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MEDICAL MALPRACTICE AND THE INSURANCE UNDERWRITING CYCLE

*Tom Baker**

Between the idea and the reality,
Between the motion and the act,
Falls the shadow.[1]

INTRODUCTION

The insurance underwriting cycle has become a touchstone in the debate over medical malpractice reform. On the one hand, trial lawyers and others who seek to preserve existing medical malpractice liability rules commonly report that the high-priced, "hard market" phase of the liability insurance underwriting cycle, and not real developments in malpractice litigation, fueled the medical malpractice insurance crises of the mid-1970s, mid-1980s, and early 2000s.[2] On the other hand, medical associations and others who seek further restrictive tort reforms claim that those crises represented the long overdue consequences of escalating tort costs that the competitive, "soft market" phase of the insurance underwriting cycle had allowed people to wish away.[3] Each side accuses the other of using the insurance under-

* Connecticut Mutual Professor and Director, Insurance Law Center, University of Connecticut School of Law. Thank you to: Matthew Dolan, Tammi Dulberger, Sean Fitzpatrick, Christian Lahnstein, Ralph Winter, and participants at the 2004 American Association of Law Schools annual meeting and the 2004 Clifford Symposium for helpful discussions; Brian Glenn, Sean Fitzpatrick, Peter Siegelman, and Ralph Winter for helpful comments on an earlier draft; and Thomas Farrish and John Maroney for research assistance. During the recent hard market I prepared reports for a trial lawyers association and for a leading insurer. Each helped me develop my understanding of the insurance underwriting cycle. I do not have a continuing relationship with either organization.

1. T.S. Eliot, *The Hollow Men*, *in* 2 THE NORTON ANTHOLOGY OF AMERICAN LITERATURE 1225, 1227 (Nina Baym et al. eds., 2d ed. 1985). Thanks to Matthew Dolan, *Repeating the Sins of Market Cycles*, INSIGHTS, Oct. 2003, at 1, *available at* http://www.onebeaconpro.com/insights/insights_vol2_sp.pdf.

2. The American Trial Lawyers Association and their allies point to the analysis of Robert Hunter as reported in, for example, J. Robert Hunter, *Consumer Advocate Challenges Insurers on "Crisis" In Med Mal Mkt*, NAT'L UNDERWRITER: PROP. & CASUALTY/RISK & BENEFITS MGMT. EDITION, Oct. 7, 2002, at 10, 10.

3. *See generally, e.g.*, Robert F. Wolf, *Actuary Counters Hunter on Med Mal Insurance Crisis*, NAT'L UNDERWRITER: PROP. & CASUALTY/RISK & BENEFITS MGMT. EDITION, Nov. 11, 2002, at 10, 10.

writing cycle to obfuscate the real issues and achieve policy preferences that have little to do with medical malpractice insurance prices.

Like all good spin, these stories about the underwriting cycle work from an underlying partial truth. Nothing concentrates the minds of legislators on the alleged excesses of malpractice liability more than doctors who are angry about skyrocketing insurance premiums; and the *immediate* driver of those skyrocketing premiums surely was the change in the underwriting climate.[4] Litigation behavior and malpractice claim payments did not change in any significant, systemic sense between 1970 and 1975, between 1981 and 1986, or between 1996 and 2001.[5] What changed, instead, were insurance market conditions and the investment and cost projections that the insurance market built into medical malpractice insurance premiums over those periods.[6] Insurers that had offered low prices based on rosy scenarios in 1970, 1981, and 1996 switched to high prices based on pessimistic scenarios in 1975, 1986, and 2001.

On the other hand, medical malpractice claim payments did in fact increase more rapidly than medical malpractice insurance premiums during the years leading up to each hard market.[7] A "hard" turn in an insurance underwriting cycle comes when insurers collectively respond to the fact that the prevailing premiums cannot support future claim payments, whether because claims costs have been higher than projected or investment income has been lower than projected, or some combination of the two. In the long run at least, medical malpractice insurance prices must bear a reasonable relationship to medi-

4. *See infra* text accompanying notes 29–33. **R**

5. *See generally, e.g.*, David J. Nye & Donald G. Gifford, *The Myth of the Liability Insurance Claims Explosion: An Empirical Rebuttal*, 41 VAND. L. REV. 909 (1988); Neil Vidmar et al., *Uncovering the "Invisible" Profile of Medical Malpractice Litigation: Insights from Florida*, 54 DEPAUL L. REV. 315 (2005). *See also infra* note 70.

6. *See infra* text accompanying notes 29–33. **R**

7. This is not to say that they are too high. Since 1975, insured medical malpractice losses have constituted a relatively constant share of U.S. health care dollars. From 1975 to 2001, loss costs in this line rose 986% in nominal terms and 230% in real terms. *See* A.M. BEST CO., AGGREGATES AND AVERAGES PROPERTY/CASUALTY (1985 and 2002 eds.) (these percentages are derived from more than one edition). During the same period, the U.S. population increased by 32%, and GDP grew 516% in nominal terms and 128% in real terms. During this period, the percentage of the GDP accounted for by "health services" grew 69% (from 3.5% to 5.9%), which helps place the growth of medical liability losses in perspective. U.S. Dep't of Comm., Bureau of Economic Analysis, Industry Economic Accounts, Gross Domestic Product by Industry Area (last updated Dec. 20, 2004), *available at* http://www.bea.doc.gov/bea/dn2/gdpbyind_data.htm (linking to GDP data reports for 1977 to 2003). If medical malpractice losses had constituted a constant share of health services costs over the 1975 to 2001 period, we would have expected real growth of 216% over that period, which is very close to what occurred.

cal malpractice claim costs, or else insurers will not be able to pay claims as they become due.[8]

Lost in the recent efforts to take political advantage of (or explain away) the insurance premium spikes of the hard market is any real attempt to understand how the underwriting cycle works, why it is so severe in medical malpractice insurance, and what it might mean for the ability of malpractice liability to deliver on its risk distribution, loss prevention, and corrective justice objectives. This Article attempts to fill that gap.

Part II provides a primer on the liability insurance underwriting cycle that draws on the research prompted by the mid-1980s insurance hard market. This Part explains that the recent dramatic increases in predicted medical malpractice losses are a result of the insurance cycle, not dramatic changes in medical malpractice claim payments. Part III explores why the underwriting cycle is so severe in medical malpractice insurance. This Part explains my recent Geneva Lecture analysis of liability risks[9] within the specific context of medical malpractice and with a fuller consideration of the dynamics of the underwriting cycle. In short, the cycle is so severe because of the following two reasons: first, there is a relatively long period between the time that the premiums for a medical malpractice policy are paid and the time that losses under that policy can be known with certainty; and second, there is more uncertainty regarding future medical malpractice losses than many other kinds of losses.

Part IV explores whether insurance regulators should consider moderating the underwriting cycle (assuming that they could do so). In this Part, I argue that there are good reasons to believe that medical malpractice insurance crises lead medical providers to improve patient safety and, therefore, that efforts to moderate the cycle could have a negative impact on patient safety. Further research is needed before we can draw firm conclusions, but leaving the insurance cycle alone would be the wiser course for now.

8. Recent econometric research shows that state-by-state variations in malpractice insurance premiums over a ten-year period cannot be explained using state by state variations in claims payments. *See* KATHERINE BAICKER & AMITABH CHANDRA, THE EFFECT OF MALPRACTICE LIABILITY ON THE DELIVERY OF HEALTH CARE (Nat'l Bureau of Econ. Research, Working Paper No. 10709, 2004). This suggests that the relationship between claim payments and premiums need not be as close as commonly assumed by economic theorists.

9. *See* Tom Baker, *Insuring Liability Risks*, 29 GENEVA PAPERS ON RISK & INS. 128 (2004).

II. A Primer on the Insurance Underwriting Cycle

The insurance underwriting cycle is an insurance industry specific business cycle that consists of alternating periods in which insurance is priced below cost (a "soft" market) and periods in which insurance is priced above cost (a "hard" market).[10] Notably, coverage is plentiful and nonprice terms are favorable to policyholders when the insurance is sold below cost, while coverage is restricted and nonprice terms are unfavorable to policyholders when the insurance is priced above cost.[11] This cycle presents a puzzle to industry insiders and outsiders alike, who all wonder why the "good stuff" is sold cheaply one year, becomes hard to get at almost any price one or two years later, is widely and cheaply available just a few years after that, and then is almost certain to disappear once again at some uncertain point in the future.

"Cost" is the most important word in the simple definition with which I began and is the key to understanding the insurance underwriting cycle. The meaning of insurance "cost" implied in this definition involves a *retrospective* perspective that insurers cannot adopt when setting prices. At the time insurers set their prices, most of the costs of the insurance coverage will be incurred only in the future. As a result, insurers constantly have to imagine the future to decide how to price their products today. This situation creates a remarkably high degree of uncertainty in insurance pricing, especially as compared to products like potato chips, automobiles, and sneakers, and even as compared to most other services, as I will explain. This uncertainty about insurance costs is the fuel that drives the underwriting cycle.

A. *Setting the Stage: Uncertainty in Insurance Pricing and Reserving*

Consider a book of malpractice insurance policies sold to obstetricians in the State of Illinois during 2004. What is the "cost" of those policies? By convention, the insurance industry and insurance regulators separate insurance costs into two categories: the administrative costs involved in selling and servicing the policies (referred to as "underwriting expenses"), and the costs associated with paying the claims

10. Although I will refer throughout this Article to "the" insurance underwriting cycle, each line of insurance may well be subject to its own cycle. *See* Sean M. Fitzpatrick, *Fear Is the Key: A Behavioral Guide to Underwriting Cycles*, 10 Conn. Ins. L.J. 255, 257 (2004). Although my analysis of the underwriting cycle should apply to other types of liability insurance, this Article makes a careful study only of medical malpractice insurance. Questions such as "Are all types of liability insurance subject to the same underwriting cycle?" and "What is the relationship of cycles in different lines of insurance?" are beyond the scope of this Article.

11. In the remainder of this Article, I will use "price" as shorthand for all the aspects of the insurance contract that fluctuate with the underwriting cycle.

that will eventually be made under the policies (referred to as "loss expenses").[12] It is the latter category comprising loss expenses that is the most uncertain and is also the most important. For medical malpractice insurance, aggregate loss expenses are five times as large as aggregate underwriting expenses.[13]

When the insurer sells the 2004 policies, the only loss expenses that can be assigned to the policies are projections of what may take place in the future. This means that the "costs" the insurer uses to calculate the premiums are, in an important sense, imaginary. Yes, they can be estimated based on claims paid under policies sold in previous years, but the future is never exactly like the past. Different obstetricians are insured, obstetrical technology and practice routines change, and the liability environment evolves. As a result, past claims costs are an imperfect and possibly misleading guide to future claims costs; thus, judgment is required.

