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TOWARD UNLIMITED SHAREHOLDER
LIABILITY FOR CORPORATE TORTS

Henry Hansmann

and

Reinier Kraakman

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Program in Law and Economics
Harvard Law School
Cambridge, MA 02138

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ABSTRACT:

This article presents a comprehensive case for imposing pro rata liability on shareholders for tort damages that exceed a corporation's net assets. Unlimited liability, we argue, would mitigate the current regime's incentives to overinvest in hazardous industries and to underinvest in precautions. Contrary to the conventional wisdom, a well-crafted rule of unlimited liability could be imposed on both closely-held and publicly-traded corporations without inefficiently impairing capital formation. Rather, the most serious objections to unlimited liability are the difficulty of administering the rule across international jurisdictions, the incentive it could create to disaggregate industrial ownership, and the opportunity it might afford for irresponsible deployment of liability rules. None of these objections, however, seem sufficiently strong to outweigh the advantages of unlimited liability. We conclude that unlimited liability is also superior to alternative reforms such as liberalized veil-piercing, expanded officer and director liability, and requirements for minimal capitalization or insurance.

TOWARD UNLIMITED SHAREHOLDER LIABILITY FOR CORPORATE TORTS

Henry Hansmann† and Reinier Kraakman††

I. INTRODUCTION

Limited liability in tort has been the prevailing rule for corporations in the United States, as elsewhere, for more than a century. This rule is generally acknowledged to create incentives for excessive risk-taking by permitting corporations to avoid the full costs of their activities. Nevertheless, these incentives are conventionally assumed to be the price of securing efficient capital financing for corporations. Although several authors have recently proposed curtailing limited liability for certain classes of tort claims or for certain types of corporations in order to control its worst abuses, even the most radical of these proposals retains limited shareholder liability as the general rule.¹

† Harris Professor of Law, Yale Law School.

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1. E.g., P. BLUMBERG, THE LAW OF CORPORATE GROUPS: SUBSTANTIVE LAW 681-92 (1987) (suggesting abolition of limited liability among firms within "corporate groups"); Dent, Limited Liability in Environmental Law, 26 WAKE FOREST L. REV. 151, 178 (1991) (proposing a "reasonable prudence" test for imposing limited liability on controlling shareholders); Halpern, Trebilcock & Turnbull, An Economic Analysis of Limited Liability in Corporation Law, 30 U. TORONTO L.J. 117, 148-49 (1980) (advocating unlimited liability for small, closely-held corporations, in both tort and contract, and suggesting that directors of large, publicly-traded corporations be made personally liable to involuntary

Surprisingly, given the widespread acceptance of the prevailing rule, the existing literature contains no comprehensive comparison of the consequences of limited and unlimited liability for corporate torts.² We offer such an analysis here. We argue, contrary to the prevailing view, that limited liability in tort cannot be rationalized for either closely-held or publicly-traded corporations on the strength of the conventional arguments offered on its behalf. In fact, there may be no persuasive reasons to prefer limited liability over a regime of unlimited pro rata shareholder liability for corporate torts. The question remains open chiefly because the merits of limited liability depend, as we demonstrate, on empirical issues that are difficult to resolve on the basis of available evidence. At a minimum, however, we conclude that the burden is now on the

creditors); Schwartz, Products Liability, Corporate Structure, and Bankruptcy: Toxic Substances and the Remote Risk Relationship, 14 J. LEGAL STUD. 689, 716-17 (1985) (advocating abolition of limited liability for "knowable tort risks," though without specifying whether shareholders or only directors should be personally liable in an alternative regime); Stone, The Place of Enterprise Liability in the Control of Corporate Conduct, 90 YALE L.J. 1, 74 (1980) (advocating abrogation of limited liability for criminal penalties, punitive damage awards, and "perhaps even civil liabilities arising under federal statutes whose policies do not appear fully discharged by compensation"); Note, Should Shareholders Be Personally Liable for the Torts of Their Corporations?, 76 YALE L.J. 1190 (1967) (advocating unlimited liability for closely-held corporations); M. Adams, Ownership, Control and Limited Liability (undated) (advocating veil-piercing to controlling shareholders for corporations shown to have been established with negative net expected social value); D. Leebron, Limited Liability, Tort Victims, and Creditors (undated) (Center for Law & Economic Studies, Columbia University School of Law, Working Paper No. 48) (advocating abrogation of limited liability for corporate subsidiaries).

2. Most of the thoughtful literature addressing the rationale for limited liability focuses principally on corporate liability to contract creditors. See, e.g., Easterbrook & Fischel, Limited Liability and the Corporation, 52 U. CHI. L. REV. 89 (1985); Halpern, Trebilcock and Turnbull, supra note 1; Woodward, Limited Liability in the Theory of the Firm, 141 J. INSTITUTIONAL & THEORETICAL ECON. 601 (1985). The most notable exceptions are P. BLUMBERG, supra note 1 and D. Leebron, supra note 1. Both Leebron and Blumberg, like us, are skeptical of the case for limited liability in tort, and for some of the same reasons. Unlike us, however, Leebron is ultimately persuaded of the efficiency of limited liability for both closely-held and publicly-traded firms, while Blumberg apparently wishes to retain limited liability for shareholders who are individuals or otherwise not members of corporate groups.

proponents of limited liability to justify the prevailing rule.

The topic is timely and important. Changes in technology, knowledge, liability rules, and procedures for mass tort litigation have for the first time raised the prospect of tort claims that exceed the net worth of even very large corporations. Environmental harms, such as oil spills or the release of toxic materials, are one potential source of massive liability; hazardous products and carcinogens in the workplace are others. At the same time, the mergers and acquisitions movement of the past decade has converted many large corporations that were formerly publicly-traded into highly leveraged closely-held firms; these firms, which have proportionately small net assets and are under great pressure to maximize cash flow, have an unusually strong incentive to engage in excessively risky behavior.

In fact, strong empirical evidence already indicates that increasing exposure to tort liability has led to the widespread reorganization of business firms to exploit limited liability to evade damage claims. The method of evasion differs by industry. For example, placing hazardous activities in separate subsidiaries seems to be the dominant mode of insulating assets in the tobacco and hazardous waste industries.³ By contrast, disaggregating or downsizing firms seems to be the primary strategy for avoiding liability in the chemical industry and, more recently, in the oil transport industry.⁴

3. See M. Lange, Corporate Strategies for Evading Environmental and Tort Liability 17-19 (March 1991) (Harvard Law School mimeo). As Lange notes, both tobacco and environmental services firms have publicly acknowledged that the purpose of subsidiarization has been to evade tort liability. *Id.* at 18-19. For example, Phillip Morris created its holding company "to better insulate each business from obligations and liabilities incurred in unrelated activities." *Id.* at 18 (citing Scredon & Galberson, Tobacco Companies Are in the Fight for Their Lives, BUS. WK., Nov. 11, 1985, at 58, 59).

4. See M. Lange, *supra* note 3, at 22-25. In the wake of the Exxon Valdez oil spill, the Shell Oil Company has recently announced plans to employ independent contractors to transport crude oil in order to insulate itself from potential liability for oil spills. *Id.* at 21 (citing Cook, An Easy Way Out of This Mess, U.S. NEWS & WORLD REP., June 25, 1990, at 14, 15).

Indeed, one study finds that, over the past twenty-five years, a very large proportion of small firms entering all hazardous industries in the United States are motivated primarily by a desire to avoid liability for consumer, employee, and environmental harms.⁵

The Article begins, in Part II, by comparing limited and unlimited liability in the context of closely-held firms. Part III extends this comparison of liability regimes to the special problems presented by publicly-traded firms. Part IV reviews liability evasion strategies that might distort the incentive effects of unlimited liability. In Part V, we emphasize that, in contrast to the conventional analysis, shareholder liability should be viewed as a problem of tort law and not as a problem of corporate law. We also note that limited liability should be retained as the basic rule for contractual creditors, and we discuss the problems of distinguishing between tort creditors and contract creditors. Part VI examines prior experience with unlimited liability and the historical evolution of limited liability. Finally, Part VII explains why more modest reforms, such as expanded director and officer liability for corporate torts, mandatory insurance, or more liberal veil-piercing, appear inferior to a general regime of unlimited shareholder liability.

The economic argumentation in Part II of the article may strike some readers as abstract; those readers might wish to move through this discussion quickly and reserve most of their attention for the material that follows, which focuses on concerns of a more institutional nature.

5. Ringleb & Wiggins, Liability and Large-Scale, Long-Term Hazards, 98 J. POL. ECON. 574 (1990). More particularly, Ringleb and Wiggins find that, between 1967 and 1980, the rate of formation of small firms increased noticeably, in comparison with overall industrial trends, in those industries characterized by relatively hazardous activities. (They do not report how many of these small firms are subsidiaries of larger firms and how many are free-standing.) Ringleb & Wiggins conclude from this that tort liability may not be a good way to control hazardous industrial activity. But one might just as easily, and perhaps more obviously, conclude that it is time to reexamine the rule of limited liability.

II. CLOSELY-HELD CORPORATIONS

For clarity of analysis and exposition, we begin by analyzing the consequences of limited liability for the simplest types of corporate structures and then proceed to examine progressively more complex cases.

A. Corporations with a Single Shareholder

Consider first the situation in which a single person forms a corporation, of which she is the sole shareholder and manager, to exploit an investment opportunity. The shareholder in this case could be an individual or—more realistically and more importantly—another firm of which the corporation in question is a wholly-owned subsidiary. Suppose that undertaking the investment creates a risk of tort liability exceeding the corporation's net value. Assume, moreover, that the shareholder's personal assets are larger than any potential liability that the corporation might incur (an assumption we shall relax below).

1. With Risk Neutrality

Finally, assume that the corporation's single shareholder is risk neutral—an assumption that is reasonable when the shareholder is a parent corporation, even if it is unrealistic when the shareholder is an individual.⁶

6. There are several reasons why a parent corporation is likely to be risk neutral. First, it may have total assets that are relatively large compared with the potential tort damage exposure of the subsidiary firm. Second, the parent may have a number of other subsidiaries or divisions engaged in projects whose risks are largely uncorrelated so that, as a consequence of diversification, it bears little risk in aggregate. And third, the parent

Under these circumstances, it is easy to see that a rule of limited shareholder liability for corporate torts creates incentives for several forms of inefficient behavior.

a. Incentives to Misinvest

The most familiar inefficiency created by limited liability is the incentive it provides for the shareholder to direct the corporation to spend too little on precautions to avoid accidents.⁷ In contrast, a rule of unlimited liability induces the socially efficient level of expenditure on precautions by making the shareholder personally liable for any tort damages that the corporation cannot pay.

Further, limited liability encourages overinvestment in hazardous industries. Since limited liability permits cost externalization, a corporation engaged in highly risky activities can have positive value to its shareholder, and thus can be an attractive investment, even when its net present value to society as a whole is negative.⁸ Consequently, limited liability encourages excessive entry and aggregate overinvestment in unusually hazardous industries.

Finally, limited liability may induce the shareholder either to overinvest or to underinvest in her individual firm—that is, to pick either too large or too small a scale for the firm. This scale effect is ambiguous because investing in the firm under limited liability has two different consequences for potential tort liability that operate in opposite directions. On the one hand, limited liability partially externalizes the marginal

may well be a publicly-traded firm whose tort risk can largely be eliminated by its stockholders through diversification of their shareholdings.

7. See Shavell, The Judgment Proof Problem, 6 INT'L REV. L. & ECON. 45 (1986); Appendix, infra. The Appendix illustrates the effects of a rule of strict liability. Shavell shows similar results can be derived for a negligence rule.

8. See Shavell, supra note 7; Appendix, infra.

increase in tort damages caused by expansion of the firm and thus creates an incentive for excessive investment. On the other hand, increased investment increases the value of the firm, and hence the amount that is available to pay damages to all tort claimants, including those who would have been injured even without the new investment. Consequently, limited liability also creates an incentive to minimize investment in order to reduce the exposure of the firm's owner to tort damages. Although in most cases the second effect is likely to dominate the first, and hence lead to too small a scale for the firm, there may also be situations in which the reverse is true.⁹

9. The second effect is likely to dominate the first, and hence lead to underinvestment at the level of the firm, where the firm's activities result in a relatively large probability of damages that do not substantially exceed the firm's value. A prototypical example might be a small taxicab company that runs a considerable risk of injuring motorists or pedestrians. If the company adds another cab to its fleet, some of the resulting increase in expected accident costs will be externalized by limited liability. This is the first effect, which will create an incentive to add the cab. But adding another cab will also increase the amount of assets available to satisfy a tort judgment from an accident involving any of the company's existing cabs, and this second effect will increase the cost of operating the company's existing fleet. In this situation, the latter effect is likely to outweigh the first, resulting in too small a scale for the firm. As we have already observed, see supra note 5, substantial empirical evidence indicates that in recent years this incentive has, in fact, led to a substantial reduction in the size of corporations in hazardous industries. Even in this case, however, there will at the same time be overinvestment in the industry as a whole owing to cost externalization; although individual firms will be inefficiently small, there will be too many of them.

On the other hand, in some cases the first scale effect could dominate the second, and hence lead to too large a scale for the individual firm. This result is most likely to occur when the firm's activities give rise to a small probability of damages far in excess of the firm's value and when, as the firm expands, the probability that an accident will occur increases faster than the rate of production. Examples are likely to be found among firms that run a low risk of a catastrophic mass tort, as in Bhopal. The Appendix contains a simple illustrative model.

If it is costless to divide up a firm's assets formally into an arbitrarily large number of separate corporate subsidiaries, then limited liability will never result in too small a scale for the firm (when we consider the "firm" as an economic unit under unified ownership and management). Rather, its only scale effect will be the second one described here, which encourages firms to be inefficiently large.

b. Exacerbating Factors: Debt and Dissolution

The perverse incentives just described are exacerbated if the shareholder relies heavily on borrowed capital to finance the firm or if she can withdraw her capital from the firm prior to the time when tort liability attaches.

Consider first what happens if, instead of fully capitalizing the firm with equity, the shareholder directs the corporation to borrow capital either from herself or from a third-party lender. Under the prevailing priority rule in bankruptcy, tort claimants come after secured creditors in a distribution of the firm's assets and share pro rata with its general creditors.¹⁰ Consequently, for any given overall level of capital invested in the firm, a higher ratio of debt to equity limits the firm's potential liability even further. This means that debt financing accentuates the disincentive to invest in safety and the incentive to overinvest in hazardous industries. It also implies that limited liability, together with the prevailing priority rule,¹¹ creates a bias in favor of debt financing.¹²

10. See 11 U.S.C. § 507 (1986) (failing to include tort claims among priority claims in bankruptcy).

11. If, in contrast to the prevailing rule, tort claimants had priority over all voluntary creditors, borrowing would not affect the incentives of the risk-neutral shareholder because lenders would demand compensation for the possibility that their loans will be used to pay tort victims. Partly for this reason, as we discuss at greater length below, see infra Part VI.B, some scholars have advocated that tort victims be given a higher priority in bankruptcy. On the other hand, under our proposed revocation of limited liability in tort, it seems more appropriate that tort claimants in fact be given a lower priority in bankruptcy than they now enjoy. See infra Part III.A.3.

12. That is, to avoid potential tort liability, a corporation has an incentive to adopt a debt/equity ratio that involves inefficiently high agency costs and transaction costs. On the agency costs of debt, see, e.g., Jensen & Meckling, Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure, 3 J. FIN. ECON. 305, 333-43 (1976).

We have been assuming here for simplicity that the shareholder is not wealth constrained—i.e., that she has adequate capital of her own to provide 100% of the firm's equity at any desired scale of operation. If she is wealth constrained, and consequently

The second factor that can exacerbate inefficient incentives under limited liability is the shareholder's option to liquidate the corporation and distribute its assets before tort liability attaches. Since products and manufacturing processes often create long-term hazards that become visible only after many years, firms can—and often do—liquidate long before they can be sued by their tort victims.¹³ State law generally holds shareholders liable for a corporation's debts, including contingent tort liability, for a fixed period—commonly three to five years—after the dissolution of the firm.¹⁴ But many hazards may remain hidden until long after the expiration of this period. When the going concern value of the firm is large, the doctrine of successor liability may prevent a shareholder from evading liability by liquidating the firm.¹⁵ When the value

must borrow at least some of the firm's capital, the story becomes more complicated. For example, if lenders are unable to monitor well the level of risk chosen by the firm's shareholder/owner, then she will have even further incentive to take insufficient precautions, but will bear part of the resulting increase in accident costs herself by having to pay an interest rate on the debt sufficient to compensate the debtholders for the risk of losing part of their principal in case of a tort claim.

13. See Ringleb & Wiggins, *supra* note 5, at 578.

14. See DEL. GEN. CORP. L. § 278 (1990) (actions shall not abate if brought within 3 years after dissolution); MODEL BUSINESS CORP. ACT § 14.07(c)(3) (1984) (revised) (liability for actions brought within 5 years). Shareholders are liable pro rata for these debts up to the full amount of undistributed corporate assets or the amount that shareholders have received in a liquidating distribution. *E.g.*, MODEL BUSINESS CORP. ACT (1984) (revised) §14.07(d)(2).

15. The reason is that a shareholder may have to sell the firm piecemeal to avoid imposing successor liability on a purchaser of its assets. Under the pressure of product liability actions, many state courts have expanded the doctrine of successor liability to follow a so-called "product line theory": A buyer that continues the product line of a selling corporation assumes liability for the seller's torts arising out of the product line. See R. GILSON, *THE LAW AND FINANCE OF CORPORATE ACQUISITIONS* 1109-10 (1986); Roe, *Corporate Strategic Reaction to Mass Tort*, 72 VA. L. REV. 1, 31-32 (1986). The precise formulae for invoking successor liability are complex and vary considerably among the states. See Phillips, *Product Line Continuity and Successor Corporation Liability*, 58 N.Y.U. L. REV. 906, 906 n. 1 (1983) (citing literature).

Nevertheless, the recent efforts to expand successor liability clearly attempt to limit the opportunities to externalize tort costs offered by the limited liability rule. See R. GILSON, *supra*, at 1125-26. Among the many advantages of unlimited liability is that it

of the firm can be recouped by selling its assets piecemeal, however, the firm can be liquidated without shifting liability for long-run hazards to either its purchasers or its shareholders. In this case, a shareholder need not consider the possibility of long-run tort claims at all.

c. Limited Shareholder Assets

Under the simple assumptions made so far, a shift to unlimited liability could entirely eliminate the inefficient incentives associated with limited liability. If we drop the assumption that the firm's single shareholder has sufficient personal assets to cover any potential tort judgment, however, the situation becomes more complicated.

