Bolton & Scharstein, *supra* note 29, at 2.

these debt types raise the cost of reorganization in bankruptcy. When liquidity defaults are more likely, then debt that is easily restructured becomes more desirable because it reduces costs in liquidity defaults.

Applying this framework to secured debt,⁹³ secured debt reduces the incentive for strategic defaults by giving creditors the right to liquidate the company's assets following a default, and reducing the possibility of reorganization, thus punishing the managers for their opportunistic behavior. This corresponds to the agency cost reducing features of secured debt. These features of secured debt are less attractive in a liquidity default because they raise the costs of bankruptcy and reduce the chances of a potentially efficient reorganization.

Thus, secured debt will be least attractive when the probability of liquidity defaults is high relative to the probability of strategic defaults. Firms facing mass tort bankruptcies fall into this category. The probability of a liquidity default is high for these firms. If courts and juries find them liable for sufficiently high damages (a real possibility for many of these firms), then liquidity default will follow. Strategic defaults are relatively less likely, by contrast. Tobacco firms and the firms that fell victim to asbestos liability tended to relatively mature firms with healthy cash flows, making them unlikely candidates for opportunistic defaults. At a minimum, there is no reason to think that high-tort firms face unusually high strategic default possibilities that outweigh the abnormally large risk of liquidity defaults. Furthermore, high-tort risk firms are more likely candidates for reorganization than the average liquidity defaulting firms. High-tort firms do not default because of an unhealthy business model but rather because of large

⁹³ Bolton & Scharfstein offer a brief analysis of secured debt. *See supra* note 29, at 16-17. Their analysis does not focus on the tradeoff between secured and unsecured debt but rather on the choice of the number of secured creditors. As a result, their conclusions are different than those presented here.

amounts of tort liability.⁹⁴ Anything that makes reorganization more difficult, such as secured debt, should be particularly unattractive for these firms.⁹⁵ In total, these considerations may explain why the high-tort risk firms had less secured debt than otherwise comparable firms without tort risk.

V. Conclusion

The empirical results presented in this paper strongly suggest that companies do not use secured debt to expropriate value from tort claimants. Indeed, firms facing mass tort bankruptcy have less debt than otherwise comparable firms without high-tort liabilities. This finding has numerous policy implications. Many commentators, fearing that firms would use secured debt for redistribution, have advocated superpriority for tort claimants.⁹⁶ The fears upon which these proposals are based are unfounded, however. Corporations do not use secured debt with priority to diminish the bankruptcy realizations of their tort claimants.

These results do not imply that superpriority for tort claimants should be rejected out of hand. Tort deterrence is still greater with superpriority than under the current system, even if companies do not exploit the priority structure to the detriment of tort claimants. Nevertheless, superpriority for tort claimants must be treated with greater skepticism in light of these results. All of the rationales for superpriority depend upon

⁹⁴ Frequently, the tort liability stems from previous actions and is relatively independent of the companies current business. Many of the asbestos companies in the latest wave of bankruptcies acquired their liabilities from successor corporations. *See, e.g., Krull v. Celotex*, 611 F.Supp. 146, 148 (N.D. Ill. 1985) (describing the Celotex and Rapid American Corporations' acquisition of asbestos liability from successor corporations). Their current businesses do not suffer from unusually large tort risk. As a result, many high-tort risk companies operate healthy businesses even after considering future tort risk.

⁹⁵ Managers of high-tort risk firms may care more about the consequences of bankruptcy than the typical managers of a firm. Because high-tort risk firms do not declare bankruptcy as a result of poor businesses, the managers may be unusually likely to lead the reorganized firm and may therefore care more about bankruptcy consequences than the typical manager.

⁹⁶ *See supra*, at note 10.

the redistributive theory in some degree. Because the results presented here cast serious doubt upon the redistributive theory and suggest that agency cost considerations dominate secured debt decisions, policymakers should hesitate before making decisions that may hinder secured debt's agency cost reducing abilities.

This conclusion applies to partial priority proposals more generally.⁹⁷ These proposals stem from fears of secured debt's redistributive capabilities. If firms are not using secured debt for redistribution, however, then these proposals lose much of their analytic force—policymakers should not change priority rules to account for an empirically insignificant problem.

Finally, these results show that reports of the death of liability are greatly exaggerated. If firms do not adjust their capital structures to exploit the seemingly easy redistribution opportunity offered by secured debt's priority over tort claimants, then they are exceedingly unlikely to adopt more radical techniques that would enable firms to avoid liability completely. Similarly, other alternate liability proposals, such as unlimited shareholder liability for corporate torts, must be rethought. If firms do not adjust their capital structures to take advantage of tort claimants, then it is unlikely (though not impossible) that adjusting liability structures for shareholders will cause significant changes in corporate behavior.

⁹⁷ See, e.g., Bebchuk & Fried, *Uneasy Case 1*, *supra* note 2.