Despite the high level of uncertainty involved in making such predictions, the insurer must make them, and, notably, these predictions have immediate financial consequences. As a matter of prudence (and by legal requirement in most instances), the insurer must set "reserves" that are equal to the amount needed to pay future claims under any policies it sells and then must set aside assets to offset those reserves.[14] These assets are real money, which cannot be used for any other purpose other than earning investment income. Thus, reserves have an immediate effect on profit and loss.[15]

The reserves for new insurance policies are first posted in a category assigned to "incurred but not reported" (IBNR) claims. As claims come in, claims personnel will transfer reserves from the IBNR reserves to the "case reserves" they set up for specific claims. At any given time, the total IBNR and case reserves assigned to a given set of insurance policies is supposed to constitute the best judgment of all the future loss expenses to be paid under those policies. If the case reserves draw down the IBNR reserves more quickly than anticipated, the insurer is supposed to increase the IBNR reserves and set aside additional assets to offset those increased IBNR reserves. The assets to offset such "reserve strengthening" must come from somewhere, either from assets freed up by "releases" of reserves from other sets of

12. *See generally* A.M. Best Co., *supra* note 7. R

13. *See id.* at 276.

14. As should be apparent, this is a simplified explanation that ignores important details such as the timing of earned premiums and, for the moment, investment income.

15. Please note that confusion can result from the multiple uses of the word "loss" in the insurance field. For example, "loss" in the sense of "loss expenses" is very different from "loss" in the sense of "profit and loss." I will endeavor to be clear in my use of the word.

policies (possibly resulting in those policies being under-reserved) or from revenue not yet assigned to other purposes.[16]

The total of paid claims and reserves assigned to a set of policies (plus administrative expenses that I will ignore) equals the "loss expenses" for those policies. Over time, the composition of the loss expenses for a set of policies gradually shifts from 100 percent IBNR reserves, to an evolving proportion of paid claims, case specific reserves and IBNR reserves, and eventually to 100 percent paid claims in the end (many years after the policy is sold). In theory, the loss expenses for the policies sold in a particular year should become more certain over time as the proportion of loss expenses shifts from IBNR reserves to paid claims, though developments in the asbestos liability area have made liability insurers wary of ever claiming complete certainty.[17] Depending on the kind of insurance, it can take years for insurers to reach the point when paid claims constitute even half of the loss expenses for the policies sold in a given year.

Figure 1 shows the accumulation of paid claims over time for the U.S. insurance market for three different kinds of liability insurance sold in 1992: automobile, "occurrence" form medical malpractice, and "claims-made" form medical malpractice.[18] The vertical axis on Figure 1 represents the percentage of what we now know to be the total loss expenses for the 1992 policy year that were paid as of the date indicated on the horizontal axis. As Figure 1 shows, both forms of medical malpractice insurance pay out claim dollars more slowly than automobile liability insurance, and the occurrence form of medical malpractice insurance pays out more slowly than the claims-made form. In the language of the insurance trade, the length of the payout period is referred to as the "tail" of the insurance policy.[19] The longer the tail, the longer it takes for an insurer to know its true costs for any given set of policies. Both kinds of medical malpractice insurance have a longer "tail" than automobile liability insurance.

There are three main points to draw from this simplified explanation of insurance pricing and reserving. First, liability insurance costs

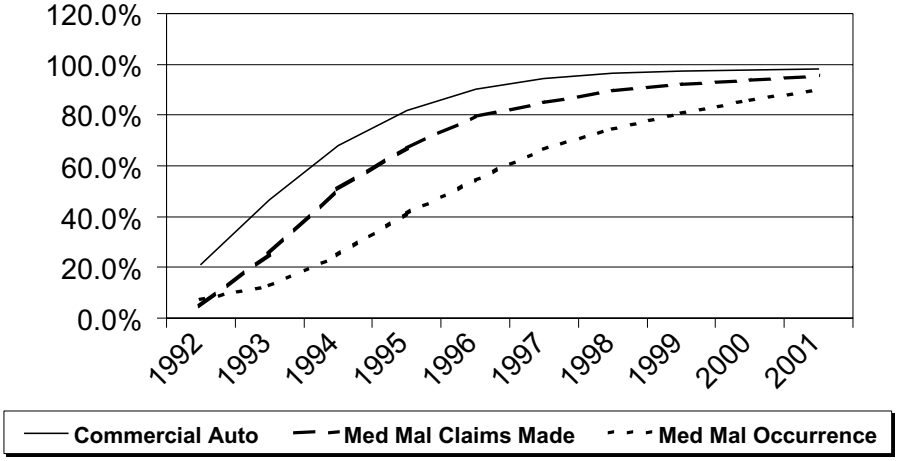
16. This description of insurance accounting is based on informal interviews with underwriters, actuaries, and claims personnel from both insurance and reinsurance companies.

17. *Review & Outlook: At Last, An Asbestos Solution*, WALL ST. J., Aug. 20, 2004, at A12.

18. Occurrence form medical malpractice insurance provides coverage for injuries resulting from medical services provided during the policy period while claims-made form medical malpractice insurance provides coverage for injuries relating to claims reported during the policy period. *See* ROBERT JERRY, UNDERSTANDING INSURANCE LAW (3d ed. 2002). Data for Figure 1 was obtained from A.M. BEST CO., AGGREGATES & AVERAGES PROPERTY/CASUALTY UNITED STATES & CANADA (2003).

19. *See, e.g.*, Baker, *supra* note 9, at 128. R

FIGURE 1
PAID LOSSES AS PERCENTAGE OF TOTAL LOSS INCURRED, 1992 POLICY YEAR



are uncertain at the time of sale, principally because of the problem of predicting future claims costs. Second, a longer "tail" magnifies the uncertainty, because liability claim costs become increasingly difficult to predict the farther into the future we look. Third, and most important for purposes of understanding the underwriting cycle, a longer tail multiplies the effect of changes in the assumptions an insurer uses to predict loss expenses.

This third point and its significance may not be obvious, so I will provide an intuitive explanation and an example. The key intuition is that a change in assumptions about loss expenses can affect, not only claims under policies being sold this year, but also claims that are not yet paid under policies sold in the past. The existence of claims not yet paid under policies already sold creates what some economists have called a "risk overhang."[20] The longer the tail in a given line of insurance is, the greater the risk overhang; and the greater the risk overhang is, the larger the proportion of loss expenses that remains unpaid, and thus subject to revaluation if there is a change in assumptions. In long tail lines of insurance, a change in assumptions has a

20. *See generally* Anne Gron & Andrew Winton, *Risk Overhang and Market Behavior*, 74 J. BUS. 591 (2001). Although the term "risk overhang" appears to be new to Gron and Winton, the compounding effect of lengthening the insurance tail was already well understood. Gron and Winton's interesting new insight is that risk overhang can lead a diversified insurer to find itself in a position with an unexpected concentration in one set of correlated risks (e.g., medical malpractice) leading it to sharply reduce, and even curtail, underwriting those risks in order to balance its portfolio. *See id.* at 593.

compounding effect that can lead to a dramatic need for new reserves and, thus, additional assets to offset those reserves when the future suddenly looks more expensive than insurers had been projecting. This compounding effect can create dramatic losses (in the profit and loss sense) when the future suddenly looks more expensive than insurers had been projecting, and correspondingly dramatic profits when the future suddenly looks less expensive than insurers had been projecting.

Changes in assumptions regarding medical price inflation provide a good example. Imagine that an insurer setting prices for 1998 policies decided that managed care was doing such a good job of controlling medical inflation that medical costs could be expected to increase no faster than the general rate of inflation in the economy, approximately two percent per year. Imagine, further, that the insurer decided that, as in the past, medical malpractice insurance claim costs would increase at the rate of medical price inflation. So a claim that was worth $1 million in 1998 could be expected to be worth about $1.1 million in 2003.

Now imagine that the insurer finds out in 2000 that medical inflation returned to its old ways and was proceeding at a rate that was double that of the economy as a whole (i.e., four percent). That means that a claim that was worth $1 million in 1998 would be worth $1.22 million in 2003, rather than the $1.1 million that the insurer projected when it set the premium, and likewise for all other claims under policies already sold and priced based on the "wrong" assumption about medical price inflation. It is too late to collect additional premiums for policies already sold, and because the new understanding will affect all outstanding policies there are unlikely to be "excess" reserves from other years that can be released to make up the shortfall in the 1998 policies. So the money to fund the additional assets that must be set aside to offset the newly strengthened reserves has to come from insurer capital or from revenue generated by new policies, leading to a potentially dramatic dip in profits for the year. The higher the percentage of loss expenses that remain outstanding under the old policies, the more additional assets the insurer needs to set aside. This compounding effect explains the dramatic accounting losses insurers experience at the start of a hard market.

The length of the tail has a similar effect in the other direction when insurers adjust their assumptions in a manner that reduces projected loss expenses. Not only will the insurer have lower projected loss expenses for new policies, but it can also release reserves set aside to pay

claims under the policies it already sold, leading to potentially significant profits during the year of the release.

B. *Traditional Economic Explanations: The Fundamentals, Asymmetric Information, and Capacity Constraint*[21]

Thus far, the explanation of "cost" makes it clear that liability insurance pricing and reserving is an uncertain business[22] and that seemingly small changes in loss expense assumptions can lead to large changes in reserving. This uncertainty and reserve compounding alone, however, does not explain the cyclical pattern of insurance pricing and reserving. All by itself, uncertainty would be expected to produce a pattern of pricing and reserving that looks something like the array of darts around a bull's eye, not a pattern of darts clustered first to the left of the bull's eye and then to the right. Moreover, the compounding effect that new assumptions have on reserves should not produce correspondingly compounded changes in insurance pricing, because prices in a competitive market should be set at the amount needed to cover future loss expenses, without regard to insurers' profit and loss under past policies.

Economists begin their explanations of the underwriting cycle with what they refer to as the following "fundamentals" of insurance pricing: underwriting and loss expenses; the degree of uncertainty about those expenses; the length of the tail; the interest rate that can be earned on reserves (a proxy for actual investment returns); and the cost of holding capital.[23] These are the "fundamentals" of insurance pricing because, taken together, they constitute the cost of providing insurance. Because these fundamentals cannot explain many aspects of the underwriting cycle, however, economists have looked to additional factors to understand the cycle. The most widely cited addi-

21. The analysis in this section is heavily indebted to the review of the underwriting cycle literature in Scott E. Harrington, *Tort Liability, Insurance Rates, and the Insurance Cycle*, *in* BROOKINGS-WHARTON PAPERS ON FINANCIAL SERVICES: 2004 (Robert E. Liton & Richard Herring eds., 2004). Professor Harrington should not be held responsible for my treatment of the economic literature.

22. *Cf.* RICHARD ERICSON & AARON DOYLE, UNCERTAIN BUSINESS: RISK, INSURANCE, AND THE LIMITS OF KNOWLEDGE (2004) (documenting the very high degree of uncertainty in many lines of insurance).