A shareholder who lacks sufficient personal assets to cover a potential tort judgment can obviously escape the full costs of her firm's behavior, even under a rule of unlimited liability, simply by entering personal bankruptcy. Or, put somewhat differently, unlimited shareholder liability merely pushes back the limits on liability to the point at which personal bankruptcy takes effect. Thus, the shareholder in our hypothetical firm may still face incentives to misinvest under an unlimited liability regime. On the other hand, these incentives will be mitigated to the extent that she has any personal assets beyond her equity investment in the firm. Consequently, the incentive argument for unlimited liability remains strong.

Nevertheless, the opportunity to avoid liability by invoking personal bankruptcy

largely avoids the doctrinal morass and high degree of uncertainty that now surround successor liability. With unlimited liability, the liability of a successor firm for previously committed torts is reduced to a matter of contract: a successor firm assumes liability if and only if the contract of sale provides for this; otherwise, or to the extent that the successor firm's assets are insufficient to cover the liabilities that it has agreed to assume, the former shareholders of the selling firm remain personally liable. See *infra* note 43.

raises the possibility that a change to unlimited liability might induce shareholders to undertake further evasion measures. For example, where the shareholder is an individual, unlimited liability may lead to increased incentives to rearrange property holdings in order to minimize the amount of personal assets at stake in a bankruptcy proceeding.¹⁶ In this case, unlimited liability would impose the transaction costs of rearranging asset holdings and the inefficiency of the resulting distorted pattern of wealth-holding. Alternatively, where the corporation's shareholder is another, larger corporation, a shift to unlimited liability could also create an incentive to sell the company to another shareholder with few assets beyond her investment in the company itself. This result would not only continue the incentives to misinvest engendered by limited liability but might also lead to inefficiencies in management or to an undesirable fragmentation of industrial ownership.

These and similar evasion strategies affect not just wholly-owned corporations but all actors subject to potential tort liability. Consequently, we shall postpone their consideration until we have first addressed other aspects of an unlimited liability regime.¹⁷ For the present, we simply observe that there is no a priori reason to believe that the resulting costs would be serious enough to outweigh the efficiency gains from adopting unlimited liability.

16. One might think that, if abolishing limited liability in tort for corporations is a good policy, then it also makes sense to abolish individual limited liability for torts by permitting tort claims to survive personal bankruptcy (that is, by reforming personal bankruptcy so that it excuses individuals only from the claims of contract creditors and not from tort creditors). There is, in fact, something to be said for this view. But personal bankruptcy serves the purpose, not served by corporate bankruptcy, of permitting an individual a "fresh start" and hence improving her incentives for lifetime productivity. This latter purpose may be sufficient to justify retention of personal bankruptcy not just for contract claims but for tort claims as well. In any case, we shall assume here that personal bankruptcy will continue to give individuals the opportunity to avoid large tort claims.

17. Part IV infra.

2. With Risk Aversion

We turn next to the somewhat more complicated case in which the corporation's single shareholder is risk averse.

a. Without Liability Insurance

If the shareholder does not have access to liability insurance, then the inefficiency generated by limited liability is potentially less severe where the shareholder is risk averse than where she is risk neutral. With risk neutrality, damages function only to deter harm, and for this purpose efficiency requires that the risk-neutral shareholder bear the full cost of any tort damages. With risk aversion, however, tort damages can serve two different efficiency functions: they can create incentives for avoiding harms, and they can distribute risk between injurer and victim so that the less risk-averse party bears most of the risk. Choosing an efficient measure of damages commonly requires a trade-off between these two functions.

When the shareholder is risk averse, both the deterrence and risk-sharing functions will often be served best by making her bear less than the full loss. Imposing full damages on a risk averse injurer may lead to overdeterrence.¹⁸ Similarly, efficient risk distribution¹⁹ may require that the victim bear some or all of the loss. As a consequence, limited liability is less likely to lower the private cost of tort damages for shareholders below the efficient level. Put differently, limited liability places a constraint on the tort damages that can be assessed against the shareholder and this constraint is

18. See S. SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* 209 (1987).

19. That is, apportionment of risks to those parties who are least risk averse or best able to diversify the risks.

less likely to be binding, from the standpoint of a lawmaker who tries to induce socially efficient behavior while still respecting limited liability, when the shareholder is risk averse than when she is risk neutral. On the other hand, this constraint often will be binding even when the shareholder is risk averse. The result will then be a lower level of precaution, and perhaps less risk-bearing by the shareholder than efficiency requires.²⁰

It follows that, if full liability for damages were the only remedy under tort law, situations would arise in which limited liability would be comparatively efficient because unlimited liability would impose far too much risk upon the shareholder. But in fact liability for the full amount of damages is not the only possible remedy; more flexible damage rules are also possible. And, by combining unlimited liability with a flexible damage rule, a lawmaker can always achieve a result that is at least as efficient as that which can be achieved under limited liability. This last observation underlines two important points concerning the relationship between corporate law and tort law that we shall return to below in Part V. First, the choice between limited liability and unlimited liability interacts with the rule of tort liability that is applied. Second, limited liability is a poor substitute for appropriate reform of tort doctrine.

To be sure, one could argue that limited liability is justified precisely because it affords a means, however crude, of making the rule of tort liability vary with the size of

20. Shavell, supra note 7, defines as "the efficient level of care" the level of care x^* that (in a model similar to that in the Appendix) would be efficient in a world of risk-neutral actors. He then shows, in effect, that the level of care taken by an uninsured risk-averse shareholder under limited liability will commonly be less (and sometimes higher) than x^* under either a negligence regime or a strict liability regime. But it does not necessarily follow from this that the shareholder is acting inefficiently. In a world in which insurance is unavailable, the injurer is risk averse, and the only tool of policy available is a liability rule, the socially efficient level of care may be lower or higher than the level of care that is efficient under risk neutrality (that is, the level of care that Shavell defines as x^*). Thus, the normative implications of Shavell's results are ambiguous.

the corporation for any given class of torts. The shareholders of closely-held corporations are often not efficient risk-bearers and hence should not have tort losses imposed on them in full. By contrast, large publicly-traded corporations (which we shall discuss more extensively below) are generally best treated as risk-neutral actors, and thus should ordinarily bear the full costs of the torts they cause. Therefore, the argument might run, given a uniform measure of damages for all types of corporations, a rule of limited liability may be efficient because for any given class of torts, that rule is more likely to limit recovery from closely-held corporations than from publicly-traded corporations.²¹

But this argument for limited liability is subject to at least three objections. First, any such risk-sharing advantages of limited liability must be offset against the incentives limited liability creates for opportunistically doing business through small thinly capitalized corporations. Second, as we shall argue more extensively in Part V, it appears well within the competence of the courts to adjust tort damages according to the nature of the corporate defendant, and this approach is far superior to limited liability as a means of allocating risk between corporate shareholders and tort victims. Third, as discussed immediately below, liability insurance is widely available for small businesses, and this vitiates an argument for limited liability based on shareholder risk aversion.²²

Undoubtedly, some small corporations that are viable under limited liability

21. Leebron might be understood to be making an argument of roughly this character. In any event, he argues that risk-bearing justifies retention of limited liability for closely-held corporations but not for publicly-traded corporations (for which he justifies limited liability on other grounds). D. Leebron, supra note 1, at 52.

22. Moreover, where the insurance market is unwilling to assume a risk, there remains the option of undertaking the activity instead through a larger publicly-traded corporation and having the stock market bear the risk. Some diseconomies of scale might be incurred, but one might simply view this as the price of more efficient risk-bearing.

would cease to be so under unlimited liability, since they could not buy adequate insurance and their shareholders would be unwilling to expose personal assets to the risks of a tort judgment. But there is no reason to assume that such small firms should exist—that is, that they have positive net social value. In fact, an important advantage of unlimited liability is precisely that it would force such firms—which are effectively being subsidized by their tort victims—out of business.

b. With Liability Insurance

When liability insurance is available, as it is for most businesses,²³ the argument for unlimited liability is further strengthened.

Consider first the simple case in which perfect insurance is available—that is, insurance that has no loading costs (is actuarially fair) and gives rise to no moral hazard (presumably because the insurer can monitor the insured's behavior effectively). In this case, with unlimited liability, a shareholder having personal assets sufficient to cover any tort judgment will have an incentive to purchase full insurance. In turn, such insurance will give the shareholder efficient incentives to internalize costs with respect to both level of care and magnitude of investment.

With limited liability, on the other hand, the shareholder will often have an incentive either to purchase no insurance or to purchase insurance that is insufficient to cover the full range of losses that her corporation might cause.²⁴ Liability insurance

23. Although there appears to have been a genuine crisis of availability in the insurance market of the early 1980's, insurance became generally available again in the late 1980's—albeit at much higher premium levels. See Viscusi, The Dimensions of the Product Liability Crisis, 20 J. LEGAL STUD. 147, 176-77 (1991).

24. Consider, for example, the simple case in which the loss from an accident, and hence the amount for which the firm will become liable, is fixed at some given amount L . Depending on the size of L , limited liability creates an incentive for the firm either to

sold to businesses invariably has an upper limit on coverage, and it appears that most firms choose a relatively low coverage limit,²⁵ suggesting that incomplete insurance is a common strategy.²⁶ And, to the extent that a corporation is underinsured, its

purchase enough insurance to cover the full amount L or else to purchase no insurance at all. In particular, if L is smaller than the value of the firm, or if it is not too much larger than the value of the firm, the shareholder will buy full insurance. But, when L is large enough, with limited liability the shareholder has an incentive to purchase no insurance at all. See Shavell, *supra* note 7.

More generally, consider the case in which the magnitude of the loss L can be anywhere within a broad range of values. The shareholder has an incentive to behave in one of three ways, depending on the distribution of L : (a) if the smallest possible loss is large enough, have the corporation purchase no insurance; (b) if the largest possible loss is small enough, have the corporation purchase insurance to cover all possible losses; or (c) if the range of possible losses is sufficiently broad, have the corporation buy insurance but with an upper limit on coverage that is less than the largest possible loss. See Huberman, Mayers & Smith, *Optimal Insurance Policy Indemnity Schedules*, 14 BELL J. ECON. 415 (1983).

25. For example, of the roughly 350,000 insurance policies that Aetna writes for the "standard market"—which includes all business firms except the Fortune 500—one-third have coverage limits of about \$300,000 per accident, one-third have limits of about \$500,000 per accident, and one-third have limits of about \$1 million. In addition, 10% of all firms carry additional "umbrella" coverage. Of the latter firms, half carry \$1 million in umbrella coverage per accident, one-quarter carry \$2-3 million, and one-quarter—about 2.5% of all firms insured—carry \$5 million or more. Telephone interview with Frank Barry, Head Underwriter for Standard Market, Aetna Insurance Company (Apr. 27, 1990).

26. It is estimated that, of the 350,000 policies Aetna writes for the standard market, only about 100 claims per year require Aetna to pay out the full policy coverage, including umbrella coverage. It has been suggested to us that this number may be a substantial underestimate of the frequency of cases in which firms cause tort damages that exceed both the firm's net assets and its insurance coverage. The reason for this is that, where a firm's fungible assets are relatively small compared to its insurance coverage, the claimant may be induced to settle for less than the full insurance coverage since the policy limit is effectively the most that could be gained by going to trial. *Id.*

A simple example may help to illustrate this point. Suppose that a firm with \$10 million in fungible assets (that is, assets that could be effectively levied upon in bankruptcy) and \$50 million in liability insurance causes \$150 million in damages. And suppose that the victim estimates that if he goes to trial he has a two-thirds probability of getting a favorable tort judgment for the full damages and a one-third probability that the court will hold that the firm has no tort liability. If the firm's insurance company offers to settle the claim for \$45 million—that is, \$5 million less than the policy limit—the victim will find it worthwhile to accept even if he is risk neutral, since his expected gain from going

shareholder will once again have incentives to take insufficient care and to choose an inefficient scale for the firm.

In reality, of course, perfect insurance cannot be purchased. Loading costs account for roughly one-quarter of all premiums,²⁷ and most liability insurance undoubtedly involves a degree of moral hazard. If these market imperfections were severe enough, many firms would not purchase full insurance even under a regime of unlimited liability. Yet these imperfections may not be serious for most businesses. Loading costs are probably not disproportional to the transaction costs of self-insurance or insolvency. That is, even without insurance, the average firm would probably incur expected costs of similar magnitude in the form of lawyers' fees to defend tort actions and costs associated with bankruptcy. In addition, writers of liability insurance for businesses claim to be able to control moral hazard by inspecting their insureds and employing experience ratings.²⁸ These considerations, together with the fact that even today, under limited liability, most businesses do purchase significant—albeit not fully adequate—amounts of liability insurance, suggest that insurance markets work reasonably well. Thus we have good reason to believe that a shift unlimited liability would be less likely to greatly increase risk-bearing by shareholders of small corporations than to induce those shareholders to purchase adequate insurance.

to trial is only \$40 million (that is, two-thirds times the sum of the defendant's insurance coverage and fungible assets). With unlimited liability, on the other hand, the plaintiff would refuse to settle for less than \$100 million, at least if the firm's shareholders had sufficient assets to cover the full potential tort liability.

27. De Alessi, *Why Corporations Insure*, 25 ECON. INQUIRY 429, 432 (1987) (loading costs were 27% of annual premium fees paid in 1984 data).

28. Telephone interview with Frank Barry, *supra* note 25.

B. Corporations With Multiple Shareholders

For purposes of evaluating liability regimes, the closely-held corporation with multiple shareholders resembles the single-shareholder corporation in most respects. More particularly, there are no important differences between sole-owner and jointly-held firms when all of the shareholders in the jointly-held firm have identical assets, risk preferences, and information.²⁹ If a firm's shareholders differ among themselves in these respects, however, there may be consequences for the costs and benefits of unlimited liability, and these consequences may depend on the particular form of unlimited liability rule chosen.

1. Shareholder Differences and the Costs of Unlimited Liability

Even under a limited liability regime, heterogeneous shareholders face different payouts in a jointly-held firm. Differences in risk aversion or in the form of investment (for example, human capital versus financial capital) inevitably lead shareholders to value a firm's potential projects differently.

An unlimited liability regime accentuates such differences in payouts. Disparate risk preferences are more important because shareholders bear more risk under unlimited liability. And, although differences in the form of investment might matter

29. Of course, even in these circumstances, multiple shareholders would respond to unlimited liability differently than would a sole owner who capitalized an identical firm of the same size. The joint owners might be less risk averse if potential tort losses were modest, since each would individually bear only a portion of her firm's contingent losses—while the sole owner would bear her firm's entire loss. Conversely, the joint owners might be more risk averse if potential tort losses were large, since in this case the sole owner with limited personal assets might be able to externalize more of the losses. These effects, however, are artifacts of the relative sizes of investments and asset pools; they do not result from the distinction between sole-owner and jointly-held firms.

less under unlimited liability,³⁰ this effect is overshadowed by the importance of disparities in personal wealth. In the absence of insurance, a catastrophic tort may cost shareholders their entire wealth under unlimited liability; under limited liability, their tort losses are limited to their investments in the firm. Consequently, under unlimited liability, shareholders with substantial personal assets may be more conservative than their less wealthy fellow shareholders in evaluating an investment that brings a risk of very large tort damages. Conversely, however, very wealthy shareholders may be less risk averse than fellow shareholders with more modest personal assets in evaluating projects that bring a substantial risk of a relatively small tort loss—a loss that would be enough to bankrupt the less wealthy shareholders but not the more prosperous ones.³¹

Yet the mere fact that the valuations of heterogeneous shareholders diverge more sharply under unlimited liability than under limited liability does not imply, by itself, that unlimited liability is more burdensome for the jointly-held firm than for the single-owner firm. If multiple shareholders could bargain and monitor risk costlessly, they could easily adjust the firm's investments and distributions in a manner that accords efficiently with their disparate stakes and preferences. For example, shareholders whose personal assets were unusually large might be given a larger share of current earnings

30. For example, a shareholder who contributed only human capital to the firm would find her personal financial wealth at risk under unlimited liability but not under limited liability. Thus, her incentives under unlimited liability would differ less than they would under limited liability from those of her fellow shareholders who have contributed only financial capital to the corporation.

31. We are intentionally vague here about the particular form of the cost-sharing rule that would be imposed on shareholders under unlimited liability, since the general arguments offered here apply regardless of the rule chosen. In the following Section, we discuss the choice of a specific rule.

to compensate them for the larger tort exposure they bear.³² Similarly, the level of risk to be incurred by the firm might be made the subject of explicit agreement among the shareholders, with those whose preferences are far from the level chosen receiving some form of additional payment in compensation.

In order to make and enforce such agreements, however, the shareholders will generally have to expend resources on negotiating with each other and on monitoring not only the risks incurred by the firm but also each other's assets. It is in imposing these costs on the firm—or in deterring the formation of an otherwise efficient firm because these costs are too high—that unlimited liability burdens the jointly-held firm more than it does the firm with a single shareholder. This raises the question of whether these additional costs that unlimited liability imposes on the heterogeneous shareholders of a jointly-held firm are a sufficient basis for preferring limited liability over unlimited liability, at least for a jointly-held firm.³³

We believe they are not for several reasons. First, insurance is an obvious solution for the negotiating and governance problems of multiple shareholders, as it is for many other problems that might otherwise be associated with unlimited liability. Most small firms already purchase liability insurance, and they would presumably purchase more under unlimited liability to cover foreseeable tort losses.³⁴ But the

32. In effect, wealthy shareholders insure the firm under these circumstances. They might be compensated for this service by a simple premium or, more likely, by a senior security with generous returns that include an implicit insurance premium.

33. It would be possible to make unlimited liability the rule for firms with a single shareholder—most notably, wholly-owned corporate subsidiaries—while leaving limited liability as the rule for corporations with multiple shareholders. As we note in our discussion of veil-piercing, *infra* Part VII, however, such an approach would create obvious difficulties. For example, it would encourage corporations to sell to the public a minority—say five percent—of the shares in its otherwise wholly-owned subsidiaries in an opportunistic effort to avoid unlimited liability.

34. Of course, multiple shareholders might also have divergent preferences about how much insurance to buy, thus displacing the bargaining problem onto the firm's insurance

additional premiums charged for this expanded coverage would, as a matter of course, effectively be shared among the firm's shareholders pro rata, according to the amount they had invested, thus mitigating problems of heterogeneous impact. Second, even when insurance is unavailable, the absolute costs of drafting and enforcing a suitable bargain among a handful of shareholders may not be large. After all, general partners routinely solve an even more difficult problem by entering into partnership agreements that, explicitly or implicitly, either reflect or ignore heterogeneous valuations of personal liability, not only for torts but for contract debts as well. Finally, if a promoter can neither purchase insurance nor recruit investors without it, the proposed venture may very well not be socially efficient in the first instance.