Table 1

Summary Statistics				
Variable	Mean	Standard Deviation	Percent of Observations at Zero	Number of Observations (Firms)
Secured Debt (millions of dollars)	\$36.8 mil.	270.3	18.4%	5581
Total Long-Term Debt	\$219.2 mil.	1329.7	8.6%	5580
Total Firm Assets	\$1065.5 mil.	5951.9	0%	5581
Property, Plant, and Equipment—Total	\$680.7 mil.	4154.9	0%	5581
Employees	4,651.2	20,413.6	0%	5,425
Secured Debt to Total Debt Ratio	.31	.28	18.4%	5581
Secured Debt to Hard Assets Ratio	.18	.24	18.4%	5581
Secured Debt to Total Assets Ratio	.09	.13	18.4%	5581

Table 2

Comparative Means and Standard Deviations (5,502 firms in sample)			
I	II	III	IV
Row Number	Category of Firms (number of firm-year observations in parentheses) ⁹⁸	Secured Debt to Total Debt Ratio	Secured Debt to Hard Assets Ratio
A	All Firms not Identified as “High-Tort” Firms	.31	.18
B	Cigarette Firms (10 firms, 65 firm-years)	.11	.12
C	Firms with Large Asbestos Liabilities (6 firms, 57 firm-years)	.15	.18
D	Pooled High Risk Sample (18 firms, 130 firm-years)	.12	.13
E	High Tort Risk Firms Identified by Westlaw (156 firms, 987 firm-years)	.24	.21

⁹⁸ A firm-year observation is data for a given firm in a given year. Thus, if COMPUSTAT contains data on secured debt for Firm A for the years 2000 and 2001, then there will be two firm-year observations for Firm A.

F	Pharmaceutical and Medical Equipment Firms (613 firms, 7259 firm-years)	.33	.14
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Table 3:

Tobit Regressions of the Impact of Tort Risk on Secured Debt Usage					
I	II	III	IV	V	VI
Variable	Estimate (Standard Error in Parentheses)	Estimate (Standard Error in Parentheses)	Estimate (Standard Error in Parentheses)	Estimate (Standard Error in Parentheses)	Estimate (Standard Error in Parentheses)
Tobacco Company	-.141 (.132)				
Company with Asbestos Liability		-.476 (.201)*			
Tobacco and Asbestos Companies			-.254 (.109)*		
Company in industry identified as high-tort by Westlaw				-.071 (.026)*	
Pharmaceutical					.038

Company or Medical Equipment Maker					(.012)
Market-to- Book Ratio	-.0038 (.0015)*	-.0037 (.0015)*	-.0038 (.0015)*	-.0039 (.0015)*	-.0045 (.0015)
Dividends as a Percentage of Total Assets	-.23 (.099)*	-.22 (.099)*	-.22 (.099)*	-.22 (.099)*	-.23 (.099)*
Net Income as a percentage of Fixed Assets	.031 (.0043)*	.030 (.0043)*	.030 (.0043)*	.031 (.0043)*	.034 (.0045)*
Log of Firm Value	-.0028 (.0030)	-.0023 (.0030)	-.0024 (.0031)	-.0032 (.0030)	-.0023 (.0030)
Tax Rate	-.0024 (.0061)	-.0024 (.0060)	-.0024 (.0061)	-.0024 (.0061)	.0023 (.0061)
Foreign Company	-.135 (.016)*	-.134 (.016)*	-.133 (.016)*	-.132 (.016)*	-.134 (.016)*
Exchange Controls, Year Controls,	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes

Delaware Controls	Yes	Yes	Yes	Yes	Yes
Pseudo R- squared	.146	.148	.149	.149	.150

Results based on tobit regressions of a firm's secured debt to hard debt ratio on the variables listed in the table. Each regression has approximately 4,300 separate observations. include other (statistically insignificant) control variables including standard deviation of earnings and a dummy for tax carry forwards.

Table 4

Secured Debt Usage and Changes in Tort Liability Over Time			
	I	II	III
	Secured Debt to Total Debt Ratio 1990- 1993	Secured Debt to Total Debt Ratio 1994- 1997	Secured Debt to Total Debt Ratio 1998- 2001
Tobacco Industry	.011	.011	.007
All Other Industries	.22	.20	.19

Weighted average of secured debt to total debt ratios for all of the firms in the tobacco industry. Average of weighted industry averages of secured debt to total debt ratios for the “all other industries” category.

Table 5

Secured Debt Amounts, Mass Tort Liabilities and the Approach of Bankruptcy			
I	II	III	IV
Row Number	Category of Firms (number of firms in parentheses)	Secured Debt to Hard Assets Ratio (Standard Error of Estimate in Parentheses)	Secured Debt to Total Debt Ratio (Standard Error of Estimate in Parentheses)
A	Firms with large tort liabilities within one year of Bankruptcy (6 firms)	.08 (.078)	.07 (.055)
B	Firms without large tort liabilities within one year of bankruptcy (50 firms)	.30 (.067)	.30 (.053)
C	Firms with large tort liabilities two years from Bankruptcy (6 firms)	.17 (.165)	.15 (.131)

D	Firms without large tort liabilities two years from Bankruptcy (48 firms)	.31 (.067)	.31 (.059)
E	Firms with large tort liabilities four years from Bankruptcy (5 firms)	.01 (.005)	.01 (.012)
F	Firms without large tort liabilities four years from Bankruptcy (40 firms)	.30 (.056)	.28 (.070)