23. *See also generally* J. DAVID CUMMINS ET AL., CYCLES AND CRISES IN PROPERTY/CASUALTY INSURANCE: CAUSES AND IMPLICATIONS FOR PUBLIC POLICY (Scott E. Harrington & Robert W. Klein eds., 1991); Harrington, *supra* note 21, at 3; Scott E. Harrington & Greg Niehaus, *Volatility and Underwriting Cycles*, *in* THE HANDBOOK OF INSURANCE 1 (Georges Dionne ed., 2000). As reflected in Figure 1, there is a relatively long period between the time that the premium is paid and the time that claims are paid in medical malpractice insurance. Thus, interest earned on investments is an important part of medical malpractice insurance revenue. Declining investment returns lead to premium increases. R

tional factors include "capacity constraint,"[24] and "asymmetric information."[25] In addition, some economists have begun to take more seriously the behavioral and institutional explanations preferred by industry insiders.[26]

With regard to all these explanations, it is worth keeping in mind the cautionary observations of Emilio Venezian, author of one of the more significant articles on the insurance underwriting cycle:

> Reality, however, is much more complex. Ratemaking methods change from time to time; the economy goes through periodic changes and occasional convulsions. Short of developing a general model of insurance in a dynamic economy, it is impossible to prove, in any sense of that word, that a particular process (such as ratemaking or response to changing interest rates, unanticipated changes in interest rates, or changes in other sectors of the economic, regulatory, or managerial environment) contributes to the cycle. In this context, if a particular process is plausible and leads to predicted cyclical characteristics similar to those that are observed, it seems reasonable to infer that the process may contribute to the cycle.[27]

In that spirit, the goal of the discussion that follows is not to provide a definitive explanation of the causes of the liability underwriting cycle, but rather to evaluate potential contributing factors in order to develop a workable understanding that can inform policy debates regarding medical malpractice and other kinds of liability.

1. Loss Costs, Per Se, Do Not Explain the Cycle

The main problem with using cost factors to explain the underwriting cycle is that, with the exception of interest rates[28] and the related factor of capital costs, there is no exogenous explanation for any cycles in those cost factors. While there are cycles in insurers' loss expense projections, these cycles are products of the insurance industry itself, not of something outside. Surprisingly, this point has not re-

24. *See* discussion on capacity constraint *infra* Part II.B.5. *See generally, e.g.*, Anne Gron, *Capacity Constraints and Cycles in Property-Casualty Insurance Markets*, 25 RAND J. ECON. 110 (1994) [hereinafter Gron, *Capacity Constraints*]; Anne Gron, *Evidence of Capacity Constraints in Insurance Markets*, 37 J.L. & ECON. 349 (1994) [hereinafter Gron, *Evidence*]; Ralph A. Winter, *The Dynamics of Competitive Insurance Markets*, 3 J. FIN. INTERMEDIATION 379 (1994). *See also* review of this literature in Harrington, *supra* note 21, at 13–16. R

25. *See* discussion on asymmetric information *infra* Part II.B.4. *See generally, e.g.*, Neil A. Doherty & Lisa L. Posey, *Availability Crises in Insurance Markets: Optimal Contracts with Asymmetric Information and Capacity Constraints*, 15 J. RISK & UNCERTAINTY 55 (1997).

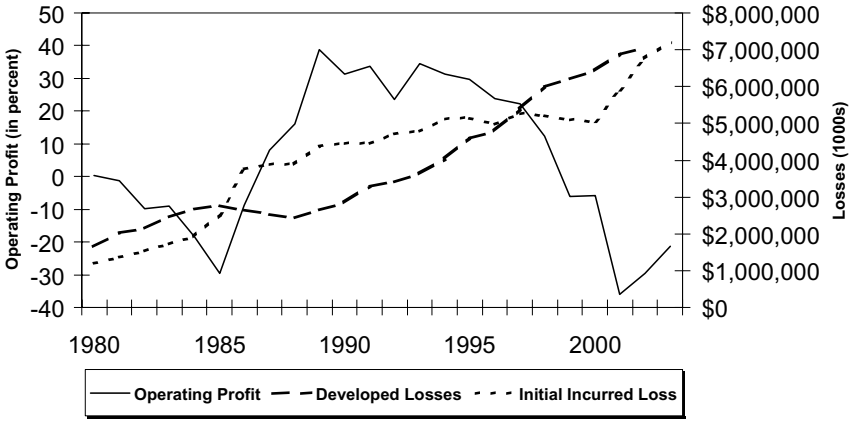
26. *See* discussion *infra* Part II.C. *See generally, e.g.*, Scott E. Harrington & Patricia M. Danzon, *Price Cutting in Liability Insurance Markets*, 67 J. BUS. 511 (1994).

27. Emilio C. Venzian, *Ratemaking Methods and Profit Cycles in Property and Liability Insurance*, 52 J. RISK & INS. 477, 479 (1985) (citations omitted).

28. *See* discussion *infra* Part II.B.2.

ceived the attention that it should in underwriting cycle literature, which tends to treat insurers' projections of costs as a "black box" that does not need to be opened.[29] Figure 2 below and the paragraphs that follow illustrate and explain this point.

FIGURE 2
U.S. MED MAL OPERATING PROFIT AND LOSS EXPERIENCE, 1980–2003



Note that there are three different lines plotted on Figure 2: the before-tax operating profit margin in U.S. medical malpractice insurance; the "developed" loss expenses on policies sold in a given year

29. For example, Harrington's recent analysis of the underwriting cycle states the following: "Unless reported losses are biased substantially upward, these simple calculations imply that growth in cost and declines in interest rates may account for the bulk of growth in premiums during the current hard market." Harrington, *supra* note 21, at 16. Having made that observation, he does not explore the possibility that the reported losses are biased upward. Indeed, he concludes his paper by stating that "there is little doubt that 'much' of the volatility in insurance premium rates—whether for general liability insurance or other types of coverage—is attributable to variation in the discounted value of expected claim costs." *Id.* at 30. In other words, he "explains" one insurance cycle by reference to another insurance cycle, thereby begging the following question: "What is it about the insurance industry that causes cycles in expected claims costs?" He offers a partial answer to this question by reference to the "winner's curse" that I discuss below. *See* discussion *infra* Part II.C. Similarly, although Professors Gron and Winton acknowledge the possibility of reserve management in order to "smooth" income (*see* Gron & Winton, *supra* note 20, at 121), they use "unexpected changes in insurer costs" as the primary explanation for the temporary capacity shortages and treat those "unexpected changes" as exogenous. *Id.* at 596. Finally, Professors Cummins and Danzon rely on the mid-1980s loss shock as the explanation for the onset of the subsequent hard market. *See generally* J. David Cummins & Patricia M. Danzon, *Price, Financial Quality, and Capital Flows in Insurance Markets*, 6 J. FIN. INTERMEDIATION 3 (1997). For an important exception to the general tendency to treat insurer cost projections as a black box, see David Bradford & Kyle Logue, *The Influence of Income Tax Rules on Insurance Reserves*, *in* THE FINANCING OF CATASTROPHE RISK 275 (Kenneth A. Froot ed., 1999).

(as calculated ten years after the policies were sold, or as of the end of 2003, whichever is earlier); and the "initial incurred" loss expenses on policies sold in a given year (i.e., the predicted losses reported at the end of the year the policies were sold).[30]

The first line to focus on is the solid line showing the before-tax operating profit margins in U.S. medical malpractice insurance from 1980 to 2003.[31] This line should be read using the percent vertical axis on the left side of Figure 2, together with the horizontal axis showing the year. This line depicts the well known features of the underwriting cycle: a profit valley in the final years of both the 1980s and 1990s soft markets, followed soon after by a profit peak. By 2003, the market had passed the profit valley, and was on an upward trend.

The second line to focus on is the dashed line showing the developed accident year loss expense. This line should be read using the $1000s vertical axis on the right side of Figure 2, together with the horizontal axis showing the year. This "developed" accident year loss expense line reflects the total of paid claims and remaining incurred loss expenses as of ten years after the policies were sold,[32] and, for policies sold since 1994, the total of paid claims and incurred loss expenses as of the end of 2003. As reflected in Figure 1 earlier, over ninety percent of claim payments are made within ten years after the policy year; thus, the developed loss expenses for the years 1994 and earlier represented on Figure 2 come close to the actual loss expense experience. The line becomes increasingly less "developed" the closer it gets to 2003. The developed loss expense line reflects a slow but steady increase in medical malpractice loss expenses over the indi-

30. Initial incurred loss and developed loss data are from A.M. Best Co., Aggregates & Averages Property/Casualty United States & Canada, Schedule P, Part 1F, §§ 1–2 (1985 and 2004 eds.). Where there were differences between the figures provided by different editions, I used the latest edition. Operating profit data is from *id.* (the "operating profit" can be computed from the "overall operating ratio" as follows: *100 – overall operating ratio = operating profit*).

31. The operating profit margin is the sum of the investment profit margin and the underwriting profit margin. The investment profit margin is the sum of the investment income plus capital gains realized during the year expressed as a percentage of the premiums earned during the year ((*income* + *gains*) ÷ *premium* × *100%*). The underwriting profit margin is the sum of the premium earned during the year minus the underwriting and loss expenses incurred during the year, expressed as a percentage of the earned premium ((*premium* – *expenses*) ÷ *premium* × *100%*). The "loss expenses incurred" during the year include all of the losses incurred on policies sold in that year (paid claims plus posted reserves) plus any revisions in reported incurred losses for earlier years. *See generally* Harrington, *supra* note 21. The inclusion of these revisions means that reserve strengthening reduces profit during the year of strengthening while a reserve release increases profit during the year of the release. **R**

32. I selected ten years because *Best's Aggregates and Averages* separately reports losses by policy year only for ten years after the policy year. *See, e.g.*, A.M. Best Co., *supra* note 7. **R**

cated years, with the exception of a relatively flat period from 1986 to 1989 that seems most likely to be the result of a reduction in supply of insurance sold during the mid-1980s hard market (when deductibles were increased and limits rationed) as well as the mid-1980s tort reforms.[33]

The final line to focus on is the dotted line showing the initially reported accident year loss expenses. This line also should be read using the $1000s vertical axis on the right side, together with the horizontal axis showing the year. The "initial incurred" accident year loss expense amounts reflect the *predicted* loss expenses for the policies sold in the indicated year, as valued at the end of the year in which the policies were sold. Notice how the initial incurred loss expenses jump dramatically at the low point in the profit cycle (1985 and 2001) and grow very slowly at all other times. Also notice the relationship between the initial incurred loss expense line and the developed loss expense line. The initial incurred loss expense line remains above the developed loss expense line following the hard market "jump," indicating that insurers set their initial reserves at a higher level than needed to pay claims. Toward the end of the soft market, the initial incurred loss expense line crosses the developed loss expense line, indicating that insurers set their initial reserves at a lower level than needed to pay claims, until the next hard market "jump" in initial incurred loss expenses. As Figure 2 helps illustrate, the hard market jumps in initial incurred loss expenses are part of the underwriting cycle, not an explanation for the cycle.