2. The Choice of an Unlimited Liability Rule

Even if differences among multiple shareholders do not make out a case for limited liability, however, they do raise a question about the best way to apply unlimited liability to the closely-held firm. Two rules of unlimited liability are possible. The first is a rule of joint and several liability, under which each shareholder is personally liable for the full amount of a tort judgment to the extent that it exceeds the value of the firm's assets. The second is a rule of pro rata liability, under which each shareholder is personally liable for a tort judgment in proportion to her equity

decision. Supplementary insurance for individual shareholders, which we discuss at greater length below, infra Part III.A.2, would help resolve this problem. And, even if such individual coverage remains unavailable, bargaining over insurance for the firm is unlikely to pose a significant problem. In most cases, it is in the interests of all shareholders to buy insurance adequate to cover most or all of the firm's foreseeable tort losses. Indeed, one reason to purchase additional insurance on the margin is precisely to guarantee that all shareholders have homogeneous preferences with respect to risk-taking, and hence reduce the costs of collective decision-making.

ownership of the firm. To see how these rules differ, suppose that a wealthy investor holds five percent of a hotel company, while two impecunious hoteliers hold the remaining ninety-five percent.³⁵ If a fire causes tort damages that exceed the company's assets by \$200 million, the wealthy investor is potentially liable for \$200 million under the joint and several rule but only \$10 million under the pro rata rule.³⁶

The choice between the joint and several and pro rata rules resurrects, in a new form, the tradeoff between perverse incentives and transaction costs that underlies the choice between unlimited and limited liability. The joint and several rule is the prevailing rule in partnership law and in those exceptional circumstances in corporate law where the corporate veil is pierced and shareholders are held personally liable for corporate debts.³⁷ Moreover, as compared to the pro rata rule, the joint and several rule has the advantage of deterring judgment-proof shareholders from externalizing tort costs.³⁸ In effect, the joint and several rule conscripts wealthy shareholders to police

35. This hypothetical is not entirely fictitious. See Coyle, 2,337 Plaintiffs, \$1.8 Billion, NAT'L L.J., Jan. 16, 1989, at 1 (litigation following San Juan Dupont Plaza Hotel fire).

36. Since contribution on a pro rata basis is generally available under the joint and several rule, the joint and several and pro rata rules converge when all shareholders can pay their pro rata portions of the firm's tort damages. In this situation, the chief difference between the rules is that the pro rata rule assigns the full costs of collection to the plaintiff, while the joint and several rule assigns the bulk of these costs to the wealthiest defendant shareholder. Yet, because the joint and several rule also assigns the risk of failing to collect to the wealthiest defendant, the two rules produce dramatically different results when, as in the hypothetical in the text, some shareholders are judgment proof. For discussion of the differing impact of these rules in tort law, see Rosenberg, Joint and Several Liability for Toxic Torts, 15 J. HAZARDOUS MATERIALS 219 (1987).

37. By contrast, corporate law presently follows a variation of the pro rata rule in fixing the liability of shareholders for claims arising immediately after the dissolution of the corporation. See supra note 14.

38. Under the pro rata rule, a wealthy and an impecunious shareholder might together undertake a project with negative social value: although the wealthy shareholder would face liability for a fraction of any tort losses, the two shareholders together could still share the expected gains from avoiding the impecunious shareholder's share of any liability. As

the firm's insurance coverage or, alternatively, to monitor the assets of its other shareholders and the riskiness of its operations.³⁹

The price of deterring risk-shifting under the joint and several rule, however, is to increase further the transaction costs imposed by unlimited liability on a jointly-held firm. When insurance is unavailable, the joint and several rule forces the firm's full tort losses on its wealthy shareholders and thus exacerbates the problem of asymmetrical stakes among investors.

Comparing the additional transaction costs imposed by the joint and several rule with the costs of externalizing tort losses under the pro rata rule is difficult. Indeed, it is conceivable that neither genre of costs is very important: on the one hand, transaction costs among a handful of shareholders may be so low that even hard bargains are easy to strike; on the other hand, even impecunious shareholders may fear bankruptcy so much that they are unwilling to gamble on risky investments. Thus, if the universe included only closely-held firms, we would be hard pressed to choose between the joint and several and the pro rata rules. Nevertheless, a different reason justifies preferring the pro rata rule over the joint and several rule: as we demonstrate below, the pro rata rule is clearly the superior alternative for publicly-held corporations. The advantage of promulgating a single rule for all corporations makes the case for the pro rata rule compelling for closely-held firms as well.

an illustration, the wealthy shareholder might receive 50% of the firm's equity after contributing 40% of its capital. In this case, 10% of the equity awarded to the wealthy shareholder would presumably reflect both (1) her service in assuming half of the firm's excess tort costs and (2) her portion of the gain that results from externalizing the other half of these costs. By contrast, the joint and several rule would make the wealthy shareholder liable for the firm's entire losses, and thus preclude any venture between the two shareholders that did not have a positive social value from the outset.

39. Cf. Kraakman, Corporate Liability Strategies and the Costs of Legal Controls, 93 YALE L.J. 857, 871 (1984) (imposing personal liability on managers to induce monitoring of insurance levels and risk).

Of course, shareholders might attempt to transform the pro rata rule into a de facto limited liability rule—for example, by disguising some of the equity contribution of a wealthy investor as debt. Although evasive measures of this sort might be more difficult to detect under the pro rata rule than under a joint and several rule, we are confident that the courts could check the most egregious instances of evasion by treating the suspect securities as constructive equity.⁴⁰

III. PUBLICLY-TRADED CORPORATIONS

Limited liability gives the managers of publicly-traded corporations an incentive to assume too much risk, just as it does the shareholders of closely-held firms. However, the public corporation adds several novel elements to the comparison of liability regimes. In addition to a new class of hired managers, these include: (1) large numbers

40. A similar problem arises in tax law, where shareholders in closely-held firms have an incentive to characterize a substantial fraction of their investment in the firm as debt, rather than equity, in order to avoid the corporate level tax that is levied on earnings paid out as dividends but not on earnings paid out as interest. The courts willingly treat debt as equity for tax purposes when it is conspicuously used for tax avoidance in this fashion. See B. BITTKER & J. EUSTICE, *FEDERAL INCOME TAXATION OF CORPORATIONS AND SHAREHOLDERS* ¶ 4.04 (4th ed. 1979). A similar—indeed, much the same—jurisprudence could well be developed for purposes of imposing shareholder liability for corporate torts. Or it might be not only easier but more sensible, for purposes of the pro rata tort liability rule proposed here, simply to treat as equity all debt in a closely-held corporation that is held by the corporation's shareholders.

This is not to deny that, so long as no effort is made to mislead contract creditors, there are good reasons for respecting the characterization of a portion of a shareholder's investment as debt rather than equity for purposes of contractual liability. Owners of the firm should be free to make contractual arrangements to share the risks of enterprise with other creditors in any way that they and those creditors wish. Thus, there can be perfectly legitimate reasons for a shareholder to hold debt in her own firm, and it should not be assumed that all such arrangements are mere shams undertaken for the purpose of evading liability or taxes. (The bankruptcy doctrine of equitable subordination, which subordinates a shareholder's debt to that of outside creditors when there is evidence of misrepresentation, implicitly recognizes this.)

of passive shareholders; (2) a market for freely-trading stock; (3) substantial assets; and (4) potential tort liability that may not only exceed the firm's assets but that may not be fully insurable at any premium. The traditional view is that these elements—and especially the need to maintain an efficient market for shares—make unlimited liability even less appropriate for public firms than for closely-held firms. The merits of this view turn principally on three issues. The first is the feasibility of administering unlimited liability when shareholders are numerous and trade frequently. The second is the potential burden that unlimited liability might impose on the securities market. And the third is whether unlimited liability imposed on public shareholders can improve the incentives of the managers who actually determine firm policy.

A. Designing an Unlimited Liability Rule

The threshold issue is whether unlimited liability is feasible for public corporations. Several commentators have questioned whether any unlimited liability regime can obtain meaningful recovery from widely dispersed shareholders without sacrificing the liquidity of the securities market.⁴¹ We believe that such a regime is clearly feasible: a well crafted rule of unlimited liability would neither impair the marketability of securities nor impose excessive collection costs.

It might be argued that, even if feasible, unlimited liability in tort for publicly-traded corporations is unnecessary, since relatively few publicly-traded firms have been bankrupted by tort liability.⁴² There are, however, important reasons for extending an

41. See, e.g., Woodward, supra note 2, at 604-6; D. Leebron, supra note 1, at 26-8, 38-9.

42. Since 1982, however, asbestos liability—admittedly the most catastrophic genre of tort liability thus far encountered—has led to the bankruptcy of eleven major asbestos companies. Judicial Conference of the United States, Report of Judicial Conference Ad Hoc

unlimited liability regime to publicly-traded firms. First, the paucity of tort judgments bankrupting such firms may underrepresent the frequency with which publicly-traded firms cause tort damages exceeding their net worth, since tort victims suing under a regime of limited liability have a strong incentive to accept a settlement for less than the full value of the firm.⁴³ Further, as suggested in the Introduction, the threat of tort liability exceeding the net assets of such firms is likely to increase in the future. Finally, and most importantly, any effort to extend unlimited liability to closely-held firms without including publicly-traded firms as well would invite corporations that are currently closely-held to avoid unlimited liability simply by selling some portion of their stock to the public.⁴⁴

1. When Should Liability Attach to Shareholders?

An administrable rule of unlimited liability for the public firm must specify both a measure of shareholder liability and the point at which freely-trading stock imposes personal liability on its holders. For reasons that we have already outlined in discussing closely-held corporations, and that will become more apparent below, the most

Committee on Asbestos Litigation 51 & n.33 (Mar. 1991) (unpublished mimeo).

In the case of Johns-Mansville, a trust fund endowed with \$1.7 billion, the bulk of the firm's value, was created during reorganization to settle asbestos claims without the need for additional litigation. As of this writing, the trust fund has depleted its endowment after settling only 25,000 out of more than 140,000 claims. The remaining claims, now in litigation, have an estimated value of \$6 billion. *Id.* at 25.

43. For example, if a corporation with net assets of \$3 billion causes an accident resulting in damages of \$10 billion, the victims may accept a settlement offer of \$2.5 billion, and save the company from bankruptcy, since \$3 billion is the most that could be recovered in any event under limited liability and since settlement would avoid the costs and delay of going to trial as well as the possibility that the suit might fail. *Cf. supra* note 26 (tort victim incentives to settle below insurance coverage limits).

44. This problem is discussed more extensively, *infra* Part VII, in connection with proposed veil-piercing reforms.

plausible measure of shareholder liability is a rule of pro rata liability for any excess tort damages that the firm's estate fails to satisfy. The more difficult problem is selecting the timing rule that determines which shareholders become liable after a tort occurs.⁴⁵

The choice of a timing rule in determining when excess liability attaches to shareholders inevitably involves a conflict between administrative complexity and opportunities for evasion. An "occurrence" rule, under which liability attaches to persons who are shareholders at the time a tort occurs, is the most difficult rule for shareholders to evade but also the most difficult to administer. A "judgment" rule that attaches residual liability only to those persons who are shareholders at the time of judgment is the simplest to administer but creates widespread opportunities for evasion. A variety of considerations suggest that a reasonable compromise is a modified version of a "claims-made" rule, which attaches liability to persons who are shareholders when—or somewhat before—the tort claim is filed.⁴⁶ We style this modified claims-made rule an "information-based" rule.

The case for an information-based rule rests in part on the drawbacks of an occurrence rule. The most obvious of these drawbacks is the difficulty of determining

45. Additional issues involving assignment of liability would also need to be sorted out. For example, there would be a question as to whether liability associated with stocks held in street name would attach to the beneficial owner of the stock or to the broker in whose name the stock is held.

Liability evasion strategies involving shifts in formal ownership of securities are discussed, *infra* Part IV.A.

46. The range of possible rules is much broader. Liability might attach at any point from the occurrence of the injury to the onset of collection efforts against shareholders. Thus, other alternatives include liability that attaches when judgment is entered against the corporation, when the firm enters bankruptcy, or when excess liability against shareholders is assessed at the conclusion of the bankruptcy proceeding. As we indicate below, we reject a rule that would impose liability late in the legal proceedings because it would afford shareholders too great an opportunity to evade liability.

precisely when a corporate tort has happened. Indeed, many toxic torts lack an occurrence date even in theory because, as in the asbestos cases, harm occurs gradually over a ten- or twenty-year period. The task of apportioning excess liability among all investors who held shares in an affected company at any time during this period would be an administrative nightmare. In addition, shareholders could never escape the risk of liability, since any beneficial ownership of shares, no matter how brief, would impose permanent responsibility for undiscovered wrongdoing.

At first glance, a simple claims-made rule might seem to answer the drawbacks of an occurrence rule. A claims-made rule would permit shareholders to escape liability for undiscovered torts merely by selling their shares. Under a claims-made rule, moreover, shareholders who did incur a risk of personal liability by virtue of a tort filing would usually receive clear notice of that contingent liability even though any actual judgment against these shareholders would follow only much later, after an unfavorable resolution of the tort action and a subsequent bankruptcy proceeding. For the same reason, the administrative task of apportioning liability among shareholders would also be greatly simplified under a claims-made rule.

Nevertheless, a simple claims-made rule would not be satisfactory in every case. Where claims accumulate gradually, as they did in the asbestos cases, a simple claims-made rule might invite massive selling at the time the first claims are filed.⁴⁷ Indeed, even when a catastrophic tort occurs in a single and well-publicized moment, as with

47. This problem of wholesale evasion of shareholder liability through the market has been analyzed by Woodward, *supra* note 2, at 602. If personal liability for excess tort damages could be transferred by sale of the shares until a relatively late date (for example, until the time of judgment or even bankruptcy), then there would always be a strong incentive, once it became apparent that the expected value of tort claims exceeded the firm's net worth, for shareholders to seek to create "homemade limited liability" by selling, or simply giving, shares to insolvent or dispersed persons from whom collection would be difficult.

the Bhopal disaster, shareholders might succeed in exploiting the interval between this moment and the time when the first claims are filed to dispose of their shares opportunistically. In addition, a simple claims-made rule might also leave residual uncertainty as to the liability of particular shareholders when, for example, claims filed at different times were later consolidated for trial. Applying a claims-made rule mechanically in these cases would recreate the administrative complexity of an occurrence rule in determining which claimants could ultimately collect against which shareholders.

For these reasons, we propose a modified form of the claims-made rule—an "information-based rule"—under which liability would attach to shareholders at the earliest of the following moments: (a) when the tort claims in question were filed; (b) when the corporation's management first became aware that, with high probability, such claims would be filed; or (c) when the corporation dissolved without leaving a contractual successor.⁴⁸ This information-based rule would fix liability before shareholders could evade responsibility for tort damages, without creating the uncertainties and complexities that would attend an occurrence rule.

A "liability date," for purposes of the information-based rule, might be established in either of two ways. First, corporate management could establish it by making an

48. Even though corporate dissolution is a more likely prospect for closely-held firms and corporate subsidiaries than it is for publicly-traded firms, the introduction of unlimited liability might increase the incidence of early dissolution among publicly-traded firms in the absence of a device for holding exiting shareholders liable. Holding the terminal class of shareholders liable, in both close and public corporations, for post-liquidation claims would also permit a radical simplification of successor liability doctrine in tort cases. Since shareholders would bear liability for hidden hazards, it would no longer be necessary to impose successor liability to prevent the externalization of tort costs. See *supra* note 15 (function of successor liability). Thus, purchasers of corporate assets could be spared the expense of monitoring for hidden hazards and the risk of unwittingly incurring successor liability unless they voluntarily undertook to assume this liability in, for example, a statutory merger.

announcement, perhaps accompanied by a court filing, stating that a particular action or pattern of conduct was expected to give rise to tort claims that might exceed the net value of the firm, and accepting responsibility on behalf of all current shareholders for likely future claims arising from the conduct in question.⁴⁹ Management would have several incentives to make such an announcement, including a desire to preserve an orderly market for the company's stock,⁵⁰ disclosure obligations under the securities acts,⁵¹ and management's fiduciary obligations to its shareholders under state corporation law.⁵² Second, if management failed to choose a date (or if it chose an

49. To minimize litigation costs, shareholders might be required to waive any rights to contest the liability date as a condition of owning shares.

50. As soon as it became known by the public that an event had occurred that might soon generate claims that would bankrupt the firm, the market for the firm's shares would probably collapse (indeed, the markets might call a formal halt to trading) until a liability date had been established clarifying that subsequent purchasers of the stock were free of the residual liability.

For closely-held firms, the information-based rule would make it clear that manager/owners could not evade excess liability by dumping their shares once they suspected that tort claims might bankrupt the firm. In fact, it is arguable that such opportunism would be of no avail even under a simpler claims-made rule, in which liability attached only upon the filing of a claim, since the owner/managers would be constrained by existing prohibitions against insider trading and fraudulent conveyances. Cf. *Roe*, *supra* note 15, at 32-34 (reviewing fraudulent conveyance law).

51. To assure the fair and efficient functioning of the securities markets, there would be a good argument for supporting the information-based rule at the federal level by adoption of a special rule, under the securities acts, requiring management to make an announcement disclosing prospective excess tort liability as soon as they become aware of it. Even absent such a special rule, presumably the corporation and its managers would be prohibited from trading in the firm's shares without making such an announcement.

52. Arguably management could cause substantial damage to its current shareholders by failing to make an announcement, since, even without the announcement, the company's current shareholders would be unlikely to escape liability by selling their shares after management became aware of the potential liability (because the courts would be likely to choose the date of that awareness as the liability date in any event), and since making the announcement would be likely to raise the price that current shareholders would receive for their stock. That is, management could generally cause current shareholders only harm and no good by delaying the announcement, and hence could well be found in breach of their duty of care to the shareholders.

inappropriately late date), a liability date could be judicially established on the initiative of tort plaintiffs, either at a special hearing for this purpose after a claim has been filed or, where many small claims are involved, at the time a hearing is held to consolidate cases or to certify a class. In many cases, judicial selection of a liability date would necessarily involve an element of arbitrariness. This would not be a drawback, however, as long as the courts took care to resolve ambiguity in favor of the earliest plausible date in order to deter opportunistic share trading.