Figure 3 presents a second graphical picture of the underwriting cycle. Figure 3 shows the yearly change in initial incurred loss and in paid claims, controlling for medical inflation and using the operating profit as a point of reference.[34] As we already know, there is a close

33. *See* Patricia H. Born et al., *The Distribution of the Insurance Market Effects of Tort Liability Reforms*, 1998 BROOKINGS PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS 55–105 (1998); W. Kip Viscusi & Patricia H. Born, *Medical Malpractice Insurance in the Wake of Liability Reform*, 24 J. LEGAL STUD. 463, 484 (1995). It is worth noting that a careful study of the reduction in developed losses that was attributable to the hard market reduction in supply would be a valuable contribution to the underwriting cycle literature because the reduction in quantity has previously been regarded as unobservable. *See* Gron, *Evidence*, *supra* note 24, at 351; Ralph A. Winter, Discussion of Scott Harrington's Paper 1 (Jan. 8–9, 2004) (unpublished paper from the Brookings Conference on Public Policy Issues Confronting the Insurance Industry, on file with author) (noting that the price and quantity of insurance are unobservable from the publicly available data because that data reports only the revenue). Using developed losses as a proxy for the quantity of insurance sold (controlling for the effects of tort reform) could be a useful way of comparing the price of insurance over time. **R**

34. Unfortunately, *Best's Aggregates and Averages* did not report paid claim data for medical liability insurance for years earlier than 1989. *See generally, e.g.*, A.M. BEST CO., *supra* note 7. For medical inflation, I computed an annual rate using Bureau of Labor Statistics annual Medi- **R**

relationship between the profit cycle and changes in initial incurred loss. For most years, other than hard market years, initial incurred losses increase at or below the rate of medical inflation. By contrast, there is not a close relationship between the profit cycle and paid claims. For paid claims there is a comparatively erratic upward trend and the years of rapid "real" increases in the rate of change do not occur in tandem with the underwriting cycle.[35] Upon reflection, the closer connection between incurred losses and the cycle makes sense. Incurred losses represent predictions about the future and, as will be discussed in greater detail below,[36] predictions about future costs are more responsive to short term institutional and behavioral dynamics than actual money paid to claimants and lawyers.

2. *Interest Rates Help Explain Shifts in the Direction and the Amplitude of the Cycle*

In contrast to loss expenses, fluctuations in interest rates and other forms of investment returns appear to provide a partial explanation for the underwriting cycle.[37] The insurance market is not large relative to the economy as a whole;[38] thus, changes in interest rates that are correlated with the underwriting cycle seem more likely to be a "cause" of the cycle than the reverse. This causal relationship makes sense because interest rates directly affect the investment profit component of the operating profit. The higher the interest rate, the fewer assets needed today to pay a claim five years from now. Similarly, the lower the interest rate, the more assets needed today. As a result, changes in interest rates can have an effect on insurance pricing that is

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cal Care Consumer Price Index reading. *See* BUREAU OF LABOR STATISTICS, U.S. DEP'T OF LABOR, CONSUMER PRICE INDEX—ALL URBAN CONSUMERS MEDICAL CARE SERVICES (2004).

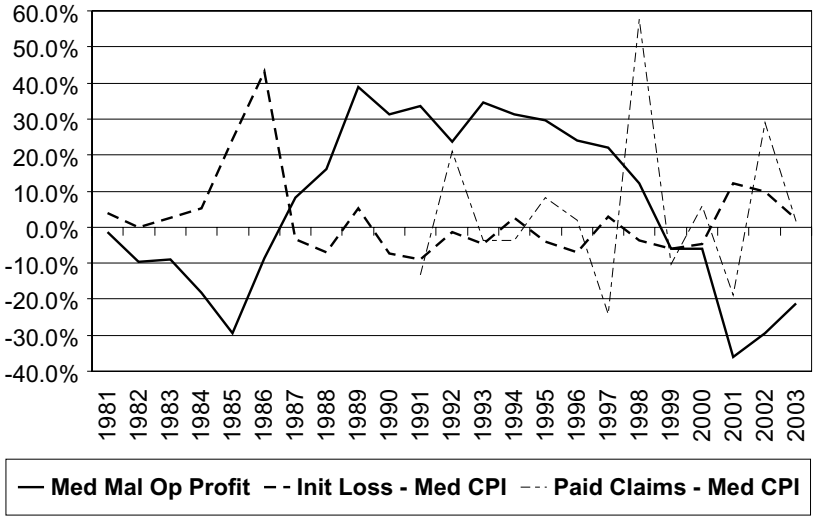
35. Because I have only a few years of data on paid claims, I cannot make a detailed analysis. Nevertheless, I predict that there is *some* connection between paid claims and the profit cycle due to changes in underwriting standards and prices over the course of the cycle. During a hard market, consumers tend to purchase policies with higher deductibles and lower limits than during a soft market. We can think of a hard market as a tightening of the "spigot" that controls the supply of insurance and a soft market as a loosening of that spigot. The tightening and loosening would seem to have a lagged effect on claim payments. This would be a worthy question for research.

36. *See* discussion *infra* Part II.C.

37. The U.S. insurance literature commonly treats interest rates as a proxy for investment return rates. As long as assets are principally invested in bonds, this practice seems sound. The company Swiss Re reports that European insurers tend to be more heavily invested in equities, with the result that interest rates may not be a good proxy for the investment return rate. *See* Kurt Karl et al., *Capital Markets and Insurance Cycles*, 4 J. RISK FIN. 40, 43 (2003).

38. In 2002, the insurance industry accounted for 2.4% of the GDP. Brian C. Moyer et al., *Improved Annual Industry Accounts for 1998–2003* (June 2004), *available at* http://www.bea.doc.gov/bea/ARTICLES/2004/06June/0604GDP_Industry.pdf.

FIGURE 3
U.S. CHANGE IN MED MAL INITIAL INCURRED LOSS, CONTROLLING FOR MEDICAL INFLATION, 1980–2002



similar to changes in assumptions about future loss expenses.[39] Unlike changes in loss expenses, however, interest rates affect not only the size of insurers' liabilities, but also the value of insurers' assets. A decline in the interest rate simultaneously increases the amount of funds that must be set aside to pay future claims and decreases the value of the assets that the insurer previously has set aside to pay those claims.[40]

As Professor Harrington and others have pointed out, the recent hard market and the hard market of the mid-1980s followed a significant decline in interest rates.[41] On the other hand, not every shift in

39. *See* Robert T. McGee, *The Cycle in Property/Casualty Insurance*, 11 FED. RES. BANK N.Y. Q. REV. 22 (1986) (describing impact of interest rates on property/casualty insurance). In many states, medical malpractice is subject to an exception to the statutory accounting rule that insurers are not supposed to discount reserves in most lines of insurance to take future investment returns into account. *See, e.g.*, OKLA. ANN. STAT. tit. 36, § 1509.C.1 (West Supp. 2004). Thus, interest rate changes will have an effect on both reserves and investment income in the medical malpractice line.

40. *See* Neil A. Doherty & James R. Garven, *Insurance Cycles: Interest Rates and the Capacity Constraint Model*, 68 J. BUS. 383, 386 (2001). The practice of buying bonds and holding them to maturity limits the compounding effect of changes in interest rates because the returns on the bonds purchased when the policies were sold are already locked in. If I have adequately matched my bond portfolio to my projected claim payment stream, a change in interest rates today need not affect my reserving under policies sold in the past. Doherty and Garven note that property-liability insurers "do not manage their assets and liabilities in a manner that minimizes the interest rate sensitivity of their equity." *Id.* at 402.

41. *See* Harrington, *supra* note 21, at 15. R

the direction of interest rates leads to a shift in the direction of the insurance cycle. For example, the late 1994 peak in long-term interest rates did not produce a hard market, and long-term interest rates declined almost as significantly from 1994 to 1998 as they did during the 2000 to 2003 period.[42] Moreover, even when the cycle shifts in response to a decline in interest rates, the decline in investment returns explains only part of the price increases.[43] Nevertheless, the consensus appears to be that interest rates do provide an important, if incomplete, explanation for the underwriting cycle.[44]

3. The Length of the Tail and Other Factors that Affect Uncertainty About Loss Costs Help Explain the Amplitude of the Cycle

Although interest rates are the only cost factor that help explain why there is a cycle in insurance prices, some of the other cost factors help explain the "amplitude" of the cycle. Two important factors are the length of the tail and the degree of uncertainty about loss costs.

The length of the tail affects the amplitude of the cycle for the reason discussed above: the longer the tail is, the greater the risk overhang will be and, therefore, the greater the effect that changed assumptions will have on insurance reserving and profits.[45] Sharply increased projections of future loss expenses are a defining characteristic of the onset of a hard market in liability insurance. The longer the tail, the greater the compounding effect of the newly pessimistic projections and, thus, the deeper the losses (in the profit and loss sense) at the start of the hard market. As Professors Gron and Win-

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42. *See* FED. RESERVE BANK OF ST. LOUIS, MONETARY TRENDS 9 (Aug. 2004), *available at* http://research.stlouisfed.org/publications/mt/20040801/mtpub.pdf (showing monetary trends from 1987–2004). As Kyle Logue has explained, there are similar problems in attributing the mid-1980s hard market exclusively to interest rates:

> Fluctuations in interest rates alone, however, do not fully explain the crisis. First, the facts simply do not match the theory. Interest rates rose sharply during the late 1970s and peaked in 1981. This was followed in 1982 and again in 1983 by a substantial drop in rates. In 1984, interest rates *increased* modestly and then declined again in 1985 and 1986. If premium movements were inversely related to and primarily determined by interest rate movements, it is difficult to explain why the property-casualty market remained soft (i.e., why premiums remained low) until late 1984 and early 1985.

Kyle D. Logue, *Toward a Tax-Based Explanation of the Liability Insurance Crisis*, 82 VA. L. REV. 895, 909 (1996) (footnotes omitted).

43. *See* Harrington, *supra* note 21, at 14–17. **R**

44. *See id*. *See also* Doherty & Garven, *supra* note 40, at 385 (reporting that interest rates explain long-term relationships between premiums and costs but do not adequately explain the periodic hard markets); Martin F. Grace & Julie L. Hotchkiss, *External Impacts on the Property-Liability Insurance Cycle*, 62 J. RISK & INS. 738 (1995). *But see* McGee, *supra* note 39, at 22 (attributing a close connection between interest rate cycles and the property/casualty insurance cycle). **R**

45. *See supra* text accompanying note 20. **R**

ton have suggested, this compounding effect can lead an insurer to cut back dramatically on future sales in a particular line of insurance as the insurer attempts to balance its portfolio of risks.[46] A long tail has a similar compounding effect on reserve releases as assumptions about future loss expenses or investment gains become more optimistic during the soft phase of the underwriting cycle. Of course, it is this cycle between pessimistic and optimistic assumptions about future losses that none of the factors addressed so far have helped us to understand.

The cost factor "degree of uncertainty about loss expenses" is a general category for other factors, besides the length of the tail, that affect insurers' confidence regarding projections of future loss expenses. The main point of my Geneva Lecture, *Insuring Liability Risks*, was to develop a conceptual framework for describing and comparing the kinds of uncertainties faced by liability insurers.[47] Figure 4 presents this framework in schematic form. For present purposes, the details of these "development risks" are not important. It is sufficient to know that various kinds of uncertainty about future loss expenses can be described and compared. As I will discuss in Part III, the uncertainties associated with these various kinds of development risks help explain why the underwriting cycle has such a dramatic effect on medical malpractice insurance prices as compared to automobile liability insurance prices.

As with uncertainty generally, these development risks do not explain the existence of the underwriting cycle. Returning to the dartboard metaphor, greater development risks would be expected to increase the spread of the darts around the bull's eye, but would not be expected to increase the likelihood that all the darts would go to the left of a target for a period and then for another period to the right of the target. Given the existence of the underwriting cycle, however, greater development risks lead to wider swings in that cycle because the behavioral and institutional forces[48] place a cyclical pressure on predictions about the future.[49] The more uncertain the future is, the more room for this pressure to affect those predictions.

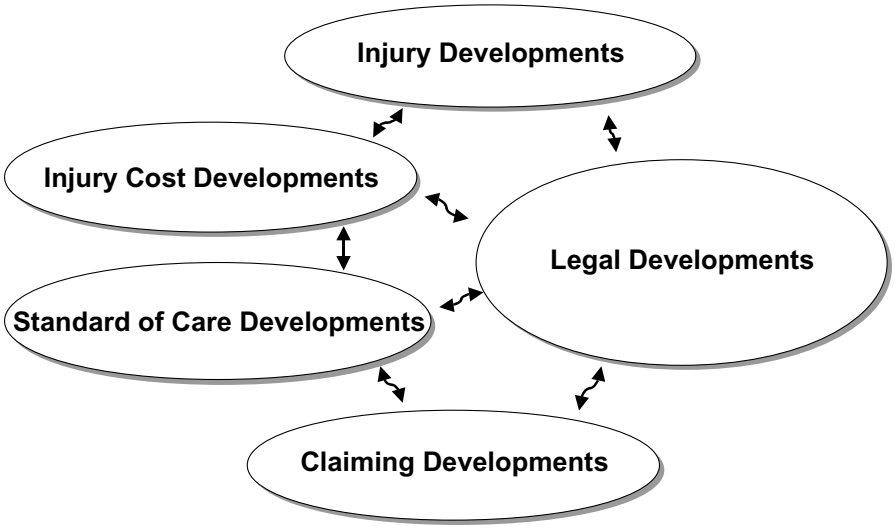
46. *See generally* Gron & Winton, *supra* note 20. One analogy would be to a retirement account seeking to maintain half of the investment in stocks; a rising stock market results in sale of stock and purchase of other kinds of assets in order to maintain the desired balance of risk in the portfolio. **R**

47. *See generally* Baker, *supra* note 9. **R**

48. *See* discussion on behavioral and institutional forces *infra* Part II.C.

49. *See infra* text accompanying notes 81–99. **R**

FIGURE 4
LIABILITY DEVELOPMENTS RISK



4. The Role of Asymmetric Information

Asymmetric information is a default explanation for almost any insurance-related phenomenon, and the insurance underwriting cycle is no exception.[50] The twin asymmetric information problems affecting insurance transactions are "adverse selection" and "moral hazard."

"Adverse selection" refers to the problem created when only one party to a transaction has private information about the quality or risk associated with a transaction, in a situation in which the other party is choosing among a range of potential contracting parties.[51] Because the party without the information cannot assess the quality (risk level) of any particular contracting partner, it really has no choice but to offer a price that is based on the average quality/risk level in the market as a whole. This price is very appealing to people who privately know that they are offering a low-quality/high-risk transaction, but not very appealing to people who privately know that they are offering a high-quality/low-risk transaction. In this situation, the low-quality/high-risk people tend to deal, while the high-quality/low-risk people tend not to deal, with the result that the market is dominated

50. *See generally, e.g.*, George L. Priest, *The Current Insurance Crisis*, 96 YALE L.J. 1521 (1987).

51. *See generally* Tom Baker, *Containing the Promise of Insurance: Adverse Selection and Risk Classification*, *in* RISK & MORALITY 258 (Richard V. Ericson & Aaron Doyle eds., 2003).

by low-quality/high-risk transactions.[52] I stress "privately," because an insurer that is able to distinguish between low and high risks can easily prevent adverse selection by offering insureds different prices. This explains why adverse selection is said to be a problem of asymmetric *information*.

In the insurance context, observers are concerned about adverse selection "spirals" which can occur when insurers raise prices to reflect the increased risk level of the pool, which drives low-risk insureds out of the pool and leads insurers to increase prices further, thereby driving more low-risk insureds out of the pool, and so on.[53] Such spirals can occur, however, only when the insurer either is not technically able to assess the risks of applicants who themselves have reliable information about their risk, or is not permitted to make distinctions among applicants who themselves have reliable information about their risk.[54]

Because the mid-1980s hard market was understood to follow a period in which the tort system became fundamentally more risky,[55] some observers concluded that the hard market resulted from, or was exacerbated by, decisions by low-risk insureds to opt out of liability insurance, setting off an adverse selection spiral.[56] There are serious problems with this account, however, even assuming it is based on an accurate judgment about tort law developments.[57] To cause an adverse selection spiral, it is not enough that the expansion of tort liability made some entities more risky. The entities that became more risky were aware of their increased risk, and able to conceal that information from liability insurers. Especially in a period of rapid change in liability law, liability insurers would tend to be more aware than

52. *See* George Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 489–90 (1970).

53. *See* Priest, *supra* note 50, at 1541–42. **R**

54. *See generally* Peter Siegelman, *Adverse Selection in Insurance Markets: An Exaggerated Threat*, 113 YALE L.J. 1223 (2004).

55. *See generally, e.g.*, George L. Priest, *The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law*, 14 J. LEGAL STUD. 461 (1985); George L. Priest, *Modern Tort Law and Its Reform*, 22 VAL. U. L. REV. 1 (1987).

56. *See* Priest, *supra* note 50, at 1541–42. **R**

57. Gary Schwartz has persuasively argued that the claimed shift to strict "enterprise liability" never happened. *See generally* Gary T. Schwartz, *The Beginning and the Possible End of the Rise of Modern American Tort Law*, 26 GA. L. REV. 601 (1992); Gary T. Schwartz, *The Vitality of Negligence and the Ethics of Strict Liability*, 15 GA. L. REV. 963 (1981). With that said, however, there is little doubt that tort liability did increase over the period, and, although the mechanism was expansion of negligence liability rather than the adoption of a new liability framework, increased tort liability is broadly consistent with the risk spreading and loss preventing goals of enterprise liability, despite tort law's steadfast refusal to jettison fault. *See* Robert L. Rabin, *Some Thoughts on the Ideology of Enterprise Liability*, 55 MD. L. REV. 1190, 1193 (1996).

insureds about the direction and impact of legal change. Moreover, in a true adverse selection spiral, the liability insurance market should contract, not only in terms of the number of entities insured (which does occur during hard markets) but also in terms of the total premiums paid (which does not occur in hard markets). In fact, the total premiums paid in each of the most recent hard markets increased significantly.[58] For these reasons, it seems unlikely that adverse selection has played an important role in the underwriting cycle.[59]

"Moral hazard" provides a somewhat more promising explanation, at least for the soft market phase of the underwriting cycle. "Moral hazard" refers to the reduced incentive to avoid loss that can accompany insurance.[60] There are two kinds of "insurance" that protect market participants from the losses that may follow from the below-cost pricing that takes place toward the end of a soft market.[61] One form of "insurance" is the limited liability of insurance companies, which protects shareholders from losing more than the value of their shares. There is some evidence that this downside protection may lead insurance companies with fewer assets to take the risky step of selling insurance below cost in order to increase market share with the hope that they will survive long enough to reap the benefits of this market share in the eventual hard market.[62] The second form of "insurance" that protects market participants from the consequences of below-cost pricing is the network of state insurance guaranty funds.[63] Depending on the kind of loss, the insurance guaranty funds pay all or a substantial portion of the insolvent insurer's obligations.[64] This second form of insurance reduces the incentive of policyholders to assess whether the company charging the low price will be solvent at the point of claim.

58. *See* Winter, *supra* note 33, at 3. **R**

59. Another objection to Professor Priest's adverse selection account is that the gradual expansion of tort liability in the 1960–85 period may have raised risk generally within existing risk classifications and, thus, did not create the increased risk heterogeneity that is necessary for adverse selection to have had the claimed effect. Discussions with Seth Chandler sharpened my appreciation of this point.

60. *See generally* CAROL A. HEIMER, REACTIVE RISK AND RATIONAL ACTION: MANAGING MORAL HAZARD IN INSURANCE RATES (1985); Tom Baker, *On the Genealogy of Moral Hazard*, 75 TEX. L. REV. 237 (1996).

61. *See* Harrington & Danzon, *supra* note 26, at 512. **R**

62. *Id*. at 519.

63. *See generally* James G. Bohn & Brian J. Hall, *The Costs of Insurance Company Failures*, *in* THE ECONOMICS OF PROPERTY-CASUALTY INSURANCE 139 (David F. Bradford ed., 1998).

64. Medical malpractice insurance would be subject to the general liability insurance claim limit of $300,000 in the states that have adopted the NAIC Model Property/Casualty Guarantee Fund Act. *See* POST-ASSESSMENT PROPERTY AND LIABILITY INSURANCE GUARANTY ASSOCIATION MODEL ACT § 8(A)(1)(a)(iii) (1996) (on file with the DePaul Law Review).

Given the dynamics of the insurance market discussed below,[65] low prices by one company can lead to low prices by others, prolonging the soft market. Thus, the moral hazard of limited liability and state insurance guaranty funds may help explain price cutting in the soft market phase of the cycle.

5. *Capacity Constraint Provides a Partial Explanation, Particularly for Hard Markets*

The leading additional explanation for the underwriting cycle is "capacity constraint."[66] "Capacity" refers to the amount of insurance that an insurer, or the market as a whole, can offer at one time, and is a function of the capital held by the insurer or the market. Capacity is "constrained" because there are transaction costs associated with raising new capital, with the result that internal capital enjoys a cost advantage over external capital. The existence of the capacity constraint is consistent with reports of people in the insurance business, and it is supported by econometric analysis.[67]

Economists point to two main effects of the capacity constraint, both of which are consistent with the observed characteristics of the underwriting cycle. First, because external capital is more expensive than internal capital, a sudden loss of capital will produce a short-term shift in the supply curve, a drop in the quantity of insurance that is sold, and a sharp rise in insurance prices and profits, followed slowly by increased capitalization.[68] Second, because there is a cost advantage to internal capital, insurers will be reluctant to release capital.[69]

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65. *See* discussion *infra* Part II.C.

66. *See* Winter, *supra* note 24, at 380–82. **R**

67. *See, e.g.*, Seungmook Choi et al., *The Property/Liability Insurance Cycle: A Comparison of Alternative Models*, 68 S. ECON. J. 530, 531 (2002) (reviewing prior literature and testing capacity constraint theory against alternative models of the insurance market). *See also* Kenneth A. Froot, *Introduction* to THE FINANCING OF CATASTROPHE RISK, *supra* note 29, at 8 (discussing claim by Warren Buffet that the size of Berkshire Hathaway gives that company a competitive advantage in the insurance market, a claim that is inconsistent with traditional economic understanding of capital markets but consistent with capacity constraint). **R**

68. *See*, *e.g.*, Gron, *Capacity Constraints*, *supra* note 24, at 112. **R**

69. Ralph A. Winter provides the following explanations for insurer inability, and possibly reluctance, to release capital:

> A . . . key feature of the property-liability insurance market is that internal equity is less costly than external equity. By this I mean that a cost is incurred in the "round trip" of paying out a substantial amount of retained earnings in cash to shareholders and then immediately raising the same amount through the issuance of equity. . . . One explanation for this difference in costs is the superiority of information of firm managers over outside suppliers of equity. The argument is that issuing external equity signals that expected profits are relatively low. A second advantage to internal equity derives from the "trapped equity effect" of dividend taxation. Finally, an industry-specific regulation

Capacity constraint is very important to the traditional economic understanding of the underwriting cycle because it helps explain why prices can rise so sharply when there is relatively little change in the underlying pattern of claim payments.[70] In a competitive market, insurers should not be able to raise prices today to make up for past losses. If they did, new insurers would enter the market and offer a lower price based solely on the cost of providing the insurance policies of today. In fact, new capital pours into insurance during a hard market, but not immediately.[71] The fact that capacity is constrained gives insurers "room" to raise prices beyond what is needed to pay the claims of today, and thereby recover for the accounting losses that resulted from inadequate pricing and reserving during the later years of the soft market. This does not mean that the risk overhang from the soft market dictates the prices of the hard market, but rather that the prices that can be set during the hard market appear to be sufficient to allow most insurers to manage that risk overhang.