The information-based rule we propose would permit shares of an affected company to resume trading unencumbered by outstanding personal liability shortly after the first filings in a major tort action, or even earlier if management announced a liability date. Thus, new investors and old shareholders could trade in a liquid market without reallocating liability for actual or anticipated tort claims, which would remain firmly attached to the old shareholders who had held stock as of the liability date. This is not to say, however, that old shareholders would be unable to shift their contingent personal liability. We would expect a specialized market in retroactive insurance to arise shortly after the adoption of an unlimited liability regime. Such a market would permit old shareholders to insure against the contingency that a tort judgment might ultimately exceed the net value of the firm.⁵³

A final issue associated with administering any timing rule that fixes shareholder liability prior to the bankruptcy of the firm is the conflict of interest that might arise

53. Retroactive liability insurance is presently an established, if relatively uncommon, form of insurance that can cover either suspected losses that are not yet reported, or losses that are known but for which payment is uncertain in timing and magnitude. Smith & Witt, An Economic Analysis of Retroactive Liability Insurance, 52 J. RISK & INS. 379, 380 (1985). Unlimited liability would create demand for such insurance among shareholders who prefer to shift their inchoate risk of liability during the lengthy legal proceedings that might ultimately result in an assessment against shareholders. Shareholders who wished to place a precise value on their liabilities might also purchase retroactive insurance. One reason to establish a fixed liability date is to facilitate a market in such insurance.

between old shareholders who bear contingent liability for past torts and new shareholders who do not. For example, old shareholders might suffer under any such rule if new shareholders, who purchased their shares free of personal liability for already-filed claims, were to seize control of the firm and, by dissipating its assets, increase the expected burden of any tort judgment for old shareholders.⁵⁴ More subtly, old shareholders might also suffer if new shareholders were to derail settlement negotiations with tort victims, since only old shareholders would face the full costs of a liability judgment exceeding the value of the corporation. It follows that any practicable regime of unlimited liability must place a duty on management to avoid opportunism on the part of new shareholders. An obvious way to discharge such a duty would be to bond the assets available to satisfy a tort judgment—for example, by purchasing retroactive liability insurance for the firm shortly after the establishment of a liability date.⁵⁵

2. The Costs of Collection

A second inquiry bearing on the feasibility of unlimited liability is whether recovering from numerous public shareholders would be prohibitively costly even in the absence of opportunistic efforts to disperse share ownership. Very large collection costs

54. See Woodward, supra note 2, at 606.

55. Of course, retroactive insurance would only be practical where expected liability costs at the outset of legal proceedings were not themselves so large as to bankrupt the firm. The MGM hotel fire case provides the best-known example of retroactive liability insurance. See Smith & Witt, supra note 53, at 396-99. If management could not bond a tort judgment in advance, care would be required to assure that settlement negotiations were conducted exclusively from the standpoint of old shareholders who retained holdings in the company, since only these shareholders would bear the full costs of a failure to settle. Where new investors outnumbered old shareholders, safeguarding the interests of old shareholders could conceivably require the appointment of a special negotiating committee independent of management.

would make unlimited liability less attractive not only because they would be wasteful, but also because they would lower settlement values and hence reduce the deterrent effect of tort rules. We believe that collection costs are unlikely to be prohibitive in this sense.⁵⁶

One reason is that shareholders would rarely be forced into insolvency. Equity holdings today are already highly concentrated in the hands of wealthy institutions and individuals.⁵⁷ Beyond this, assessments against shareholders would seldom exceed the assets of even a modest investor. It seems unlikely that even a catastrophic liability judgment would impose costs exceeding a publicly-traded firm's value by more than, say, a multiple of five.⁵⁸ Thus, an unlucky small shareholder who had placed 5% of a \$100,000 portfolio in the stock of such a firm would stand to lose \$25,000, or 25% of her portfolio's value, in a worst case scenario. A large institution with 0.2% of its assets invested in the same stock would lose 1% of its asset value. Although such losses would be serious, they would hardly be beyond the pale of ordinary market fluctuations.

Given that shareholders would be able to pay, the mechanics of collection need

56. Leebron assumes that these costs would be extremely high, and apparently it is principally this assumption that leads him to recommend retention of limited liability for publicly-traded firms. He asserts, without further explanation, that

[t]he transaction costs of collecting the pro-rata shares would in almost every case be so high that it would not be worth it. The rule [of unlimited liability distributed pro rata among shareholders] would create additional uncertainty, but in view of the transaction costs the market would simply heavily discount the likelihood that additional assessments would be made.

D. Leebron, supra note 1, at 39.

57. For example, the Columbia Institutional Investor Project estimates that institutional investors now hold 45% of total U.S. equities and 48.1% of the equity in the 1,000 largest U.S. corporations. C. Brancato, *The Pivotal Role of Institutional Investors in Capital Markets* 19-20 (1990) (Columbia Law School mimeo) (paper presented at the Salomon Brothers Center and Rutgers Center's Conference on the Fiduciary Responsibilities of Institutional Investors).

58. See infra Part V.A concerning the principles likely to apply in determining the size of tort judgments against corporations and their shareholders under unlimited liability.

not be excessively costly. A court could clearly administer the collection effort: bankruptcy trustees already collect accounts receivable from hundreds or thousands of debtors of bankrupt firms. Since share ownership on the liability dates would presumably be the chief legal issue in most collection efforts, few shareholders could successfully contest their assessments.⁵⁹ Wealthy individuals and institutions, who would be pursued in any event, would have little to gain from litigating separately to contest their assessments because they would be pursued in any event. Moreover, even small shareholders might be induced to cooperate simply by adding collection costs to the assessment bill of shareholders who unsuccessfully sought to contest their assessments.⁶⁰

Another development that might be expected to reduce collection costs is the probable response of the insurance markets to an unlimited liability regime. In addition to offering retroactive liability insurance, as noted previously, insurers might offer portfolio insurance to individual shareholders to supplement the liability insurance carried by public corporations directly. Most likely, such coverage would be provided in standard packages for the small shareholder and, therefore, would reflect actual portfolio risks only loosely. However, we see no reason why unlimited coverage ought not be available to small shareholders at a price that is not prohibitive. Although coverage without limit would be unconventional by today's standards, demand might

59. It is, of course, difficult to predict in advance, and unwise to underestimate, the ingenuity of lawyers in discovering means of contesting liability. We expect that some of the most troublesome collection defenses would be jurisdictional ones, including disputes about choice of law issues. *See infra* Part V.D.

60. Thus, the court might notify all shareholders of their liability assessments and of their potential liability for collection costs if they refused to pay or choose to contest their assessments. Since share ownership on the liability date would be the only matter at issue, few shareholders could successfully contest their assessments and, therefore, few shareholders would be likely to try, given the prospect of paying collection costs if they failed.

exist among small investors who were risk averse or prone to misvalue the costs of low-probability catastrophes.⁶¹ In turn, insurers or even brokerage houses might be willing to supply such coverage because, like life insurance sold to airline passengers, it would be profitable.⁶²

Presumably the loading costs on portfolio insurance, were it available, would be high. Consequently, large and diversified shareholders would probably avoid it. Nevertheless, such insurance could greatly facilitate collection against small shareholders by mitigating losses from insolvency and by centralizing the collection effort against a handful of insurers rather than numerous shareholders. In this case, the remaining constraint on collection would be claims against uninsured shareholders that were too small to pursue vigorously.⁶³ But the collection effort would not need to reach every shareholder to serve its purpose. So long as it could succeed against most shareholders, including the largest shareholders, it would force public corporations to bear the bulk of their expected liability costs.

61. Some authors report that people typically overestimate the probability of low-probability events. See Zeckhauser & Viscusi, Risk Within Reason, SCI., 559, 560 (1990) (citing studies). In addition, other work suggests that individuals will often pay a premium, in expected utility terms, for the total elimination of risk. See, e.g., Viscusi, Magat & Huber, An Investigation of the Rationality of Consumer Valuations of Multiple Health Risks, 18 RAND J. ECON. 465 (1987). How far these results carry over to investment behavior in the market is uncertain.

62. Catastrophic tort judgments against public corporations are rare events. Moreover, insurance companies would be protected against large losses by insuring only the pro rata liability of small shareholders—a small fraction of the total excess liability of an unlucky corporation.

63. A bankruptcy trustee might simply assign such claims to a private collection agency at the prevailing market discount rate.

3. Priorities in Bankruptcy

A related issue is the rule of priority for tort and contract creditors in bankruptcy proceedings. Under the prevailing priority rule, tort creditors come behind secured contract creditors and participate pro rata with general contract creditors. Under a regime of unlimited shareholder liability, however, there are persuasive reasons to give all contract creditors priority over tort creditors as a default option, while letting the firm and its contract creditors freely bargain for a different set of priorities if they wish.⁶⁴ Such a rule would provide strong protection—stronger than under current law—for both contract creditors and tort creditors. Upon bankruptcy, contract creditors would be able to collect against all of the firm's assets under our proposed liability rule, without the risk of being forced to share in the firm's value with tort claimants.⁶⁵ But tort creditors, in turn, would also be better off, since they could proceed against shareholders when the firm's remaining assets were insufficient to satisfy their claims. If, however, the firm's contract creditors were actually better placed to bear tort risks than its shareholders—that is, were superior cost avoiders or insurers—the terms of lending to the firm could be adjusted to subordinate contract claims, in whole or in

64. If the rule of priority proposed here were adopted now and applied not only to future contract creditors but to existing ones as well, then it would provide a windfall gain to those existing creditors at the expense of the firm's shareholders. Consequently, it would be sensible to apply the rule only to contract credit extended after the date on which the new rule was adopted, leaving the priority of current contract creditors unaffected.

Other problems of retroactivity posed by unlimited liability are discussed, infra Part V.E.

65. For reasons we elaborate below, see infra Part V.B, we believe that limited liability should remain the background rule for contract creditors. Consequently, absent special agreements by the firm's shareholders to assume personal liability for contractual debts, the ability of contract creditors to collect will remain limited by the assets of the firm.

part, to tort claims in return for a corresponding premium on credit.⁶⁶

B. Costs Imposed by Unlimited Liability on the Securities Market

Even more than the purported difficulties of designing an administrative regime of unlimited liability for public corporations, the decisive objection to unlimited liability, in the view of many commentators, has always been the burden that unlimited liability

66. To be sure, our proposed priority rule might also be reversed—that is, tort creditors might be placed ahead of contract creditors as a default option—in the expectation that shareholders would then agree to personal liability for unsatisfied contractual obligations when this would be efficient. But a background rule that placed tort claimants first seems likely to be more costly than its opposite for two reasons. First, we expect that shareholders are likely to be better than contract creditors at monitoring or insuring tort risks. The firm's numerous small creditors will usually be ill-equipped to evaluate tort risks: although contract creditors, when deciding on the terms of credit they will offer a firm, can judge fairly easily the amount of a firm's assets net of other prior contract claims, they might have great difficulty evaluating likely tort claims. Similarly, contract creditors will generally have difficulty influencing management's policies, and they are unlikely to be better insurers than the firm's shareholders who, in large firms at least, can diversify their holdings. (In this latter respect, moreover, we note that it seems important to choose as a background priority rule the rule that would be best suited for publicly-traded corporations. It should generally be easier for small closely-held firms than for large firms to recontract with their creditors to change priorities.)

Second, contracting around a priority rule that awarded tort claims first priority would be more costly than opting out of a rule that placed contract creditors first. To permit opting out of a "tort-claims first" rule at all, the management of a public corporation would have to exercise authority to impose personal liability for contract debts on the firm's shareholders. Defining the scope of such authority could be difficult. For example, would management only be given authority to make the firm's shareholders personally liable for that portion of a firm's contractual debts that could not be satisfied because the firm's assets were used to satisfy tort claims—in effect switching to the priority rule we suggest here—or would it be given the broader authority to assume personal liability for all of the firm's contractual debts? Moreover, it is not clear how one would provide notice to shareholders when the firm had assumed such liability on their behalf, or how one would determine to which shareholders, or former shareholders, such excess liability applied. By contrast, contracting to alter the "contract-claim-first" rule that we propose would be free of such complications.

might impose on the cost of equity for public firms.⁶⁷ Thus the next step in comparing limited and unlimited liability is to assess this burden.

There is no doubt that unlimited liability, as we have described it, would increase the cost of equity. Indeed, the purpose of unlimited liability is to make share prices reflect tort costs. Yet the literature suggests that, beyond internalizing tort losses, unlimited liability might generate additional costs by (1) impairing the market's capacity to diversify risk and to value shares, (2) altering the identities and investment strategies of shareholders, and (3) inducing market participants to monitor excessively.⁶⁸ The magnitude of these additional costs, however, turns chiefly on the choice between a joint and several or a pro rata liability rule. If shareholders faced joint and several personal liability for all corporate debts, whether arising in contract or tort, these costs might be very large. But, as Leebron persuasively argues, they should be much smaller if shareholder liability is restricted to tort judgments and governed by a pro rata rule.⁶⁹

67. This burden has apparently proved decisive not only for commentators but for courts as well. Professor Robert Thompson observes in his forthcoming empirical investigation of veil piercing cases: "The willingness [of courts] to sometimes hold shareholders of closely-held corporations liable, but to never hold shareholders in public corporations similarly liable, suggests that the positive role that limited liability plays in permitting the public market for shares is strong enough to overcome any of the reasons used by the courts to pierce." Thompson, Piercing the Corporate Veil: An Empirical Study, 76 CORNELL L. REV. __ (forthcoming 1991).

68. See, e.g., Easterbrook & Fischel, supra note 2, at 93-101; Halpern, Trebilcock & Turnbull, supra note 2, at 133-38.

69. D. Leebron, supra note 1, at 10-14. Virtually every commentator who addresses shareholder liability points to the cost advantages of a pro rata rule. See, e.g., Halpern, Trebilcock & Turnbull, supra note 1, at 137; Manne, Our Two Corporate Systems: Law and Economics, 53 VA. L. REV. 259, 262 (1967); Stone, supra note 1, at 74; Woodward, supra note 2, at 604; Note, supra note 1, at 1201. Leebron, however, provides by far the most systematic discussion. Our analysis parallels Leebron's except that we accord even less importance than he does to the costs of pro rata liability and are more sanguine about the prospects for recovering tort losses from shareholders.

1. Diversified Portfolios and Market Prices

The claim that unlimited liability might distort share prices or prevent shareholders from diversifying risk⁷⁰ is persuasive only under a joint and several liability rule. Under a pro rata rule, shares would have the same expected value for all shareholders.⁷¹ Although individual stocks would be riskier under such a rule, the additional risk would be no more difficult to diversify than the risk of tort liability is today. It would simply be larger in absolute terms, which would increase the number of stocks in an optimally diversified portfolio as well as the risk of taking a large position in a single firm. Given that a pro rata rule would leave shares with the same expected value for all investors and also permit full diversification of tort risks, it should not affect the efficiency of market pricing. Risk averse small investors with too little capital to diversify fully under an unlimited liability regime could shift their investments at very little cost to mutual funds or corporate debt. Moreover, the infrequency of catastrophic torts suggests that a pro rata rule would impose relatively small expected costs, even on undiversified investors, except when corporate activities are extremely risky—which is precisely when an unlimited liability regime is needed to prevent corporations from externalizing large costs.

It is sometimes argued that, regardless of how remote the probability of a substantial judgment against them, the mere prospect of unlimited personal liability

70. See, e.g., Easterbrook & Fischel, *supra* note 2, at 96-97.

71. To be sure, shares might have a marginally higher expected value for shareholders who would be rendered insolvent by a large tort judgment. However, this effect would be minor. As was argued in Part III.A.2, *supra*, even a catastrophic tort judgment against a large public firm would reduce very few shareholders to insolvency. Moreover, since such shareholders would presumably bear unusual risk by holding the shares in question, the higher expected value of the shares in their hands might not translate into a higher risk-adjusted value.

would cause many individual stockholders to abandon the equity markets entirely in favor of fixed-return securities, with the arguable consequence of impairing the liquidity of the markets. But such behavior seems as unlikely as it would be irrational. For example, under current law, every time a person drives an automobile she exposes herself to unlimited tort liability. Yet nearly all adults regularly drive automobiles, and casual empiricism suggests that few individuals even feel it worthwhile to purchase liability insurance that has exceptionally high coverage limits.⁷²

2. Shareholder Investment Strategies

More subtle critics of unlimited liability have argued that its adoption might adversely influence shareholder investment strategies on two other levels. First, a defective collection mechanism that favored small shareholders over large shareholders might discourage investment intermediaries such as mutual funds and lead wealthy shareholders to abandon risky industries.⁷³ Second, unlimited liability might encourage wealthy shareholders to "overdiversify" by eschewing large stock positions, hence reducing the frequency of control transactions and depriving all shareholders of the services of sophisticated monitors.

Under a pro rata rule, however, both of these concerns seem minor relative to the beneficial incentive effects of unlimited liability. If collection from dispersed shareholders is feasible, as we have argued, there would be little reason for wealthy

72. Moreover, as pointed out by Leebron, supra note 1, at 7, most individuals regularly expose themselves, in return for modest convenience or financial savings, to risks of severe injury or loss of life which, by destroying or impairing their human capital, threaten much more severe losses of utility than would result just from financial bankruptcy. This is true, for example, every time a person chooses to drive a car rather than take a train, or to ride in a car without using a seat belt.

73. See, e.g., id. at 39 (threat to mutual funds).

shareholders to prefer less risky firms or for small shareholders to withdraw from mutual funds. If anything, investing in a broadly diversified portfolio such as a mutual fund would become more attractive for small shareholders.⁷⁴ On the other hand, a pro rata rule clearly would increase a risk-averse investor's cost of accumulating a large holding in a risky corporation relative to the investor's cost of holding a diversified portfolio. On this dimension, unlimited liability poses a real question of the second best; at the margin, control blocks in risky firms would become less attractive and takeover premia would decline under unlimited liability, with a consequent decrease in shareholder monitoring of the management of risky firms.⁷⁵ This loss is arguably a real social cost. Nevertheless, it would probably be a small loss in comparison to the potential gains of inducing risky corporations to internalize their full expected tort

74. Under unlimited liability, investing in a diversified financial intermediary, such as a mutual fund, would protect investors from personal liability in fact but not in law. To deter wholesale evasion, an unlimited liability regime must permit liability to pass through intermediary entities to the ultimate beneficiaries of share ownership. Thus, participants in investment companies, no less than the shareholders of parent corporations and holding companies, would themselves face pro rata liability if the intermediary's assets failed to satisfy its assessment under the pro rata rule. In practice, however, institutional investors' ability to diversify tort risk would assure that investors in mutual funds would barely notice the effect of even a worst case liability judgment. See supra note 57 and accompanying text. The pass-through rule would have real bite only for thinly-capitalized parent corporations or holding companies.

For similar reasons, it would make little difference in practice whether or not liability were passed through to beneficiaries (or settlors) of diversified pension funds. The simplest approach would be to provide that liability will not pass through. To avoid an incentive for opportunistic use of employee stock ownership plans, however, and to assure that firms that have adopted such plans for legitimate reasons face appropriate incentives, there is an argument for passing liability through to their beneficiaries (or to the beneficiaries of any such undiversified investment or savings plan).

75. The risk-bearing costs imposed by unlimited liability on a control shareholder are partly offset by the ability to influence management's policies toward risk. See Halpern, Trebilcock & Turnbull, supra note 1, at 136. To the extent that unlimited liability might lead control shareholders to accept less risk than diversified shareholders would prefer, however, it would merely place tort risks on the same plane as other business risks.

liability. The cost would be restricted to unusually risky corporations and, even there, the magnitude of expected tort losses would presumably pale in most cases next to the prospects for ordinary business gain or loss associated with taking a control position in a public corporation.⁷⁶ Finally, as we discuss below,⁷⁷ when determining the magnitude of tort damages to be assessed against a firm and its shareholders under unlimited liability, courts might appropriately consider the greater risk aversion of controlling shareholders with concentrated stock holdings and temper damage awards accordingly.