Something approaching a consensus appears in economics literature, that the capacity constraint explanation offers a substantial improvement on explanations that rely purely on the fundamentals (i.e., costs, interest rates).[72] Yet it is far from a complete explanation for at least two reasons.

First, the capacity constraint explanation fits descriptively much better with the sudden shift to a highly profitable hard market than it does with the slow descent to the unprofitable end of the soft market.[73] The fact that an insurer wants to reserve capital to get ready for an eventual hard market (because internal capital is cheaper than external capital) does not explain why the insurer sells insurance at

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> discourages the exit of equity from the market: insurers are constrained in most states against distributing more than 10% of net worth to shareholders in any year.

Winter, *supra* note 24, at 382–83 (footnotes omitted). **R**

70. Correspondence with Ralph A. Winter sharpened my appreciation of this point. *See* Letter from Ralph A. Winter, Canada Research Chair in Business Economics and Policy, to Tom Baker, Director of Insurance Law Center at University of Connecticut School of Law (Mar. 17, 2004) (on file with the author and the DePaul Law Review).

71. The dramatic amount of capital raised in Bermuda during the recent hard market is a demonstration of this competitive dynamic. One of the selling points of the new Bermuda reinsurers was that, because they were new, they did not have any "legacy" problems. *See, e.g.*, Douglas McLeod, *Face of Market Is Changing as Companies Exit, Enter*, BUS. INS., Nov. 10, 2003, at 10.

72. *See* Harrington, *supra* note 21, at 17–21 (citing, e.g., Winter, Gron, and Froot). *See generally* Choi et al., *supra* note 67. *But see* Cummins & Danzon, *supra* note 29 (concluding that price increases during the mid-80s hard market resulted from capital inflows, rather than the reverse). **R** **R**

73. *See* Harrington & Danzon, *supra* note 26, at 512. **R**

prices that significantly impair internal capital in the meantime.[74] Second, the capacity constraint explanation, like the traditional "fundamentals" explanation, slips too easily into treating sudden changes in expected loss costs as an exogenous *cause* of the cycle, rather than an aspect of the cycle that needs to be explained. For example, some economists point to a loss cost "shock" that reduced property casualty insurance capacity at the onset of both the 1970s and 1980s hard market.[75] Yet, as socio-legal research has demonstrated (and as Figure 2 confirms from the 1980s and 1990s period), there were no sudden changes in the underlying liability litigation.[76] Instead, there were slow but steady increases in liability claiming costs. The shock was in initial incurred losses, not paid claim dollars. For that reason, the better understanding would seem to be that the shock was *part* of the cycle, not a *cause* of it.

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74. It is, of course, an empirical question whether the rate of capacity destruction during soft markets is greater than the difference between internal and external capacity. Because of the income "smoothing" that is taking place simultaneously, this question may well be unanswerable.

75. *See, e.g.*, Winter, *supra* note 24, at 406–07. *See also* Cummins & Danzon, *supra* note 29 (disagreeing with Winter and Gron regarding the effect of the capacity constraint, and relying strongly on the loss cost shock as an exogenous event). *Cf.* U.S. DEP'T OF JUSTICE, REPORT OF TORT POLICY WORKING GROUP ON THE CAUSES, EXTENT AND POLICY IMPLICATIONS OF THE CURRENT CRISIS IN INSURANCE AVAILABILITY AND AFFORDABILITY 1, 6–15 (1986) (attributing the mid-1980s hard market to a sudden sharp increase in tort litigation). **R**

76. The litigation explosion myth has two main parts: (1) the number of tort claims has increased dramatically out of proportion to the increase in population, and (2) the size of tort payments in individual cases has increased out of proportion to the underlying injury costs. Neither part is supported by empirical research. For research debunking part one, see, for example, Marc Galanter, *Real World Torts: An Antidote to Anecdote*, 55 MD. L. REV. 1093 (1996) (showing, for example, that tort filings are declining in state courts and that the increase in federal court tort filings in the 1980s was attributable to asbestos claims). *See also* BRIAN J. OSTROM & NEAL B. KAUDER, NAT'L CTR. FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 1993: A NATIONAL PERSPECTIVE FROM THE COURT STATISTICS PROJECT 23 (1995) (demonstrating that the short-term rise in state court tort filings in mid-1980s was attributable to automobile claims). For research debunking part two, see, for example, Seth A. Seabury et al., *Forty Years of Civil Jury Verdicts*, 1 J. EMPIRICAL LEG. STUD. 1, 3 (2004) (stating that "[n]ot only do we show that real average awards have grown by less than real income over the 40 years in our sample, we also find that essentially all of this growth can be explained by changes in observable case characteristics and claimed economic losses (particularly claimed medical costs)"). *See also* Eric Helland & Alexander Tabarrok, *Runaway Judges? Selection Effects and the Jury*, 16 J.L. ECON. & ORG. 306 (2000); Charles Silver, *Does Civil Justice Cost Too Much?*, 80 TEX. L. REV. 2073 (2002). *Cf.* Evan Osborne, *Courts as Casinos? An Empirical Investigation of Randomness and Efficiency in Civil Litigation*, 28 J. LEG. STUD. 187 (1999). Even George L. Priest, who concluded that tort law changes produced the 1980s hard market, agreed that the raw increases in litigation activity and jury verdicts did not explain the extent of the price increases. *See* Priest, *supra* note 50, at 1533–34. Priest explained that "[n]o trial or settlement statistics . . . have shown increases that even remotely correspond to the increases in insurance premiums at multiples of four, five, ten, fifteen, and more over a period of a few months." *Id.* **R**

While capacity constraint seems likely to have exacerbated these hard markets, it does not provide a persuasive explanation for the necessary key ingredient: the preceding prolonged soft market. If premiums are less than needed to pay future claims, it is a certainty that premiums will have to rise eventually, and rise sharply in lines of insurance with substantial risk overhang. Once premiums are up, insurers can revise their loss reserves accordingly. Thus, the causal arrow does not necessarily point from sharply increased loss reserves to sharply increased prices. It may well point in the other direction—from increased prices to increased loss reserves, particularly in the case of insurers that entered the hard market in relatively strong financial condition. In other words, sudden increases in loss costs are an *effect* of the shift to the hard market rather than a *cause*.[77] And even when the causal arrow points from increased reserves to increased prices, the "cause" of the increased reserves is in large part endogenous (i.e., recognition of the fact that reserves had been too low in the past) and not a response to something new originating outside the industry.

The importance of the soft market trigger can be demonstrated by observing insurance prices following Hurricane Andrew in 1992. Hurricane Andrew came about as close as is possible to providing a truly exogenous shock to the capital position of the property casualty industry.[78] Yet, despite the fact that Andrew temporarily depressed property casualty insurer profits, it did not produce a broad hard market.[79] Why? Apparently because property casualty insurers were still in the

77. Ralph A. Winter offered the following observation in correspondence:

> If you, as an insurer, suddenly increase premiums by a huge amount for whatever underlying economic reasons, then there will be pressure on you to increase accounting reserves (1) to avoid income tax; and (2) to meet the pressures of rationalizing your premium increase through accounting costs. This pressure may come from policyholders; it may be there to avoid pressure from shareholders, who might wonder why last year's premiums were so low, if costs were the same as this year; it may come from regulators who may be perceived to keep an eye out for excessive premiums. With so much freedom in setting reserves, why *not* set them at a level that justifies the more fundamental price increases?

Ralph A. Winter, *supra* note 70, at 3. *Cf.* Mary Weiss, *A Multivariate Analysis of Loss Reserving Estimates in Property-Liability Insurers*, 52 J. Risk & Ins. 199 (1985) (discussing income "smoothing" by insurers), *cited in* Gron, *Capacity Constraints*, *supra* note 24, at 121 n.28. **R**

78. Although Hurricane Andrew certainly was endogenous, the earlier hurricane loss models were not; thus the "cause" of the capital shock was the combination of Hurricane Andrew and the models.

79. Except, briefly, in the catastrophic reinsurance market, which is disproportionately exposed to natural disasters. *See* Gron & Winton, *supra* note 20. *See also* Karl, *supra* note 37, at 40. **R**

fat years following a hard market.[80] The failure of the four hurricanes of 2004 to produce a broad, sharp rise in property insurance premiums is consistent with this explanation.

C. *Behavioral and Institutional Explanations*

As the discussion of capacity constraint highlighted, prolonged soft markets present the most significant challenge to rational actor accounts of the underwriting cycle. Given a soft market, an eventual shift to a hard market is inevitable because below-cost pricing eventually will destroy enough capacity to produce the effects of the capacity constraint. While it is difficult to pinpoint exactly what precipitates the shift, something eventually will, although not necessarily the same thing each time.[81] Once the shift occurs, capacity constraint and risk overhang go a long way toward explaining the otherwise puzzling combination of suddenly smaller quantity and higher prices at the bottoming out of the profit cycle. But capacity constraint and risk overhang do not persuasively explain what causes the soft markets that produce the hard markets.

1. *Industry Insider Accounts: Psychology and Institutions*

Industry insider accounts of the underwriting cycle consistently rank psychology, institutional incentives, and competitive behavior well ahead of interest rates or loss costs. The psychological accounts stress the emotions of greed and fear. Greed leads to the irrational competition, price cutting, and eventual capital erosion of the soft market.

80. It is quite interesting to note that liability insurance profits experienced a sharp drop at approximately the same time, also without producing a hard market. Harrington reports that this drop in liability profits was due to reserve strengthening on policies that were more than ten years old (presumably for asbestos and environmental liabilities). *See* Harrington, *supra* note 21 at 7, 14. Harrington speculates that this liability reserve strengthening did not produce a hard market because it did not indicate a long-term shift in loss costs (possibly because more recent policies exclude asbestos and environmental claims, though he did not offer that explanation). *Id*. I speculate that insurers chose that period to strengthen the old reserves because Hurricane Andrew provided a way for them to explain a temporary decline in profits and because Wall Street's focus on the future encourages publicly traded companies to report lots of bad news all at once, especially if that bad news can be explained as the result of unique events that do not impair future revenue streams. *See generally* Andrew T. Berry, *Comments on Aggregation: Some Unintended Consequences of Aggregative Disposition Procedures*, 31 SETON HALL L. REV. 920 (2001). R

81. *See generally, e.g.*, Logue, *supra* note 41 (persuasively explaining that changes in the taxation of insurer reserves may have been an important cause of the mid-1980s hard market). *Cf.* Gron, *Capacity Constraints*, *supra* note 24 (describing insurance cycles "as the result of slow adjustment to random shocks, rather than a phenomenon that repeats with a particular periodicity"). R

Once the bad news sinks in, fear takes over, and insurers react in the opposite direction.[82]

The institutional explanations stress senior management and Wall Street focus on "calendar year" results and the related practice of benchmarking performance in terms of current revenue and market share, rather than "accident year" results, together with the ebb and flow of bureaucratic power between revenue producers (sales and underwriting) and the gatekeepers of corporate profitability (actuarial and claims).[83] Using market share and revenue as benchmarks drives the focus on calendar year results down to underwriters. When the annual bonus depends on hitting revenue targets, underwriters will be loathe to turn away business because prices are too low.[84] Given the uncertainties involved in insurance pricing, this incentive structure cannot help but bias decisionmaking in favor of optimistic views about the future. Perhaps as a result, liability insurance industry folklore is full of stories about underwriters who "write and run," banking their

82. *See generally* Fitzpatrick, *supra* note 10. *Cf.* Dolan, *supra* note 1. **R**

83. Sean M. Fitzpatrick writes:

> [I]nsurance companies measure profitability from several viewpoints – most importantly from the perspectives of "accident year" and "calendar year" results. In an "accident year" analysis, losses are matched to premiums written in the year those losses arose. In "calendar year" analysis, however, losses incurred (that is, paid or reserved) in a given year are netted against premiums earned in that same year, irrespective of when the losses being paid first arose. Simplistically speaking, an underwriter or actuary will look to accident year results to determine how profitable a line of business has been, while a chief financial officer or a shareholder will look to calendar year results to determine how a company is doing from a purely financial perspective in the current period.
>
> Of course, it doesn't take our friend Warren Buffet to figure out that the two views may yield very different answers to the question: How are we doing? – depending on the growth characteristics of a book of business. For example, a company which is growing its premium base quickly can continue to report positive calendar year underwriting results – for a while anyway – even if its accident year results from prior years are deteriorating, because the old losses are being compared to the current periods' larger premium base. A company whose premium base is shrinking, on the other hand, will be saddled with untenable calendar year results even if its accident year results are improving. This creates a significant disincentive for companies to shrink their books of business even when that would seem to be the prudent course from a pure underwriting perspective, as if demands of investors for continuing revenue and earnings growth were not a sufficient disincentive.

Fitzpatrick, *supra* note 10, at 267–68 (footnotes omitted). **R**

84. Sean M. Fitzpatrick also states:

> [C]ompetition for revenue and market share . . . drives the day-to-day behavior of underwriters to a far greater degree than concerns with ultimate profitability. Underwriters – like everyone else in business – are motivated by (i) the desire for financial reward and (ii) fear of losing employment or opportunities for advancement. And, during all but the absolute peaks of the underwriting cycle, underwriters are evaluated according to the amount of premium they can generate.

Id. at 264.

bonuses and changing companies or divisions before credible accident year results come in.[85]

The emphasis on revenue increases the power of revenue producers over the claims and actuarial departments, with the result that the actuarial department comes under great pressure to re-examine the more pessimistic aspects of its loss projections and the claims department comes under pressure to weed out "excess" reserves.[86] The result is that an increasingly optimistic view of the future will resonate in both case and IBNR reserves. Once the hard market shift occurs, however, the claims and actuarial departments gain greater power (particularly if they have been careful to leave a record of discrete complaints about the soft market pressure), with the result that both case and IBNR reserves are adjusted sharply upward to reflect a much more pessimistic view of the future.[87] Using the emotional terms referred to above, we might say that revenue producers hold the upper hand on the cost factors used to produce prices during the "greed" phase of the cycle, while claims and actuarial departments hold the upper hand during the "fear" phase.

The competitive behavior explanation also turns on revenue and market share. Senior executives who are focused on revenue and market share will use capital to maintain revenue and market share in a soft market rather than distributing the capital to shareholders or holding it in an investment account.[88] If enough insurance companies are focused on market share and revenue, competition will drive down prices as long as decisionmakers perceive that there is excess capacity.[89] In that environment, senior managers of a company who decided to go against the flow and hold their company's excess capacity in an investment account (i.e., "cash") might find themselves out of a job as a result of a takeover by another insurance company that would

85. *Id*. at 266.

86. I base this observation on discussions with property and casualty actuaries and claims personnel from leading insurance companies, who would not authorize me to identify them or their company. *See id.* at 268 ("it is not surprising that representatives of the more 'conservative' functions within an insurance company—claims adjusters, for example—are relatively less empowered so long as calendar year results remain good").

87. This bureaucratic dynamic echoes that between the sales and claims functions of insurance companies explored in Tom Baker, *Constructing the Insurance Relationship: Sales Stories, Claims Stories, and Insurance Contract Damages*, 72 Tex. L. Rev. 1395 (1994).

88. *See generally* Dolan, *supra* note 1. R

89. Query whether focusing on market share rather than (or along with) profit makes sense even for a stock insurer in lines of insurance in which policyholders tend to stay with an insurance company and do not continually shop on the basis of price. If you can be reasonably certain that the customer you attract (or keep) during a soft market will stay with you when the market turns hard, then using capacity to cut prices may well be a form of investment.

use the cash to increase market share.[90] At the same time, the capital market's focus on future revenue streams encourages rapid and massive reserving corrections as soon as the hard market begins, thereby putting the bad news behind.[91] As this suggests, it seems likely that the insurance underwriting cycle is, at least in part, an artifact of the way that the capital market values insurance companies.

The incentive for mutual insurers would seem to be even more strongly weighted toward spending cash to increase market share, notwithstanding their reduced exposure to the capital markets. Excess capacity presents a mutual insurer with a choice among holding cash, returning a dividend to current or former policyholders, and investing in new business. Keeping the cash for a rainy day is an option, but that could lead regulators to force a distribution. Given the ownership structure of mutual insurers, there is no effective way that current policyholders could force a distribution,[92] and no market for ownership that could curb management's preference to spend the cash to increase market share.[93] The rational choice for a mutual insurer would seem to be paying just enough of a dividend to current (but not former) policyholders to discourage future price shopping,[94] but using most of the money to cut prices to get new policyholders in the door and to prevent existing policyholders from leaving to get a lower price somewhere else. If this analysis is right, then having a critical mass of mutual insurers may be a significant factor in price cutting in liability insurance markets.[95]

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90. Query whether a soft market presents managers with some of the same incentives as the end of a growth or stock bubble. It becomes increasingly difficult to live up to the expectations, but there are perceived to be great negative consequences to being the first management team to cry "uncle."

91. *See generally* Berry, *supra* note 80. **R**

92. *Cf.* Theodore Allegaert, *Derivative Actions by Policyholders on Behalf of Mutual Insurance Companies*, 63 U. CHI. L. REV. 1063 (1996) (explaining the difficulty of bringing derivative actions).

93. *See* JERRY, *supra* note 18, at 52 (explaining that mutuals are owned by their policyholders). **R**

94. Paying a dividend would seem to discourage price shopping in two ways. First, it would tend to make policyholders happy with the company, thus reducing the likelihood that they would consider price shopping. Second, it makes price shopping more difficult to do, because it demonstrates to the policyholder that the "sticker price" for insurance may not be the final price, because of the possibility of later dividends.

95. Some support for this analysis can be found in Patricia Born et al., *Organizational Form and Insurance Company Performance: Stocks Versus Mutuals*, *in* THE FINANCING OF CATASTROPHE RISK, *supra* note 29, at 167 (using data from 1984 to 1991 to find that stock companies are more likely than mutual companies to reduce their business in low profit years and increase it in high profit years, a difference that produces noticeably significant business flows in the medical malpractice line). This study provides only limited support for this analysis, however, because the study uses underwriting profit as the measure of profit. Underwriting profit is determined **R**

2. *The Winner's Curse and Herd Behavior*

The concepts of the "winner's curse" and "herd behavior" may help provide an additional behavioral gloss on the explanations of industry insiders. When buyers choose among sellers on price, there will be a bias toward insurers who offer lower prices. Thus, even if underwriters on average are accurate in their predictions of the future, the market will select against pessimistic underwriters in favor of optimistic underwriters.[96] The "winners" in the competition for market share are the optimistic, low-pricing insurers. The "curse" is the logical result of this process: in the end, premiums may well be insufficient to pay the claims. The insurers offering a lower price are not necessarily behaving irrationally; they may simply reach more optimistic conclusions from uncertain data. Using the dartboard metaphor, it is as if the darts are thrown in a random pattern, but only those heading to the left of the bull's eye are allowed to land on the board.[97]

Watching premiums flow to other, lower-pricing insurers would lead any underwriter to wonder what it is that the other companies know that he or she does not and to re-examine the pricing assumptions; and no one would be surprised when the underwriter decides that those assumptions were too pessimistic and revises one's prices so that they are more in line with those being offered elsewhere in the market. Such "herd behavior" is a rational response to many kinds of decisions under conditions of uncertainty: "If I'm wrong, at least I won't be alone."[98] Given that there is no absolute measure of success in the insurance business, a decision that involves a substantial risk of being just as wrong as everyone else exposes the decisionmaker to

on the basis of "incurred" rather than "developed" losses. Because of the underreporting of losses in incurred losses toward the end of the soft market, it is possible that stock insurers did not reduce their market share until the onset of the hard market.

96. *Cf.* Harrington & Danzon, *supra* note 26, at 520–21 (introducing the concept of winner's curse into underwriting cycle literature). *See also* McGee, *supra* note 39, at 22 (describing winner's curse dynamic in connection with inflation projections without using the term "winner's curse"). For a general discussion of the winner's curse, see Richard Thaler, *Anomalies: The Winner's Curse*, 2 J. ECON. PERSPECTIVES 191 (1988). R R

97. The obvious question is this: "Why do insurers not protect themselves against the winner's curse?" Insurers should have a good understanding of their market and the institutional incentives. We should not lightly expect that they would tolerate below-cost pricing, unless it benefited them in the long run. It is possible that there are benefits to market share, such that it is rational to "spend" capital by maintaining market share during the soft market in order to reap the high profits of the hard market and, therefore, that there is in fact no "curse." For the moment, this is an important open question.

98. ROBERT SHILLER, FROM EFFICIENT MARKET THEORY TO BEHAVIORAL FINANCE 14–18 (Cowles Found., Discussion Paper No. 1385, 2002); Sushil Bikhchandai & Sunil Sharma, *Herd Behavior in Financial Markets*, 47 IMF STAFF PAPERS 279, 280–81 (2001); David Scharfstein & Jeremy Stein, *Herd Behavior and Investment*, 80 AM. ECON. REV. 465, 466 (1990).

much less potential career risk than a decision that involves even a small risk of being wildly more wrong than others.[99] Returning to the dartboard metaphor, all the underwriters aim their darts to the left of the bull's eye for a while, not because they are colluding and not because they are foolish, but rather because there is safety in numbers. Once the hard market switch is flipped and capacity contracts, they quite rationally adjust their aim sharply to the right.

III. The Underwriting Cycle in Medical Malpractice Insurance

The general discussion of the underwriting cycle in Part II identified the following potentially significant contributors to the underwriting cycle:

- Interest rate cycles;
- The length of the liability insurance tail;
- Other factors affecting loss expense uncertainty;
- Moral hazard;
- Capacity constraint;
- Greed and fear;
- Institutional incentives; and
- The winner's curse and herd behavior.

The discussion in this Part will explore how these factors might affect medical malpractice insurance pricing.