3. Excessive Monitoring Costs

A final claim often made in defense of the status quo is that unlimited liability would generate excessive monitoring of both management and shareholders by all participants in public corporations. This claim would be plausible if each shareholder were liable for all corporate debts as they would be under a joint and several rule: in that case, the risks borne by each individual shareholder or creditor would depend in part on fluctuations in the aggregate wealth of all shareholders. All shareholders would then have a personal stake in knowing about the personal assets of other shareholders who entered or exited the firm.⁷⁸ In contrast to shareholders in closely-held firms,

76. Further, any adverse effect of unlimited liability on the aggregation of control blocks and on the acquisitions market might be remedied by facilitating control transactions in other ways, such as relaxing the barriers to share accumulations created by state anti-takeover statutes.

77. See *infra* Part V.A.

78. See, e.g., Carr & Mathewson, Unlimited Liability as a Barrier to Entry, 96 J. POL. ECON. 766, 769 (1988); Easterbrook & Fischel, supra note 2, at 95-96. In addition to assuming that unlimited liability must involve a joint and several liability rule, and thus impose substantial monitoring costs on shareholders, Carr and Mathewson confine their analysis to situations in which the firm deals only with voluntary (i.e., contractual)

moreover, shareholders in public firms could not hope to reallocate payouts among themselves to compensate for their disparate costs of risk-bearing.

Yet, this monitoring argument fails against a rule of pro rata liability for tort losses. Under such a rule, a shareholder's risk would depend only on the size of her own investment rather than on the wealth of other shareholders. Furthermore, contract creditors would not rely on the wealth of shareholders at all. Thus, the only effect of pro rata liability would be a marginal increase in shareholder incentives to monitor the enterprise's expected tort losses. Although this additional monitoring would not differ in kind from what shareholders already do, it would encourage managers to consider the full social costs of investment decisions.⁷⁹ Additional monitoring would cost more on the margin, but it would be no more duplicative or socially wasteful than the attention that shareholders already devote to all other matters affecting the value of the firm. Indeed, tort risks might even be less costly to monitor than other business risks. A developed industry of expert monitors—liability insurers—already sells assessments of liability risk, with or without the benefit of insurance. These same firms might easily collectivize the costs of evaluating liability risks for the public market.

creditors and does not impose damages on third party tort victims. (On the efficiency of limited liability for contract creditors, see infra Part V.B.) It is these factors that cause unlimited liability to be inefficient in the model they present. Based on this prediction of inefficiency, they interpret instances in which the law has historically imposed unlimited liability on firms in selected industries (in particular, Scottish banking and U.S. law firms) as involving barriers to entry established to benefit existing firms that either were able to obtain special exemption from unlimited liability or were inefficiently small. Gilson, Unlimited Liability and Law Firm Organization: Tax Factors and the Direction of Causation, J. POL. ECON. (forthcoming), throws some doubt on Carr and Mathewson's interpretation of the experience of U.S. law firms.

79. Management's incentives are discussed more fully, infra Part III.C.

C. Management's Incentives to Take Care

Given that unlimited liability is feasible for public firms, we must still ask whether it can significantly improve their incentives to take care. In particular, will the managers of publicly-traded firms be responsive to the incentives created by unlimited liability? Unlike the shareholder-managers of closely-held firms and the corporate parents of subsidiary firms, who make corporate policy directly, the disparate shareholders of most public corporations seldom exercise direct control over corporate policy. Why, then, should we expect the managers of public corporations to respond to liability imposed on shareholders?

One answer is that a variety of market mechanisms press corporate managers to be responsive to shareholder welfare as this is reflected in share prices. If shareholders faced full liability for potential tort losses, share prices would incorporate available information about the full extent of these possible losses. Managers, in turn, would then have as much incentive to consider the full expected social costs of corporate torts as they now have to weigh all other costs to the firm that shareholders presently bear as a matter of course. Moreover, shareholders who faced contingent liability would presumably demand—and managers as well as outside analysts would presumably supply—far more information about the riskiness of corporate policies, precisely because this information would have greater importance in valuing shares. This additional information, especially when it came from market sources outside the firm, would further enhance management's incentive to consider the tort risks associated with its policies.⁸⁰

80. Imagine, for example, that a corporation with \$2 billion in net assets commits a tort that results in damages of \$3 billion. If the shareholders are to be excused from liability for the \$1 billion in damages that exceed the corporation's assets on the grounds that they have insufficient control over the corporation to affect its behavior, by the same

Another answer is that even if corporate managers did not respond fully to shareholder liability costs, imposing unlimited liability on shareholders would still improve deterrence. If corporate managers undertake inefficiently risky projects and do not pass the full costs through to shareholders, the return paid to shareholders will exceed the social return on investment in the industry and too many risky firms will be formed. Put differently, unlimited liability will prevent the formation of too many publicly-traded firms with uncontrollable managers in risky industries.

Indeed, if limited liability for shareholders is justified on the grounds that shareholders have insufficient control over corporate managers to have a significant effect on the probability that the firm will commit a tort, it would seem to follow that there should be no tort liability for publicly-traded corporations at all—a position that, we believe, would gain little support.

On the other hand, the problem may not be that managers will respond too little

logic the shareholders should also be excused from having to bear the first \$2 billion in damages—which is to say that the corporation itself should not be liable for that first \$2 billion in damages, since paying those damages (and hence bankrupting the company) will reduce the value of the shareholders' stock from \$2 billion to nothing. And, by the same logic, the corporation should also be excused from liability for a tort that results in only \$200 million in damages, since payment of such a judgment will decrease the value of the shareholders' stock by an equal amount.

To be sure, if one believes that shareholders in publicly-traded firms have no control over the behavior of the managers of those firms, and also believes that the managers of those firms are typically empire-builders who want the firms to grow as fast as possible, then one might reasonably conclude that the managers' (and hence the firms') behavior will be affected by the prospect of tort judgments less than or equal to the firms' net assets, but that the prospect of excess liability judgments against the shareholders will have no effect on managerial behavior beyond that which can be obtained simply with the threat of bankruptcy. To subscribe to this view, however, is essentially to believe that publicly-traded business firms would behave no differently if they were organized as nonprofit corporations. Although this is not a completely indefensible position (for further discussion, see Hansmann, Ownership of the Firm, 4 J. L. ECON. & ORG. 267, 283-4, 300-01 (1988)), we believe that the weight of evidence, and certainly of scholarly opinion, is strongly against it.

to expected liability costs but, conversely, that they will respond too much. As we have previously argued, shareholders can diversify tort risks under a regime of unlimited pro rata liability and, therefore, will prefer that public firms continue to invest as risk-neutral actors. Yet, even today, large public corporations insure heavily against tort liability under the existing limited liability regime.⁸¹ Although there are other possible explanations,⁸² such insurance may be evidence of managerial risk aversion.

Managers cannot diversify their investment of firm-specific human capital in the corporation. Consequently, if managers believe that bankruptcy of the firm may cost them their jobs, they may manage the firm in a risk-averse manner to reduce the threat of bankruptcy. And if managers are risk averse in this fashion, then it might be feared that they would be over-deterred by a shift to a regime of unlimited liability.

Yet a shift to unlimited liability might not increase appreciably the probability that a firm will go bankrupt; rather, its principal effect would be to increase the size of the loss that shareholders could bear in case a bankruptcy occurs.⁸³ Thus, risk-averse

81. Existing liability insurance coverage falls well short of protecting all net assets of the types of large public corporations in which managerial autonomy is most pronounced. Managers do not—and in today's insurance market, cannot—insure against catastrophic liability that might bankrupt a \$1 billion corporation. The maximum liability coverage that any corporation can purchase in today's market lies between \$400 and \$500 million. Most Fortune 500 firms purchase less than \$200 million in liability coverage. Interview with Robert Hager, Director of National Account Underwriting, Aetna Insurance Company (Apr. 27, 1990). Instead, managers of large corporations typically insure those firms against more modest losses that, although well below the firms' net value, might nonetheless deplete their working capital or seriously impair their earnings.

82. For an overview of hypotheses that are consistent with shareholder wealth maximization, see Mayers & Smith, On the Corporate Demand for Insurance: Evidence from the Reinsurance Market, 63 J. BUS. 19 (1990); Mayers & Smith, On the Corporate Demand for Insurance, 55 J. BUS. 289 (1982).

83. A shift to unlimited liability would have no effect on the probability of bankruptcy were it not for the incentive that limited liability gives plaintiffs to settle for a judgment that does not bankrupt the firm even when their provable damages exceed the firm's assets. See *supra* notes 26 and 43. Because of their latter incentive, claims that would be settled short of bankruptcy under limited liability may lead the firm to bankruptcy under unlimited

managers who worry that bankruptcy might cost them their jobs might not find their incentives strongly affected by unlimited liability. Under an unlimited liability regime, managers would still enjoy limited liability of a sort: even if bankruptcy threatened their jobs, shareholder losses that exceeded the firm's bankruptcy point would not impose additional costs on them.⁸⁴

IV. INCENTIVES TO EVADE LIABILITY

Thus far we have addressed the merits of unlimited liability chiefly in terms of the likely costs that it would impose on the existing owners of firms, largely because these costs are at the heart of the conventional critique of unlimited liability. Yet the analysis must proceed another step because the most difficult points in a comparison of limited and unlimited liability do not concern the effects of limited liability on the private costs of existing shareholders but rather the the social costs created by shareholder attempts to evade unlimited liability.

In discussing single-shareholder firms, we noted that regardless of the rule of shareholder liability, tort liability in general is always subject to evasion by judgment-proof individuals. Whatever the rule for corporations, individuals always have the

liability may lead the firm to bankruptcy under unlimited liability.

84. Moreover, there is no particular reason to believe that bankruptcy induced by large tort judgments need by itself threaten a manager's job. The fact that a firm is financially bankrupt does not imply that it is not worth continuing as a going concern, or even that its current management should be replaced. This is true even if bankruptcy not only costs the firm's current shareholders their equity investment in the firm but also imposes upon them substantial personal liability.

Of course, to the extent that managers are given, for other incentive reasons, an undiversified investment in their company's stock, in addition to their investment in firm-specific human capital, those managers will have an enhanced incentive to overinvest in safety under an unlimited liability regime. Managers' investment in human capital, however, is generally said to be the chief source of managerial risk aversion.

advantage of the limits on personal liability available through individual bankruptcy. This option preserves strategies for evading tort liability under a regime of unlimited shareholder liability just as it does under the existing regime of limited liability. Unlimited liability would bar today's low-cost strategies of evasion by self-incorporation or the partitioning of assets into corporate subsidiaries. It would leave open, however, the three liability evasion strategies that are presently available for unincorporated individuals or partnerships: (1) hiding personal assets or shifting shares; (2) shifting from equity to debt financing; and (3) disaggregating industry. All three of these evasion strategies operate by placing equity interests in the hands of judgment-proof individuals. To assess their potential significance, we consider them separately.

A. Hiding Assets and Shifting Shares

As we have previously observed, unlimited liability would increase the incentives for individual shareholders to minimize holdings of personal assets exposed to tort judgments. Tactics of this sort could rely on shifting assets by, for example, passing title to other family members, spending more on present consumption, or increasing the amount of wealth held in pension funds. Alternatively, such tactics could attempt to insulate assets by shifting share ownership—for example, by donating all stock in a risky corporation to a trust for the benefit of one's children. Tactics of either sort would blunt the ability of unlimited liability to increase care-taking and could also lead to distorted patterns of consumption and investment.

The potential importance of these problems is an empirical question that is difficult to answer a priori. But there is reason to believe that they would not be serious. They should have little effect on shareholders in publicly-traded firms, who generally have too small a fraction of their assets invested in any single firm to have an

incentive to rearrange their personal finances in response to the threat of excess tort liability. Rather, the problems would arise primarily in the context of closely-held firms with only one or a few shareholders. And even in those firms, two considerations would limit the extent to which shareholders would shield their personal assets from liability. First, shareholders must frequently assume personal liability for the corporation's contractual debts in order to facilitate the firm's access to credit, and for this reason do not have an incentive to minimize personal assets that are accessible to creditors. Such assets would presumably also be available to tort creditors under an unlimited liability regime. Since for most firms the risks associated with contractual liability are likely to be more significant than the risks associated with tort liability, the addition of shareholder liability for corporate torts should have little effect on the disposition of shareholders' personal assets. Second, even where unlimited liability in tort would otherwise create strong incentives for shareholders to rearrange personal assets to shield them from liability, they can succeed only within limits. The law already constrains the most opportunistic tactics of this sort,⁸⁵ and those constraints could be further tightened if necessary.⁸⁶

85. For example, most states place limits on the value of a personal residence that is exempt from creditors. Also, efforts to shield assets from creditors after a tort has been committed, or perhaps even at the point at which it becomes clear that the risks of causing tort damages are large, are likely to be frustrated by fraudulent conveyance doctrine.

86. To take just one example, pension fund assets are currently shielded from tort judgments (and criminal fines) levied on the beneficiary. This result is not mandated by statute, but rather has been devised by the courts. *Guidry v. Sheet Metal Workers' Nat'l Pension Fund*, 110 S. Ct. 680 (1990); I.R.C. § 401(a)(13) (1990); Employee Retirement Income Security Act of 1974, § 203(a), 29 U.S.C. § 1053(a) (Supp. 1990). Yet it is a dubious policy to make an individual sacrifice only the assets he has accumulated for present consumption, and not those he has accumulated for future consumption, when he commits a tort resulting in substantial damages. If pension funds were to be used opportunistically to shield large amounts of assets from tort liability under an unlimited liability regime, presumably this policy could be reversed by statute or by judicial decision to make some or all pension assets available to satisfy tort claims.

B. Debt as an Evasion Strategy

As Easterbrook and Fischel remind us,⁸⁷ not only shareholders but also debtholders enjoy limited liability under existing law. Since there are persuasive reasons not to extend mandatory unlimited liability to bonafide corporate debt,⁸⁸ heavy reliance on debt financing opens a second strategy for evading tort judgments under a regime of unlimited liability. Although a wealthy shareholder could not seek to protect her assets directly through debt financing, as she can now do under limited liability,⁸⁹ she might nonetheless attempt to evade liability by selling the company to a low-asset shareholder who could finance his acquisition with debt secured by the company's assets. Alternatively, and perhaps more simply, a low-asset shareholder might raise debt financing to capitalize a start-up venture in a risky line of business. These strategies create a "high-roller problem"—a term we use to emphasize the central role of the low-asset shareholders ("high rollers") who undertake to hold the risky equity.⁹⁰ If

87. See Easterbrook & Fischel, supra note 2, at 90.

88. See infra Part V.B.

89. See supra notes 10-11 and accompanying text (discussing debt as an aggravating factor under limited liability).

90. There is evidence that oil refiners have begun turning to the high roller strategy even under the existing limited liability regime:

Already at least one international oil company has been parking the title to some of its oil in transit with a willing outside party, a company controlled by fugitive oil trader Marc Rich in Switzerland. . . .

Many people familiar with the petroleum business expect "pass-the-cargo" schemes, such as the one involving Mr. Rich, to proliferate. . . . In fact, Texas oilman and trader Kyle McAlister says he's already canvassing U.S. refiners. For at least 20 cents a barrel, Mr. McAlister says, he is prepared to run the liability risk for them, buying their oil and holding possession of it until it reaches their refineries. To do that and keep his own assets out of reach of U.S. courts, he'd pack up his wife and three children, liquidate his U.S. holdings and move to Switzerland.

Sullivan, Oil Firms, Shippers Seek to Circumvent Laws Setting No Liability Limit for Spills,

transferring companies to high rollers were a common reaction to the imposition of unlimited liability, it could have several unfortunate effects. First, hazardous activities might still be undertaken with inadequate precautions and insurance. Second, the high rollers who came to own, and thus to control, small hazardous firms might not be the individuals who are most skilled in managing them, thus resulting in losses of productive efficiency. Third, high rollers would be constrained to maintain distorted and highly-leveraged capital structures, which would impose further efficiency losses in the form of the agency costs of risky debt. And fourth, since the capital markets would no longer serve to diversify the risk of the hazardous activities in question, investors in those activities would bear much more risk than they do at present. The first of these problems would presumably be substantially less severe than it is under limited liability, since all the liability evasion strategies available under unlimited liability are available under limited liability as well, while unlimited liability frustrates a variety of low-cost evasion strategies that limited liability facilitates, such as sub incorporating or increasing leverage without otherwise changing ownership of a firm's equity. But the other three problems would presumably be much more pronounced under unlimited liability than under limited liability, and one might worry that their costs would more than outweigh any improvements in care-taking and insurance that unlimited liability would induce.

There is good reason to believe that the high-roller problem would be limited in most industries and, to the extent that it was not, could be mitigated relatively easily with secondary legal controls. For the problem to be widespread, there must be a large number of high rollers. These individuals must share several characteristics: (1) they must be wealthy enough to provide, by themselves or with a small number of others,

Wall St. J. July 26, 1990, at B1, col. 3.

sufficient equity to induce lenders to finance a firm capable of undertaking a hazardous business of the type in question—say, ownership and operation of a chemical plant; (2) they must not be so wealthy, however, that they have substantial personal assets beyond those that they invest in the firm (in particular, they must lack sufficient assets to be able to come close to covering potential tort damages); (3) they must not be very risk averse (that is, they must be willing to incur a substantial chance of personal bankruptcy if tort damages should prove large); (4) they must have sufficient skill and knowledge to assure that the firm they own is managed with a reasonable degree of competence, either by themselves or by managers that they select and oversee; and finally, (5) they must not find it excessively distasteful to assume personal ownership of, and invest most of their assets in, an enterprise that is intentionally structured to externalize tort risks by exploiting their personal financial status.

The critical question is whether there are enough individuals with these characteristics to take possession of any significant fraction of most industries, or even of most unusually hazardous industries. We strongly doubt that there are, particularly because many companies undertaking hazardous activities, such as manufacturing of chemicals and pharmaceuticals, commonly require extensive investments in firm-specific capital—that is, in specialized plant and equipment that cannot be redeployed elsewhere without a substantial loss in value. Since such investments provide poor collateral, debt financing would be costly or impossible to obtain, which means that a would-be high-rolling owner would have to provide a substantial fraction of the necessary capital herself. The potential supply of such very wealthy high rollers is likely to be particularly limited.

To be sure, assets are readily deployable in some hazardous industries and the potential supply of high rollers might be broader in these industries. One example is

transport, such as shipping oil by tanker or toxic chemicals by truck; hotels are another.⁹¹ Yet, precisely because these industries employ standard assets, they are also easy targets for detailed safety regulation and in fact are often heavily regulated even under the existing limited liability regime.⁹² Thus, the industries in which the high-roller problem is potentially most severe are those in which it is easiest to find substitutes for tort law as a check on excessive risk-taking.

Finally, under a regime of unlimited liability, courts would retain the option of recharacterizing, as constructive equity, ostensible debt financing that served as an obvious liability shield, thus making the debtholders as well as the shareholders bear unlimited liability for corporate torts.⁹³ To employ this tactic often would create an awkward jurisprudence that might undermine the legitimate uses of corporate debt. But truly opportunistic uses of debt financing to avoid tort liability are likely to be highly conspicuous and easily isolated by the courts. Moreover, the mere threat that debt could be recharacterized in extreme cases might create sufficient legal risk to deter lenders from financing most would-be high rollers.

C. Disaggregation of Industry as an Evasion Strategy

The preceding discussion has focused on the possibility of restructuring the financing of individual firms by increasing leverage and passing equity ownership to

91. See *supra* note 35 (highly lethal fire in hotel that was intentionally thinly capitalized and uninsured).

92. Cf. Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357 (1984) (discussing circumstances in which ex ante regulation of safety is likely to be efficient).

93. See, e.g., *supra* note 40 (discussing related recharacterizations of debt in tax law). A less drastic tactic would be simply to employ the doctrine of equitable subordination to subordinate the debt to the claims of tort victims.

high rollers. A more serious variant of this problem would arise if, in response to unlimited liability, large companies were to sell off their hazardous activities piecemeal to small firms that were separately owned by different high rollers. Thus, a large oil company, rather than continuing to ship its oil in tankers that it owns and operates through subsidiary corporations, might sell each of its tankers to a separate individual who would then contract with the company to ship its oil.⁹⁴ Similarly, small firms with only one or a few high-rolling shareholders might replace large drug companies in the development and initial marketing of pharmaceuticals; these small firms would then sell a product line to a large company for mass production and marketing only when it proved safe. Such a disaggregation strategy might impose significant efficiency costs through lost economies of scale or scope. These costs could arise, for example, if a large oil company that sold its fleet of 100 tankers were a more efficient manager of those ships than 100 individual high rollers could be.

Once again, however, there are several reasons to believe that evasion through disaggregation would not constitute a serious threat. First, only a small number of companies are likely to perceive profitable opportunities for inefficient disaggregation. As we have previously argued, the supply of high rollers with just the right characteristics to own and operate, say, individual oil tankers or pharmaceutical plants is likely to be limited. In addition, the demand for high rollers is also likely to be limited. An incentive for disaggregation in any given case would not arise under unlimited liability unless the resulting inefficiencies, including lost economies of scale or quality of management, were smaller than the private gains from avoiding potential tort liability. If they were not, a parent firm would choose to retain ownership of the risky asset in question rather than selling it. Thus, the range of cases in which the

94. See supra notes 4 and 90.

disaggregation strategy might be worthwhile should be relatively narrow.

Beyond this, the costs of inefficient disaggregation might also be offset by eliminating the inefficient incentives to integrate hazardous activities that persist under the existing limited liability regime. Limited liability creates an incentive for inefficiently high levels of corporate leverage because, under this regime, a firm's equity need not be held by a high roller for the firm to employ debt financing to evade tort liability. As noted above, an individually-owned firm with substantial firm-specific assets will have difficulty obtaining debt financing. But if the same firm is a wholly-owned subsidiary of a larger corporation, debt financing will be much easier to obtain. A corporate parent can lend funds directly or, alternatively, it can either guarantee its subsidiary's debt to a third party or (to minimize the prospects that the debt will be subordinated) simply offer its reputation as a hostage for repayment of its subsidiary's debt. It is therefore possible that, for example, some pharmaceutical companies now retain subsidiaries solely to exploit debt financing as a device for externalizing tort costs, and not because of any operational efficiencies. If this strategy, in fact, currently contributes to integration in some industries, then any disaggregation resulting from a shift to unlimited liability would, at least in part, simply offset a contrary inefficiency.

Finally, even if unlimited liability might lead to some inefficient disaggregation, there are effective ways to limit disaggregation short of retaining limited liability. As we have already suggested, the most opportunistic, and hence costly, instances of disaggregation to avoid tort liability are likely to be obvious and concentrated in particular industries. For example, it would be quite conspicuous if, following the adoption of unlimited liability, ownership of large numbers of oil tankers were transferred to individuals with modest assets who financed their single-ship companies

with substantial amounts of debt.⁹⁵ And in such cases it may well be possible to adopt measures that will make disaggregation unprofitable. We have already noted the potential for direct regulation of safety in many such industries. Further, in the case of the oil tankers, for instance, making companies that produce, own, or intend to receive the oil jointly and severally liable for spills may well remove any incentive for inefficient disaggregation. Or perhaps an even more effective and administrable measure would be to require that all oil tankers operating in the jurisdiction's territorial waters to carry a substantial amount of liability insurance against oil spills.⁹⁶

D. Evaluating Evasion Strategies

Taken together, the three evasion strategies of hiding assets, debt financing, and

95. We do not mean to suggest by this example that we are confident that oil tankers are most efficiently owned and operated by large oil companies rather than by individuals. Conceivably, ownership by small firms or individuals is generally more efficient, and large oil companies may often own such ships simply as a result of managerial empire-building or in response to the incentives, described in the preceding paragraph, that limited liability creates for inefficient integration. In that case, disaggregation induced by unlimited liability may not decrease efficiency.

Although disaggregation might result in insufficient incentives for loss avoidance, the same problem already exists under the current regime, which allows for opportunistic formation of thinly capitalized corporate subsidiaries with limited liability.

96. We shall argue below, see infra Part VII.A, that mandatory insurance is not in general a workable solution to the problems created by limited liability. But as a modest aid to unlimited liability, mandatory insurance could be quite effective. It would not be necessary to establish with any particular accuracy the appropriate amount of insurance for a ship to carry. Rather, it would suffice simply to require enough insurance so that, when the cost of that insurance is combined with the operating inefficiencies of disaggregated ownership, it does not pay to have individuals, rather than larger and better capitalized firms, own the ships. That is, one would not rely on the insurance requirement to solve the externality problem itself, but only to discourage inefficient disaggregation. Nor would it be necessary to impose such mandatory insurance requirements on all industries; only those industries in which there are conspicuous and otherwise uncontrollable incentives to disaggregate ownership inefficiently need such a requirement.

disaggregating industry clearly constitute a potentially serious problem for a regime of unlimited liability. Each of these strategies would not only blunt safety incentives under an unlimited liability regime but would also generate other efficiency costs, ranging from the reallocation of individual assets to the loss of integration gains. Yet the magnitude of these effects and the ease with which they might be countered is an empirical question. As we have argued, there is good reason to believe that they would not overshadow the efficiency gains that unlimited shareholder liability would introduce, given the seeming implausibility of a wholesale shift of assets into the hands of high rollers who happen to have just the right assets, preferences, and access to credit necessary to become repositories of risky equity. Recall, moreover, that the relevant comparison in evaluating evasion strategies is not between limited liability without evasion and unlimited liability with it. Large-scale evasion of tort liability already occurs under limited liability,⁹⁷ and at least one popular evasion strategy to date—compartmentalizing a company's risky assets into separate subsidiaries—would become much more difficult under unlimited liability. Indeed, it is not even certain, as an empirical matter, that total evasion costs would increase following a shift to unlimited liability. Only the nature of the comparison is clear: evasion could well be more costly to the public in the instances where it occurs under an unlimited liability regime, but successful evasion might well occur much more frequently under the existing limited liability regime because low-cost evasion strategies such as subsidiarization are so readily available.⁹⁸

97. See *supra* Part I (evidence of widespread liability evasion today).

98. Although we shall not discuss limited partnerships in depth, we note that if unlimited liability in tort is appropriate for corporate shareholders, then it is presumably also appropriate for limited partners and should be extended to them as well. Indeed, adoption of unlimited liability in tort for corporations but not for limited partnerships would in many cases simply encourage the continuing evasion of liability through conversion of corporations into limited partnerships with low-asset general partners.

V. SHAREHOLDER LIABILITY AS A PROBLEM OF TORT LAW

In the past, limited liability has generally been seen as a problem of corporate law. The efficiency of the capital markets, it was argued, would be seriously damaged if shareholders were exposed to personal liability for corporate torts. Consequently, the formal boundaries of the corporation that have been established for purposes of contractual rights⁹⁹ should also be respected in tort. One of the principal points we wish to make is that this is not so. As we have argued above, the capital markets, and in particular the stock market, would continue to function efficiently with unlimited shareholder liability. Rather, shareholder liability should be seen as a standard problem of tort law. Viewed this way, the right question is simply: When are a corporation's shareholders cheaper cost avoiders and/or cheaper insurers than the persons who may be injured by the corporation's activities?

A. Appropriate Tort Rules for Shareholders

It is sometimes argued that, even if unlimited liability could be imposed on corporate shareholders without seriously interfering with the capital markets, the broad potential scope of enterprise liability under prevailing liability rules and damage measures constitutes an independent reason for favoring limited liability. For example, one might be concerned that unlimited liability would thrust upon shareholders the risk of very large losses associated with very low-probability accidents—the type of losses that insurance will not cover and that shareholders will find hard to assess, or to avoid by monitoring management. More graphically, the concept of unlimited liability seems

99. See infra the discussion of contract liability in Part V.B.

to engender in the minds of many the image of small passive shareholders with modest means being suddenly and unexpectedly thrown into personal bankruptcy when the few shares of publicly-traded stock they own bring upon them massive personal liability for some corporate tort. In the worst nightmare scenarios of this sort, a well-managed corporation and its shareholders are held strictly liable for billions of dollars in compensatory and punitive damages for product-related injuries that the firm could not possibly have foreseen, that were caused many years ago, and that could better have been avoided by care-taking on the part of consumers.

But such results need not follow from abolishing limited liability. With unlimited liability, it will remain to the courts to determine which costs are efficiently and equitably borne by a corporation and its shareholders and which are not. Some costs associated with corporate activity should be left on victims or their insurers rather than borne by corporations or, particularly, their shareholders.¹⁰⁰ But there is no reason to believe that this will always be the case, as the prevailing limited liability regime necessarily presumes. Shareholders who benefit, for example, from intentional dumping of toxic wastes, from marketing hazardous products without warnings, or from exposing employees without their knowledge and consent to working conditions known by the firm to pose substantial health risks, should not be able to avoid the resulting costs simply by limiting the capitalization of their firm.

In this respect, the courts should appropriately consider the structure of particular corporate defendants in determining the extent of their tort liability under an unlimited liability regime. For example, when the defendant corporation is the wholly-owned subsidiary of a large parent corporation, the prospect that a judgment might exceed the corporation's net assets and thus spill over onto its parent shareholder

100. For example, as Schwartz has cogently argued, risks that are "remote" (in his parlance) should often be left to lie where they fall. Schwartz, supra note 1.

should generally not, in itself, affect the size of the judgment. When the firm's shareholders are individuals, however, the prospect of shareholder liability might sometimes be a reason to temper the amount of the damages assessed. In some cases, the transaction costs occasioned by individual shareholder liability may not justify whatever added deterrence or insurance benefits come from assessing damages that exceed the firm's assets. Moreover, among firms with individual shareholders, it may often be worthwhile to distinguish between small closely-held firms and publicly-held firms. For example, corporate liability that is justified on the grounds of risk-bearing (insurance) is more sensibly imposed on individual shareholders in publicly-held firms than on shareholders in privately-held firms, since public shareholders presumably have better-diversified investments. Similarly, smaller judgments against closely-held firms will often be justified for purposes of deterrence, since liability is likely to deter risk averse shareholders with concentrated stockholdings more readily than diversified shareholders in public corporations.

Such discrimination among different types of firms and shareholders need not require self-conscious development of a sophisticated jurisprudence or elaborate instruction of juries. Indeed, distinctions of these types would probably be made by judges and juries in any event, simply on the basis of their untutored sense of what is "fair."

To be sure, whether courts are capable of distinguishing among corporate defendants is irrelevant if one believes that courts are inclined to create excessively broad liability for corporate actors in general—for example, in the realm of products liability¹⁰¹—and that limited liability therefore serves to restrain judicial

101. See, e.g., R. EPSTEIN, *MODERN PRODUCTS LIABILITY LAW* (1980); Priest, *Products Liability Law and the Accident Rate*, in *LIABILITY: PERSPECTIVES AND POLICY* 184 (R. Litan & C. Winston eds. 1988). Cf. Viscusi, *supra* note 23, at 176-77 (doctrinal change has led to product liability crisis).

overreaching. In this case, one might fear that unlimited liability would simply lead courts to search for deeper pockets for compensating victims, and thus encourage judges to be even more irresponsible than in the past in making unjustifiably large damage awards.

Yet this argument is not compelling. There may be good reasons for retreating somewhat from recent expansions of enterprise liability, although this remains a debatable issue.¹⁰² But, even so, limited liability is an extremely crude check on the courts; it restricts liability excessively in some cases and not enough in others, and it motivates shareholders and corporations to behave opportunistically. If the scope of enterprise liability needs to be narrowed, the appropriate reform is not to invite firms to opt out of the tort system by exploiting limited liability. Rather, one should craft liability rules and damage measures that impose costs upon corporations and their shareholders only to the extent that these actors appear to be the cheapest cost avoiders and/or insurers. Indeed, there is already evidence that the courts have recently, on their own, begun taking a more conservative approach to enterprise liability.¹⁰³

Moreover, precisely the opposite argument seems equally plausible: with unlimited liability, courts would be forced to consider the appropriate scope of enterprise liability more thoughtfully, in the full awareness that limited liability would not automatically constrain any tendency toward excessive liability. Courts could not award generous damages under the illusion that only corporations, and not individuals, will bear the resulting costs. Rather, they could not escape the fact that tort liability large enough to bankrupt a publicly-held corporation would also impose direct costs upon thousands of individual shareholders.

102. See, e.g., Croley & Hanson, What Liability Crisis: An Alternative Explanation for Recent Events in Products Liability, 8 YALE J. ON REG. 1 (1990).

103. See Henderson & Eisenberg, The Quiet Revolution in Products Liability: An Empirical Study of Legal Change, 37 UCLA L. REV. 479 (1990).

We do not want to exaggerate our faith in tort law as a means of controlling behavior. It is a very rough and costly mechanism. But it usefully discourages the most severe forms of opportunistic cost externalization. Moreover, if any class of actors is likely to respond rationally to the deterrence incentives created by tort law, it is corporations and their shareholders. Similarly, if tort law is to have any role in shifting risks to low-cost insurers, then using it to shift risks to the equity market makes sense. Consequently, allowing corporations to avoid tort liability through the simple device of limited liability seems, at the very least, highly suspect.

B. Limited Liability for Contract Creditors

The case against limited liability in tort does not extend to contract. There are compelling reasons for retaining limited liability as the background rule for contract creditors. Limited liability for contractual debts simply permits the owners and creditors of a firm to allocate the risks of the enterprise between themselves in whatever fashion is most efficient. In setting the firm's net capitalization, the firm's owners determine how much risk they will bear. And, by looking at the corporation's net assets, individuals who contract with the firm can determine relatively easily just how much risk they will bear in extending credit to the firm; they can then adjust their credit terms to compensate for any risks that limited liability will impose on them.

If it were generally efficient for shareholders to pledge all of their assets as security for credit extended to the firm, then limited liability would not be a sensible background rule for corporate contracting. But this is not the case. In small closely-held firms, the firm's creditors may often be more efficient risk-bearers than the firm's individual owners. And in large firms, it may often make sense to divide the firm into

subunits for the sake of pledging assets as security to contract creditors.¹⁰⁴ This subdivision helps creditors assess the riskiness of the underlying business and the amount of assets available to them as security: They can confine their investigation to the particular subsidiary that they already understand without analyzing the assets and potential liabilities of the firm's other lines of business. Moreover, it is common practice for a corporation's shareholders—whether individuals in the case of a closely-held firm, or a parent corporation in the case of a wholly-owned subsidiary—to waive limited liability toward contract creditors in cases where this is most efficient (that is, where waiver will reduce the total costs of contracting).¹⁰⁵ Limited liability toward contract creditors therefore makes sense even for corporations that have a single shareholder, whether that shareholder is an individual or another corporation.¹⁰⁶

The shareholders of a corporation that falls into financial difficulty may, of course, seek to drain the corporation's assets before contract creditors can levy on them. But substantial creditors can contract for specific limitations on a corporation's ability to undertake such distributions, and smaller creditors are protected from the worst forms of such opportunism by veil-piercing doctrine, fraudulent conveyance law, and the bankruptcy doctrine of equitable subordination. Moreover, a corporation's shareholders have a strong incentive to bond themselves in ways that will prevent them from undertaking opportunistic distributions, since such bonding will reduce the corporation's cost of credit.

Tort victims, unlike contract creditors, cannot assess the potential credit-

104. See Posner, *The Rights of Creditors of Affiliated Corporations*, 43 U. CHI. L. REV. 499 (1976).

105. See, e.g., DEL. GEN. CORP. L. §102(b)(6) (authorizing waiver of limited liability).

106. It is for this reason that it makes sense to permit the formation of a corporation with a single shareholder, something that might otherwise seem pointless and that the law was in fact somewhat slow in recognizing.

worthiness of a corporation before they are injured, much less insist on compensation for bearing the risk that they will suffer harms that the corporation's assets are insufficient to cover. Consequently, limited liability in tort permits the firm's owners to determine unilaterally how much of their property will be exposed to potential tort claims, thereby inviting opportunism and inefficiency. In short, for involuntary creditors, tort law rather than contract law must determine the appropriate allocation of costs among actors, and limited liability prevents tort law from fulfilling this function.

Indeed, limited liability in tort may actually interfere with the legitimate uses of limited liability in contract. For example, as just suggested, a large corporation may have an incentive to subdivide its activities into a given partitioning of wholly-owned corporate subsidiaries in order to pledge its assets to contract creditors. But limited liability in tort may well provide an incentive to subdivide the corporation into a very different set of subsidiaries that is less efficient in reducing the costs of credit. In particular, the subdivision chosen for purposes of externalizing tort liability is likely to involve a larger number of subsidiaries and perhaps also a different partitioning of functions among them, as the firm tries to segregate its riskiest activities into separate corporations.

C. Which Creditors Are Involuntary?

Because limited liability should be retained as the background rule for contract creditors, it would be necessary, if unlimited liability were adopted for tort claims, to distinguish clearly between claims against a corporation that arise in tort and claims that arise in contract. The obvious difficulties lie in areas, such as products liability and workplace injuries, where, although the victim had a contractual relationship with the firm prior to the injury, the courts have been inclined to classify the injury as a tort.

These difficulties do not, however, seem serious. The critical question is whether the victim was able, prior to the injury, to assess the risks she took in dealing with the firm and to decline to deal if those risks seemed excessive in comparison with the net advantages she otherwise derived from the transaction. In other words, the question is whether the victim can reasonably be understood to have contracted with the firm in substantial awareness of the risks of injury involved.¹⁰⁷ If so, then the liability should be considered contractual, and limited liability should be considered a background term of the contract, to be respected unless specifically waived. If not, the victim should be considered an involuntary creditor and the corporation's shareholders should not be permitted to invoke limited liability.

The courts must already draw the line between tort and contract in other contexts, such as the enforceability of waivers of warranties. The criterion they apply in making this distinction, it appears, is roughly that just described. Consequently, for the purpose of determining when shareholders are subject to unlimited liability, it seems appropriate to follow existing judge-made doctrine as to what is a tort, and in general to rely on the courts to continue to draw the line between tort and contract in the future. There should be no need to develop an extensive new jurisprudence for this purpose.

D. Conflict of Laws

State corporation statutes are commonly silent, or at least ambiguous, as to

107. Of course, this question should not generally be asked of each individual victim, but rather for categories of victims.

whether shareholders have limited liability for corporate torts.¹⁰⁸ This is appropriate since, as we have argued, shareholder liability for corporate torts should be viewed as a question of tort law rather than corporate law. In general, the rules of tort law applied to a given accident should be those of the jurisdiction in which the tort occurred rather than the jurisdiction in which the defendant firm was incorporated. The contrary choice of law rule would give rise to an adverse selection problem (a "race to the bottom") in which states would have an incentive to adopt inefficient corporation statutes that limit the tort liability of shareholders as much as possible and hence benefit shareholders (and the state, through the corporation franchise fees it could charge) at the expense of out-of-state tort victims.¹⁰⁹

It follows that any state should be able to adopt unlimited shareholder liability for corporate torts, either by legislation or by judicial decision, for application to any tort claim to which the state's tort law applies, regardless of the state of incorporation of the corporate defendant. For example, Illinois should be able to adopt unlimited liability and apply it to a Massachusetts shareholder of a Delaware corporation that commits a tort in Illinois without being concerned whether either Delaware or

108. See, e.g., DEL. GEN. CORP. L. §102(b)(6) (providing only that shareholders shall not be personally liable for a corporation's "debts"). The revised model act has an unfortunate provision stating that a shareholder is "not personally liable for the acts or debts of the corporation except that he may become personally liable by reason of his own acts or conduct," MODEL BUSINESS CORP. ACT (1984) (revised), supra note 14, at §6.22 (emphasis supplied), which might be read as an effort to immunize shareholders from personal liability for a corporation's torts as well as for its contractual debts.

109. Although it is arguable that, in general, competition among states for corporation charters creates pressure toward efficiency in state corporation statutes, see Winter, State Law, Shareholder Protection, and the Theory of the Corporation, 6 J. LEGAL STUD. 251 (1977), this is not the case where the costs of inefficient law are borne by third parties, such as out-of-state tort victims. Thus, if state corporation law could freely govern the extent of liability for corporate torts, Delaware would have a strong incentive to amend its corporation statute to establish, say, a cap of \$5,000 on any corporation's liability for any tort.

Massachusetts had also adopted unlimited liability. Moreover, under established conflict of laws doctrine, the Illinois courts should be able to assert personal jurisdiction over the Massachusetts shareholders given that the substantive tort law in Illinois makes those shareholders liable.¹¹⁰ With unlimited liability, the situation would be no different from the case of a resident of Massachusetts who is a partner in a Delaware partnership that commits a tort in Illinois, or in general from any situation in which an agent of a Massachusetts resident commits a tort in Illinois in the course of serving the principal.¹¹¹

Although such jurisdictional issues seem manageable within the United States, they might cause more serious practical problems of enforcement in an international context. In particular, suppose a firm incorporated in a foreign country, with shareholders who are residents of that country, commits a tort in the United States that results in damages exceeding the corporation's assets. If that country does not itself adopt unlimited liability for corporate torts, then the courts of that country might resist enforcing personal judgments against the corporation's shareholders for the remainder of the damages. A country adopting such a posture might quickly become the home for many thinly capitalized corporations undertaking hazardous activities in other nations, and at prices that undercut those of any firm incorporated in a jurisdiction that recognizes unlimited liability.

This possibility must be taken seriously, and deserves to be examined in greater detail than we can give it here. We note, however, that there are various measures

110. See Brilmayer & Paisley, Personal Jurisdiction and Substantive Legal Relations: Corporations, Conspiracies, and Agency, 74 CALIF. L. REV. 1 (1986) (discussing, in general, when jurisdiction over one defendant implies jurisdiction over a legally related party, such as a shareholder). For jurisdictional purposes, the unlimited liability rule proposed here would in essence extend to all corporate torts the treatment of shareholders that is currently found in those cases in which courts pierce the corporate veil.

111. *Id.* at 11, 16-19.

available at the state or federal level to deal with such forms of international opportunism. These include, for example, denying the right to conduct certain types of business within the United States to any firm incorporated in a nation that refuses to recognize unlimited liability for corporate torts, or requiring the posting of bond or proof of adequate insurance for potential tort damages by such a corporation before it can conduct business.¹¹²

E. Prospectivity of Application

Unlimited shareholder liability for corporate torts should presumably be given only prospective and not retroactive application. Indeed, there is much to be said for making unlimited liability applicable only for tort claims filed no sooner than, say, two years after the date that the unlimited liability regime is adopted. This timetable would permit individuals who currently hold poorly diversified stock portfolios to diversify their holdings or to sell off their stock holdings in individual companies and purchase mutual fund shares instead. It would also provide an opportunity for corporations, and perhaps individuals, to purchase the amount of insurance appropriate for the new regime. Making unlimited shareholder liability applicable immediately, much less

112. Although, as we discuss below, see infra Part VII.A, we do not believe that mandatory insurance is, in general, a sufficient substitute for unlimited liability, in this context it might serve adequately. The object here would be to err on the high side—that is, to require that a corporation carry, not a "reasonable" amount of insurance (which would be very hard to determine), but rather the amount of insurance necessary to cover the maximum amount of damages it could likely cause. (To make this administrable, the insurance requirement for a firm in a given industry might be stated as a given—very large—multiple of the gross receipts that the firm receives in the jurisdiction.) The purpose of the requirement is not principally to make the corporation purchase insurance, but rather to give it a strong incentive to waive limited liability by incorporating in a jurisdiction that is willing to recognize personal judgments against shareholders for corporate torts.

retroactively, might impose large windfall losses on some small shareholders, and lead to costly litigation to recover from the shareholders of corporations that are currently poorly insured, while having no useful incentive effects that cannot be obtained simply through prospective application.

VI. EXPERIENCE WITH UNLIMITED LIABILITY

It is common today to think of limited liability as an integral part of the corporate form and therefore to feel that abolishing limited liability, even in tort, would be recklessly revolutionary. But limited liability in both tort and contract evolved over the past 150 years and did not become universal even in the United States until about fifty years ago.

A. Historical Developments

Blumberg has recently offered an extensive and thoughtful survey of the historical experience with unlimited liability.¹¹³ As he points out, in England prior to 1844, manufacturing firms had difficulty obtaining corporate charters. Consequently, large manufacturing firms were commonly formed as unincorporated joint stock companies with transferable shares. Indeed, an active public market in the shares of such companies developed as early as the seventeenth century. These firms had roughly the legal characteristics of a large partnership, including unlimited joint and several liability for all corporate obligations. Then, between 1844 and 1855, joint stock companies were permitted to incorporate but had to retain unlimited liability. Only after

113. P. BLUMBERG, supra note 1. Much of this material previously appeared in Blumberg, Limited Liability and Corporate Groups, 11 J. CORP. L. 573 (1986).

1855 was incorporation with limited liability generally available. Prior to 1855, joint stock companies commonly sought to limit their shareholders' liability to voluntary creditors by contractual means, thus providing evidence that limited liability is the appropriate default rule for contractual obligations. Such devices presumably did not succeed, however, in limiting liability in tort. Nevertheless, by 1844 there were almost 1,000 joint stock companies in England, some with thousands of shareholders.¹¹⁴

Similarly, although American states freely granted corporate charters by the beginning of the nineteenth century, for the first several decades of that century a number of states imposed unlimited liability on manufacturing corporations. Nevertheless, many manufacturing firms incorporated in this period. Moreover, states that were slow in adopting limited liability, such as Massachusetts (1830) and Rhode Island (1849), did not appear to suffer a conspicuous disadvantage in industrial development in comparison to neighboring states, such as Connecticut and New Hampshire, that adopted limited liability earlier.¹¹⁵ And, although most American states had adopted limited liability for corporations in general by the 1850's, California imposed unlimited pro rata liability by statute on the shareholders of both domestic and foreign corporations from statehood in 1849 until 1931, evidently without crippling industrial and commercial development. Even after discarding unlimited liability, many states provided for double or triple shareholder liability for corporate debts throughout the nineteenth century—liability that, at least originally, extended to tort creditors as well. Similarly, most states, as well as federal banking legislation, imposed double liability on the shareholders of banks until the 1930's.¹¹⁶ An efficient mechanism, in the form of a procedure in equity termed the "creditors' bill," ultimately evolved to

114. P. BLUMBERG, *supra* note 1, at 9-23.

115. *Id.* at 23-38.

116. *Id.* at 42-49.

provide a means for obtaining a collective judgment, good against all shareholders, that was res judicata in other jurisdictions and subject only to personal defenses such as the number of shares actually held.¹¹⁷

This extensive experience suggests that a regime of unlimited liability is administrable and that corporations with publicly-traded shares can survive and prosper under it. Prospective shareholders will not all be scared away. To be sure, tort liability for shareholders was evidently rare in the period involved. But historically unlimited liability generally extended to contract as well as tort, and contractual liability for shareholders was presumably a serious prospect. Moreover, in the past, unlimited liability regimes for joint stock companies often employed joint and several rather than pro rata liability. If such a regime is viable, presumably a regime involving unlimited liability only in tort, and with pro rata liability, is much more so.

B. What Does History Tell Us About Efficiency?

The fact that unlimited liability has existed and survived over relatively long periods does not necessarily establish that it is efficient. Indeed, the ultimate rejection of unlimited liability, in tort as well as in contract, might be taken as evidence that it is an inferior rule. If, as argued here, unlimited shareholder liability in tort may well be the efficient rule today, were most jurisdictions simply mistaken in employing the contrary rule for the past century and a half? Or could conditions somehow have changed in recent times?

The historical record does not answer these questions clearly. Evidently no scholar has yet assembled sufficient evidence from past experiences with unlimited

117. Id. at 52-53.

liability to assess how difficult it was to administer or what its practical incentive effects were relative to those of limited liability. Thus the only clear conclusion that past experience permits is the observation that extensive corporate development is at least compatible with unlimited liability. There are, however, several reasons why the general rejection of unlimited liability in tort after about 1850 should not be taken to indicate that it would be inefficient today.

First, then as now, the law apparently failed to distinguish clearly between tort and contract when it came to shareholder liability. Since contractual liability was undoubtedly more important, the rule that was efficient for contract creditors was, it appears, simply adopted for both, without much concern about the possibility of distinguishing between the two. Indeed, in the past, limited liability may not often have been an important issue in tort cases. Torts that would bankrupt a publicly-traded firm were presumably rare. And, where the corporate defendant was a closely-held firm, it may have been that major shareholders were often personally liable on the basis of their active involvement in tortious conduct. As noted in the Introduction, tort liability that can bankrupt a widely-held firm seems to be a modern phenomenon.

Second, limited liability became the prevailing rule in the United States long before corporate subsidiaries were common or even, in general, legal.¹¹⁸ Yet corporate subsidiaries are among the firms that are most likely to employ limited liability today to externalize tort damages.

Third, both the capital markets and the insurance markets have matured considerably over the past hundred years. Liability insurance was poorly developed in the middle of the nineteenth century. Weak actuarial data and the regionalism of

118. See id. 58-62.

insurance markets limited opportunities to diversify risks.¹¹⁹ Modern refinements in risk assessment, together with the nationalization and internationalization of insurance markets, have presumably made corporate liabilities much easier to insure. Similarly, the nationalization and internationalization of stock markets, as well as the development of large intermediaries such as pension funds and mutual funds, permit the securities markets to diversify risk far better than they could in the past.

Finally, procedural reforms, improved communications, and improved record-keeping undoubtedly make it proportionately less costly today than it was 100 years ago to identify and collect judgments from all shareholders of a given corporation as of a particular date.

VII. THE ALTERNATIVES TO UNLIMITED LIABILITY

Despite the attractions of unlimited liability as a means of regulating safety and investment incentives, the possibility remains that alternative legal reforms could achieve the same effects at lower cost. Indeed, most commentators who question the incentive effects of limited liability recommend reforms short of imposing unlimited liability on all shareholders. The most commonly mentioned reforms fall into three categories: "coverage-oriented" reforms, which seek to guarantee that firms have adequate resources to satisfy tort judgments; "liability-shifting" reforms, which shift responsibility for the firm's excess tort liability to contractual participants in the firm other than its shareholders; and "veil-piercing" reforms, which broaden the categories of cases in which courts disregard the corporate boundaries. Although all three genres of reform could mitigate the perverse effects of limited liability, there are strong reasons to

119. See Hansmann, The Organization of Insurance Companies: Mutual Versus Stock, 1 J. L. ECON. & ORG. 125, 145-49 (1985).

believe that none would prove as effective as an unlimited liability regime.

A. Coverage-Oriented Reforms

Coverage-oriented alternatives to unlimited liability include such simple devices as establishing fixed insurance coverage or capitalization levels for firms, which would then be enforced by holding corporate officers or directors personally liable for a breach of the statutory norm. Putting aside for the moment the potential enforcement problems,¹²⁰ the obvious difficulty with coverage rules is their inflexibility. No single coverage level would be satisfactory across industries, firms of different sizes, or even production technologies. Moreover, regulators would have great difficulty in acquiring the information necessary to make fine-grained determinations of appropriate coverage levels, particularly since the magnitude of potential tort losses would often change rapidly over time with new technological developments. At best, then, fixed coverage levels would become minimum coverage levels that would be keyed to the smallest and safest firms in the relevant industry grouping. At worst, such levels would become wholly irrelevant to the actual magnitude of tort losses, as clearly happened in the infamous taxi cab cases.¹²¹ In either case, fixed coverage levels would be unlikely to change the basic incentive problems associated with limited liability.

Even if it were possible to fix realistic insurance or capitalization levels, moreover, many firms—and particularly many publicly-traded firms—would be forced to

120. See *infra* Part VII.B.

121. See, e.g., *Walkovszky v. Carlton*, 18 N.Y.2d 414, 276 N.Y.S.2d 585, 223 N.E.2d 6 (1966). In *Walkovszky* and other taxi cab cases, courts have refused to pierce the corporate veil to hold the shareholders of thinly-capitalized cab companies personally liable for the negligence of drivers. The cabs at issue are invariably insured at the minimum level required by state law, but this level is typically a small fraction of the actual loss occasioned by a serious traffic accident.

bear unnecessary costs in attempting to maintain sufficient coverage levels to meet all possible tort judgments. By contrast, the firm's shareholders will often be able to bear the risks of unusually large damages more cheaply by employing the diversification potential of the securities market themselves. Thus, a regime of unlimited liability has yet another important flexibility advantage over mandatory coverage requirements: it permits the firm and its shareholders to decide how much risk should be borne through insurance or capitalization of the firm and how much should be borne directly by the shareholders and the market.

This is not to deny that minimum capitalization and insurance requirements may sometimes be appropriate. As discussed in Part IV.C, such requirements may be helpful in frustrating a high-roller strategy in specific industries. But, even in these cases, minimum capitalization and insurance requirements are more likely to be effective as a supplement to, rather than as a substitute for, unlimited shareholder liability. If used as a supplement to unlimited liability, such requirements could sharply reduce the supply of potential high-rolling owners by both (1) increasing the amount of personal assets a high roller must wager to enter the industry and (2) decreasing a high roller's expected return by increasing his prospective loss from an adverse tort judgment. To the extent that high rollers are thus deterred, unlimited liability could then serve to assure that the remaining better-financed owners in the industry would have the right incentives to operate their firms efficiently.

The hazardous waste disposal industry offers evidence that such a combined strategy can be effective. In the 1970's, this industry was characterized by numerous small firms with minimal capitalization—that is, by a financial structure that seemed transparently chosen to minimize liability.¹²² Then, in 1976, the Resource

122. M. Lange, *supra* note 3, at 32-33.

Conservation and Recovery Act (RCRA)¹²³ imposed financial responsibility requirements on the industry in the form of minimum asset levels and/or liability insurance coverage, and also increased asset levels by requiring firms to deploy capital-intensive technologies.¹²⁴ Subsequently, the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA)¹²⁵ extended liability to "owners" and "operators" of hazardous waste facilities, which, in various circumstances, courts have interpreted to include customers, lenders, corporate parents and other affiliated actors—hence imposing a diluted form of de facto unlimited liability.¹²⁶ As a consequence, subsidiarization has lost much of its value as a tactic for evading liability.¹²⁷ The combined effect has been to transform the industry into one characterized by a smaller number of firms, each of which is relatively large and has substantial equity capitalization.¹²⁸

B. Liability-Shifting Reforms

Similarly, alternatives to unlimited liability that would shift liability to participants in the firm other than shareholders do not seem promising. One commonly-

123. 42 U.S.C.A. § 6920 et seq. (West Supp. 1990).

124. M. Lange, supra note 3, at 34.

125. 42 U.S.C. §§ 9601-9675 (1988).

126. See Dent, supra note 1; M. Lange, supra note 3, at 37, 55. In effect, the standards that the courts have been using to extend liability to shareholders under CERCLA are essentially traditional tort principles. Consequently, the jurisprudence developing under CERCLA is roughly the approach suggested above in Part V.A.

127. Hazardous waste disposal companies nevertheless continue to resort to subsidiarization, apparently because parent companies may still be able to escape liability under current interpretations of CERCLA. See M. Lange, supra note 3, at 53-55.

128. Dent, supra note 1, at 175; M. Lange, supra note 3, at 45-47. Dent erroneously suggests that the effect of expanded liability under CERCLA has been the reverse: to induce smaller scale and disaggregation.

proposed alternative of this type would hold directors or controlling officers personally liable for any portion of a tort judgment that exceeds the firm's assets.¹²⁹ For smaller firms able to insure their expected tort losses, this form of managerial liability would doubtless provide a powerful insurance incentive, much as imposing unlimited liability on shareholders might do. Important difficulties would arise, however, if insurance were unavailable or prospective tort losses were very large relative to the personal assets of the liability targets. In the absence of insurance, imposing personal liability for the firm's entire tort losses on its managers would create a powerful incentive to overinvest in safety measures or, what is more likely, to resign.¹³⁰ Alternatively, if potential tort losses were quite large relative to personal assets, this rule might generate the opposite incentive: in exchange for a very high salary, a manager might be willing to have his firm undertake extremely risky activities because he would be judgment proof in the event of an accident.

Liability-shifting and coverage-oriented reforms might be combined by holding directors or officers personally liable for the excess tort liability of the corporation only if they failed to obtain an "adequate" level of liability insurance for the firm.¹³¹ This alternative would induce insurance coverage even more directly than would unlimited liability. Its obvious lacuna, however, is that it could not easily reach large losses and risky activities for which insurance is now difficult to obtain. If generous insurance coverage were required by the rule, many firms for which insurance is presently

129. See Halpern, Trebilcock & Turnbull, supra note 1, at 149.

130. These considerations would also preclude a much more radical effort to offset the incentive effects of limited liability through criminal sanctions imposed on corporate officers and directors. Managerial liability—including criminal liability—may be necessary to deter serious, low-visibility corporate offenses. Yet sanctions directed at individual managers are far too costly to substitute on a wholesale basis for the basic tort liability of the firm. For development of this point, see Kraakman, supra note 39, at 869-71.

131. See D. Leebron, supra note 1, at 56-8.

inefficient due to moral hazard would be forced to purchase it nonetheless (or go out of business); consequently, many firms would overinsure and safety precautions might actually decline as a result of moral hazard. By contrast, if insurance were not required where it is presently unavailable, the rule would have no effect on the safety and investment incentives of precisely those firms that would be likely to externalize very large tort costs. Moreover, where expected tort losses were large, a tort of negligent underinsurance would invite the same kind of evasion by judgment-proof managers that might be expected if directors or officers were directly assessable for the firm's excess tort liability.¹³²

Another proposed risk-shifting alternative to unlimited liability would be to change priority rules in bankruptcy to allow tort claimants to collect ahead of some or all contract creditors.¹³³ Like the previous alternatives, this reform would presumably act as an insurance inducement. If insurance were unavailable, however, this reform would enlist secured creditors—for small firms, typically banks or finance companies—as surrogate monitors and risk bearers on behalf of tort victims. For many closely-held firms, such a rule might be more efficient than unlimited shareholder liability. Nevertheless, the advantages of this rule do not require the legislative change in bankruptcy law that its proponents advocate. Secured creditors are always free to waive their priority in bankruptcy over tort claimants. Under an unlimited liability regime, shareholders who would benefit from such a waiver would have an incentive to negotiate for it. Indeed, given the impossibility of predicting which participants in the firm will be superior risk bearers, it seems preferable to begin by imposing unlimited

132. A further problem with this reform lies in defining "reasonable" insurance coverage. A market test of reasonable coverage suffers from the drawback that existing coverage levels interact with settlement levels. Firms insure not against tort judgments but against likely settlement levels.

133. See R. CLARK, CORPORATE LAW § 2.4 (1986); D. Leebron, *supra* note 1, at 58-63.

liability on shareholders and leave the ultimate ordering of priorities to the parties themselves. As we have suggested above, the legal reform that is most likely to achieve this objective is one that joins unlimited liability with a background priority rule in which all contract creditors take precedence over tort claimants. Such a regime would give shareholders the maximum flexibility to reallocate tort risks among participants in the firm in the most efficient manner possible.¹³⁴

A similar but more extreme liability-shifting alternative to unlimited shareholder liability is to impose residual tort liability on a subset of the firm's lenders. To a degree, this strategy has been applied to the hazardous wastes industry under CERCLA.¹³⁵ When pushed to its logical limits, lenders become insurers for the firm's tort liability under such a strategy—and the insurance policies they must offer have no coverage limits. Although that may be efficient in some circumstances, it is unlikely to be efficient in general.¹³⁶ By contrast, as just noted, unlimited shareholder liability might also encourage lenders to assume liability voluntarily, but it would do so only in those cases in which lenders are more efficient risk-bearers than shareholders.

To be sure, shareholders who are judgment proof would have no incentive to pay lenders to assume liability voluntarily, even under unlimited liability. In such circumstances, mandatory lender liability may sometimes increase efficiency, either by inducing a lender to police the firm's insurance coverage or by leading it to withhold credit from an overly risky firm that should be forced out of business entirely. But any

134. See *supra* Part III.A.3.

135. See Toulme & Cloud, The Fleet Factors Case: A Wrong Turn for Lender Liability Under Superfund, 26 WAKE FOREST L. REV. 127 (1991).

136. To a degree, this approach simply forces firms to maintain adequate capitalization and/or insurance in order to obtain credit, and to this extent may be salutary. But, since unlimited liability insurance is generally unavailable to firms, this approach may often require that lenders bear a degree of residual liability that, for reasons of both moral hazard and risk-bearing, is inefficient.

gains in such cases must be balanced against the costs of inefficiently impairing access to credit for all those firms whose lenders are not efficient bearers of tort risks. Moreover, other methods seem likely to be more effective in controlling firms with judgment-proof shareholders. One such method, already discussed, is to impose minimal capitalization and/or insurance requirements on firms in specific industries in which the high roller strategy is particularly prevalent. Another method is to impose liability on other firms besides lenders that contract with the firm in question—such as the firm that produces the toxic chemicals transported by a thinly capitalized trucking company (a strategy that is also adopted by CERCLA¹³⁷).

C. Veil-Piercing Reforms

Finally, rather than going so far as to abolish limited liability in general, many commentators find it tempting to move only part way to unlimited liability by simply broadening the class of cases in which the courts pierce the corporate veil. At present, the boundaries of that class are quite narrow and the doctrine that determines those boundaries is vague and largely unprincipled.¹³⁸

Thus, to take one example, it has been suggested that many of the worst cases of opportunistic manipulation of limited liability could be frustrated simply by making parent corporations liable for the torts of their subsidiaries.¹³⁹ Yet any such partial reform is likely to prove quite unsatisfactory because it will create obvious incentives

137. M. LANGE, *supra* note 3, at 37.

138. See, e.g., R. CLARK, *supra* note 133, at 71-85; Barber, *Piercing the Corporate Veil*, 17 WILLAMETTE L. REV. 371 (1981); Krendl & Krendl, *Piercing the Corporate Veil: Focusing the Inquiry*, 55 DENVER L.J. 1 (1978).

139. See, e.g., P. BLUMBERG, *supra* note 1 (suggesting denial of limited liability for subsidiaries within "corporate groups"); D. Leebron, *supra* note 1 (advocating retention of limited liability except in the case of "subsidiary corporations").

and opportunities for evasion. For example, abolishing limited liability simply for wholly-owned subsidiaries would create an incentive for a parent corporation to distribute to other shareholders some small amount—say five percent—of its subsidiary's stock in order to be able to invoke limited liability. Thus it would presumably be necessary to extend such a rule to make parents liable also for the torts of firms in which the parent holds a large fraction of the stock. But how large a fraction? Anything over fifty percent? Then how about the case of the parent that owns only forty-nine percent of the stock of another firm but effectively controls the latter firm since the rest of the stock is widely held?¹⁴⁰

To avoid the latter difficulty, one might be tempted to go even further and decide, for example, that pro rata unlimited liability should be extended to all corporate shareholders in a corporate tortfeasor, but that shareholders who are individuals should be left with limited liability. Yet this approach would create a strong incentive for large firms to sell off their hazardous activities to small publicly-traded corporations that are thinly capitalized, thus losing economies of scale and incurring the agency problems that accompany diffuse ownership while failing to improve, and perhaps even reducing, incentives to take efficient precautions. The result would be a disaggregation of industry far more severe than is likely to arise under a general scheme of unlimited liability.¹⁴¹

In short, it is very difficult to determine where to drive the piton into this particular slippery slope. Any intermediate stopping point will be arbitrary and will

140. Note, supra note 1, proposes that unlimited liability be extended to all closely-held corporations with 25 or fewer shareholders, where "shareholder" means a person holding at least one percent or \$10,000 of the corporation's stock. Adoption of such a rule would, obviously, just lead to the formation of large numbers of risky firms with 26 shareholders.

141. See supra Part IV.C.

provide a strong incentive for many corporations to position themselves just on the far side of that point, thus distorting the organization of enterprise while still permitting substantial externalization of costs. The only coherent and effective approach is to go all the way and adopt a general rule of unlimited liability.

In practice, it seems unlikely that shareholders of a publicly-traded firm would often bear personal liability for corporate torts under a general regime of unlimited liability. In most cases, the doctrine would only reach shareholders of closely-held firms and, in particular, the corporate parents of subsidiaries. But it is essential that unlimited liability be a general rule that extends in principle to publicly-traded firms as well. Otherwise, evasion of liability through partial or complete sales of risky subsidiaries to individual shareholders will undermine the benefits of unlimited liability and bring the additional costs of inefficient ownership structures.

Moreover, veil-piercing is itself simply a form of unlimited liability. To decide that there are any circumstances in which shareholders can be held liable for tort damages even though the formalities of the corporate form have been observed is to discard limited liability in principle. The issue that remains is simply to decide in which particular cases, and for how much, shareholders are to be held personally liable. And for this purpose, as we have emphasized, any arbitrary line between corporations in which shareholders can be held personally liable in tort and those in which they cannot—whether between subsidiaries and non-subsidiaries or between closely-held and publicly-traded firms—will create unnecessary and costly problems. Rather, as soon as one has recognized that shareholders can be personally liable for corporate torts in principle, one is logically driven to employ general principles of tort law—rather than formalities of corporate structure—to determine the scope of their potential liability.

In sum, the distinction between "liberalized veil-piercing" and "unlimited liability" is largely rhetorical. And while the former term is reassuringly conservative, it also

disguises, and threatens to mislead, the doctrinal evolution at stake.

VIII. CONCLUSION

To investigate the case for retaining a rule of limited shareholder liability for corporate torts, this Article has systematically explored the characteristics and policy advantages of a plausible alternative regime: a rule of pro rata shareholder liability for corporate torts. Our analysis indicates that the most common arguments offered on behalf of limited liability—arguments that turn on characteristics that are specific to corporate tortfeasors and the special concerns of corporate law—are largely unpersuasive. There is no reason to suppose that unlimited liability would discourage shareholder investment except in firms that, under the prevailing norms of tort law, impose net costs on society. Even in the case of publicly-held corporations, unlimited liability would not burden the capital markets except, again, to the extent that it would lower share prices to reflect the full social costs of corporate activities. Moreover, nothing about the ownership structure of the corporation, including the larger publicly-held corporation, presents insurmountable obstacles to the judicial administration of an unlimited liability rule. Although a workable rule would call for a number of refinements to accommodate the exigencies of freely-trading shares, our preliminary sketch of a regime of unlimited liability suggests many of the appropriate adaptations. Thus, if the case for limited liability turned exclusively on questions of corporate structure or finance, we would conclude without hesitation that this rule ought to be abandoned in favor of the basic policy goals of the tort system. Although adjustments in liability rules or damages awards might be merited under a regime of unlimited liability, they should be guided by the deterrence and risk-sharing aims of tort law rather than by the default rule that corporate law establishes to govern relationships between the

firm and its contract creditors.

Even after discounting the conventional corporate law claims, however, there remain several arguments for limited liability. The first of these arguments is that shareholders, no less than other potential tort defendants, may attempt to evade tort liability by hiding assets or by exploiting the limitations on personal liability offered by bankruptcy law. To the extent that shareholders successfully resort to evasion strategies under a regime of unlimited liability—for example, by selling risky assets to highly leveraged individuals—they might not only blunt the incentive effects of tort liability but also impose other social costs, such as the loss of capable management or valuable integration efficiencies. The second non corporate argument supporting limited liability is a conflict of law issue: without careful attention to extraterritorial enforcement, it would not be easy to implement unlimited liability in one jurisdiction while other jurisdictions retained a limited liability rule. Finally, the third non corporate argument on behalf of limited liability is one that is seldom made explicitly but, we suspect, is widely credited nonetheless. This is the claim that limited liability is a necessary check on the expansionist tendencies of the courts in deploying liability rules.

It is the cumulative force of these arguments, rather than issues peculiar to the corporate form, that makes the choice between limited and unlimited liability regimes a difficult one. Although we lack the detailed statistical and case studies that one would like to make policy in an area such as this, at present none of these concerns seems, upon close examination with the evidence at hand, sufficiently serious to justify the retention of limited liability. While we cannot claim to have demonstrated conclusively the superiority of unlimited liability, we believe we have exposed the weakness of existing justifications for limited liability. If there remain reasons for retaining the limited liability regime, the burden is on the proponents of that regime to provide a persuasive exposition of those reasons.

APPENDIX

A General Model. Let x be the level of safety precautions taken by the corporation, K be the amount of capital invested in the corporation by its shareholder, and L be the size of the loss if there is an accident, all measured in dollars. Let $p = p(x, K)$ be the probability that an accident will occur, where $\partial p / \partial x < 0$, $\partial^2 p / \partial x^2 > 0$, and $\partial p / \partial K > 0$. The amount of physical output Q produced by a firm is a function of the amount of capital invested, $Q = Q(K)$, $Q' > 0$. There are N identical firms in the industry. The price P at which output sells is given by the inverse demand function $P = P(NQ)$, $P' < 0$. The cost of production C is proportional to the amount of capital invested, $C = kK$. The firm will be strictly liable if there is an accident. With limited liability, the firm's potential liability is limited to the amount of its invested capital, K . Finally, assume that it is always the case that $L > K$.

Investment in Safety. Under limited liability, the net private value of the firm to the shareholder, beyond the value of the invested capital K , is

$$V_p = PQ - kK - x - pK \quad (1)$$

In contrast, the social value of the firm is

$$V_s = PQ - kK - x - pL \quad (2)$$

Under limited liability, the shareholder will have the firm invest in safety precautions up to the point at which $\partial V/\partial x = 0$, which implies

$$\partial p/\partial x = -1/K \quad (3)$$

On the other hand, social welfare, V_s , is maximized where $\partial V_s/\partial x = 0$, which implies

$$\partial p/\partial x = -1/L \quad (4)$$

Since $L > K$, (4) requires a higher level of x than that given by (3). Consequently, under limited liability the firm will choose too low a level of precautions (given the level of K that it chooses).¹⁴²

142. Beard, *Bankruptcy and Care Choice*, 21 RAND J. ECON. 626 (1990), presents a model demonstrating that limited liability can sometimes induce a potential tortfeasor to invest too much rather than too little in accident avoidance. The source of this result is that, in Beard's model, expenditures on care reduce the amount of assets available to satisfy a tort judgment, thus creating an implicit subsidy to care. In extreme cases, this subsidy can outweigh the disincentive to invest in care caused by the fact that, with limited liability, the tortfeasor will not have to pay the full cost of an accident. This result does not appear in our model because we assume that expenditure on care does not affect (and, in particular, does not *reduce*) the amount of assets available to satisfy a tort judgment.

Beard's result probably has little empirical application to corporate torts. One would not often expect a corporation's expenditures on safety to reduce significantly, if at all, the assets available to satisfy tort judgments. Indeed, such expenditures should generally *increase* those assets. In addition, Beard's result is unlikely to be found except in the unusual case in which there is a large probability of an accident that will result in damages that just barely exceed the firm's net assets. Nevertheless, Beard demonstrates that there is at least a theoretical possibility that the distortion caused by limited liability will sometimes take the form of too much rather than too little expenditure on care.

Size of the Industry. Under limited liability, entry into the industry will continue (that is, N will grow) until price is driven down to the point where $V_p = 0$. At that point $V_f < 0$ since, from (1) and (2), $V_f = V_p - p(L-K) < V_p$. Thus there will be overinvestment in the industry as a whole. (More precisely, given the levels of K and x chosen by firms under limited liability, there will be too many firms in the industry.)

Size of the Firm. Competition will drive firms to operate at the size—i.e., the level of K —that minimizes average cost. For the firm with limited liability, average cost is given by

$$AC_f = [kK + x + p(x,K)K]/Q(K) \quad (5)$$

With limited liability, the firm will operate where

$$\partial AC_f / \partial K = 0 \quad (6)$$

On the other hand, average *social* cost is given by

$$AC_s = [kK + x + p(x,K)L]/Q(K) = AC_f + p(x,K)(L - K)/Q(K) \quad (7)$$

The socially optimal size of the firm is that which minimizes (7), i.e., for which

$$\partial AC_s / \partial K = 0 \quad (8)$$

This is equivalent to

$$\frac{\partial}{\partial K} (AQ) + \frac{\partial}{\partial K} [p(x,K)(L-K)/Q(K)] = 0 \quad (9)$$

or

$$\frac{\partial}{\partial K} (AQ) + \{[(L-K)/K][E_{p,K} - E_{Q,K}] - 1\}p/Q(K) = 0, \quad (10)$$

where $E_{p,K}$ is the elasticity of p with respect to K and $E_{Q,K}$ is the elasticity of Q with respect to K . The firm size chosen under limited liability will be socially optimal only if, when condition (6) is satisfied, condition (8) is also satisfied. This will be true only if, when condition (6) is satisfied,

$$\{[(L-K)/K][E_{p,K} - E_{Q,K}] - 1\}p/Q(K) = 0, \quad (11)$$

which will occur only when

$$E_{p,K} - E_{Q,K} = K/(L-K). \quad (12)$$

On the other hand, the firm size will be inefficiently large if, when $\partial AC_p/\partial K = 0$, $\partial AC_q/\partial K > 0$, which will occur when

$$E_{p,K} - E_{Q,K} > K/(L-K). \quad (13)$$

This means that, under limited liability, the firm will be too big when (a) $E_{p,K}$ is larger than $E_{Q,K}$ and (b) L is significantly larger than K . Conversely, the firm will be too small when (a) $E_{p,K}$ is smaller than $E_{Q,K}$ or (b) L is not much larger than K .

An intuitive interpretation of these results is most easily obtained by considering the expression in curly brackets in (10), which we can rewrite as

$$[(L-K)/K]E_{p,K} - [(L-K)/K]E_{Q,K} - 1. \quad (14)$$

The first of the three terms in (14) reflects the extent to which an increase in K leads to an increase in accident costs that the shareholder ignores owing to limited liability. The second term reflects the fact that, in considering an increase in output, the shareholder ignores the resulting decrease in average accident costs to the extent that damages are externalized.

And the third term in (14) reflects the fact that an increase in K increases private cost for the shareholder, but not social cost, by increasing the amount of assets available to satisfy a tort judgment against the firm.

Effects of Unlimited Liability. If the shareholder's personal wealth is large enough so that, when added to K , it covers L , the value of the firm to the shareholder with unlimited liability is the same as that given by (2), and thus unlimited liability will give the shareholder an incentive to select the socially efficient levels of x and K .