A. Interest Rate Cycles

Interest rates, per se, do not affect medical malpractice insurance in any special way. The comparatively long length of the tail exposes medical malpractice liability insurance to interest shifts, to the extent that risk is not hedged, but that increased vulnerability is a function of the tail, not interest rates.

B. The Length of the Tail

As reflected in Figure 1, medical malpractice insurance has a comparatively long tail, even when that insurance is sold on a claims-made basis. In many jurisdictions, the tail is particularly long for insurance sold to medical providers who work with children, because of the extended statute of limitations for claims brought by or on behalf of children.

As discussed above, a longer tail produces a larger risk overhang and, thus, wider swings of the underwriting cycle. With that said, how-

99. And if the safer decision also produces the bigger bonus, all the better.

ever, it is important not to overstate the significance of the tail to the recent "crisis" in medical malpractice insurance. Especially in claims-made medical malpractice insurance (the only kind of medical malpractice insurance available in the individual physician market in most states), the length of the tail should not be any longer than that for high-value automobile injury claims brought against defendants with large amounts of insurance.[100] For ordinary automobile accident defendants, "large amounts of insurance" are available only under personal umbrella policies, and high-value automobile accident claims would seem to be the most significant risk insured under those policies. Yet, there was no "crisis" in personal lines umbrella insurance policies. As this suggests, the long tail is important but the key difference between medical malpractice and other potentially high severity torts comes from the other factors affecting loss cost uncertainty.

C. Other Factors Affecting Loss Cost Uncertainty

As depicted in Figure 4 earlier, there are various kinds of "developments risk" that affect future losses under liability insurance policies: injury developments risk, injury cost developments risk, standard of care developments risk, legal developments risk, and claiming developments risk.[101] Injury developments are changes affecting the frequency or severity of injuries potentially subject to a liability claim, such as technological change. Injury cost developments are changes affecting the costs of those injuries, such as medical inflation. Standard of care developments are changes affecting our understanding of whether an injury results from negligent behavior, such as new medical techniques or safety practices that make old ways of practicing medicine substandard. Legal developments are changes in the relevant "law on the books" (such as the elimination of the locality rule) or the "law in action" (such as increased selectivity by a plaintiff's medical malpractice specialists). Claiming developments is a catchall term for other changes that affect the propensity to claim, such as per-

100. This conclusion is based on inference. As I learned in the interviews reported in Tom Baker, *Blood Money, New Money, and the Moral Economy of Tort Law in Action*, 35 LAW & SOC'Y REV. 275 (2001), personal injury lawyers delay filing high-value personal injury claims until either the plaintiff has reached "maximum medical improvement" or the statute of limitations is approaching. As a result a high-value auto claim will not be filed until at least several years after the accident. Thus, even if it does take longer to resolve medical malpractice litigation than high-value auto accident litigation (a reasonable inference), the "occurrence" basis of the umbrella insurance coverage will mean that the tail for umbrella policies should be about the same as for claims-made medical malpractice policies. I have not located a publicly available data source that allows me to determine the tail for personal lines umbrella policies.

101. *See generally* Baker, *supra* note 9. **R**

ceptions regarding the social acceptability of bringing a medical malpractice claim.[102]

As compared to automobile liability and other aspects of "ordinary" tort law, medical malpractice seems likely to pose a wider range of risks in each of these five categories. The wider range of risks means that there is much more room for error in predicting future loss costs and, thus, more room for judgment to be affected by the pressures of the underwriting cycle.

1. *Injury Developments Risk*

The rate of medical malpractice injuries is to some extent a function of medical-related activity.[103] Thus, the increasing "medicalization" of society creates the potential for increased rates of medical malpractice.[104] On the other hand, the safety movement currently under way in medical practice has the potential to reduce the rate of medical malpractice. In addition, there are rapid technological and organizational innovations taking place in many areas of medical practice that, though not motivated by patient safety, will undoubtedly have consequences for patient safety, both for good and bad.[105] As a result of all these changes, any attempt to predict the number and type of medical malpractice injuries must allow for a large margin of error.

2. *Injury Cost Developments Risk*

The most important factor that affects the cost of medical malpractice injuries is the cost of medical care, which is also the most important factor affecting the cost of most personal injury claims.[106] Because medical malpractice claims generally involve more severe in-

102. *Id.* C*f.* William L.F. Felstiner et al., *The Emergence and Transformation of Disputes: Naming, Blaming, Claiming* . . ., 15 LAW & SOC'Y REV. 631 (1981) (articulating a framework for understanding how injuries lead to claims).

103. As Ericson and Doyle's research demonstrates, injury developments risk is also a function of changing conceptions of what constitutes an injury. *See* ERICSON & DOYLE, *supra* note 22, at 99–100. It is possible that medical malpractice may also pose special risks regarding what constitutes an injury. **R**

104. *See* William F. Sage, *The Forgotten Third: Liability Insurance and the Medical Malpractice Crisis*, HEALTH AFF., July–Aug. 2004, at 10, 14–15 (discussing the significance of medical progress and industrialization to the growth of malpractice liabilities). *Cf.* Mark F. Grady, *Why Are People Negligent? Technology, Nondurable Precautions, and the Medical Malpractice Explosion*, 82 NW. U. L. REV. 293 (1988) (suggesting that advances in medical technology increase the opportunity for injuries from inattention and other failures of "nondurable" precautions).

105. *See generally* Grady, *supra* note 104.

106. *See generally* Seabury et al., *supra* note 76. Note that "injury costs" here are not the same as what is referred to in the insurance claims practice as "severity." Injury cost developments are things that affect the cost of treating a given injury. Severity is affected by a combination of injury developments and injury cost developments. **R**

juries than other kinds of tort claims, increases in the costs of medical care have a larger impact on medical malpractice claims. Other important factors affecting injury cost include wages and norms regarding noneconomic damages.[107] Because the intensity of medical encounters rises with age, it seems likely that wage loss is comparatively less important for medical malpractice injuries, with the result that a greater percentage of medical malpractice injury costs are exposed to medical cost inflation.[108] Thus, the trend across all lines of liability insurance toward the increasing significance of medical expenses may be even more accelerated for medical malpractice liabilities.[109]

With regard to the noneconomic damages component, some research suggests that norms regarding noneconomic damages are different in medical malpractice claims than in ordinary tort claims.[110] Because we lack a persuasive explanation for this difference, it is a source of uncertainty with regard to future medical malpractice injury costs. There are reasons to believe that juries will become comparatively more generous in awarding noneconomic damages in medical malpractice cases. For example, noneconomic damages are the most obvious "punishment" component of "compensatory" damages,[111] and the managed care backlash and general de-throning of doctors suggest that juries may become more willing to punish medical malpractice. At the same time, however, there are also reasons to believe that juries will become comparatively less generous in awarding noneconomic damages in medical malpractice cases. For example, public opinion polling suggests that there is public support for the idea

107. *See generally* Stephen Daniels, *Tracing the Shadow of the Law: Jury Verdicts in Medical Malpractice Cases*, 14 JUST. SYS. J. 4 (1990).

108. The prevalence of birth-related medical malpractice claims (as opposed to medical malpractice injuries) might skew this relationship. On the other hand, the very substantial and expensive advances in what can be done to ameliorate birth-related injuries and to prolong the life of injured children seems likely to more than offset whatever wage loss effects result from this age skew in medical malpractice claims.

109. In workers' compensation, for example, the medical component of workers' compensation payments has grown from 40% in 1982 to 53% in 2002. *See* Robert Hartwig, Ins. Info. Inst., Liability Trends, Issues and Jury Verdicts: Impact on Insurance Liability and Excess Casualty Markets, slides 122, 122–24 (Oct. 2002) (unpublished PowerPoint presentation, on file with the DePaul Law Review) (using data from NCCI).

110. *See* DONALD N. DEWEES ET AL., EXPLORING THE DOMAIN OF ACCIDENT LAW: TAKING THE FACTS SERIOUSLY 100 (1996) (reporting that medical malpractice damage awards are higher than automobile or products liability awards for similar injuries).

111. *Cf.* Tom Baker, *Transforming Punishment into Compensation: In the Shadow of Punitive Damages*, 1998 WIS. L. REV. 211, 226–28 (describing how lawyers use aggravated fault to enhance compensatory damages).

that malpractice awards are too high.[112] Field research by scholars Daniels and Martin suggests that tort reform campaigns reduce juries' noneconomic damages awards, independent of damages caps.[113] In addition, states continue to adopt caps on noneconomic damages.[114] As a result of both these factors—the greater significance of medical costs and the greater uncertainty about future norms regarding noneconomic damages—the potential range of injury cost developments appears wider for medical malpractice than for other kinds of personal injuries.

3. *Standard of Care Developments Risk*

Medical practitioners face three kinds of standard of care development risks. First, advances in medical practice continually raise the bar under the traditional, profession-centered medical malpractice standard. New diagnostic techniques, new medicines, and new patient safety procedures all mean that injuries that formerly may have been understood as nobody's fault, are now the fault of the physician who did not use the new technique, medicine, or procedure.[115] Second, as Professor Mark Grady has explained, new medical technologies create new opportunities to diagnose and treat illness, but they do not eliminate the need for physician attention and related "non-durable" precautions.[116] Wonderful new advances in medical care create new opportunities for physicians to make the kind of ordinary mistakes that our system of negligence liability does not excuse (e.g., misreading a dial or forgetting to use a fetal monitor).[117] Third, there are suggestions that the basic medical malpractice liability ground rule—that the standard of care is determined by examining what is done by most doctors—may be giving way to the risk-benefit rule that applies in other areas of tort law.[118]

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112. *See* University of Connecticut, Center for Survey Research and Analysis, *UConn Poll* (Apr. 1, 2004).

113. *See* Stephen Daniels & Joanne Martin, *"The Impact that It Has Had Is Between People's Ears": Tort Reform, Mass Culture, and Plaintiffs' Lawyers*, 50 DEPAUL L. REV. 453 (2000).

114. *See generally* Elizabeth S. Poisson, Comment, *Addressing the Impropriety of Statutory Caps on Pain and Suffering Awards in the Medical Liability System*, 82 N.C. L. REV. 759 (2004).

115. *Cf.* John B. McKinlay, *From Promising Report to Standard Procedure: Seven Stages in the Career of a Medical Innovation*, 59 MILBANK MEM'L FUND Q. 374 (1981) (describing diffusion of medical advances).

116. *See generally* Grady, *supra* note 104. It is worth noting that the medical malpractice "explosion" to which Professor Grady referred in this article was a rapid increase in incurred losses, not developed losses (*see supra* fig. 2), demonstrating that good theoretical insights can nevertheless come from flawed empirical motivations. R

117. *See generally id*.

118. *See* Michelle M. Mello et al., *The Leapfrog Standards: Ready to Jump from Marketplace to Courtroom?*, HEALTH AFF., Mar.–Apr. 2003, at 46.

4. *Legal Developments Risk*

My impression is that the most significant legal developments are taking place "in action" rather than "on the books." Examples include increased selectivity among medical malpractice specialists, improvements in the dissemination of information as a result of information technology, and growth in access to experts.[119]

5. *Claiming Developments Risk*

The medical malpractice arena faces extraordinary claiming development risks. As a result of the public health research of the last decade, we now know that there are an enormous number of medical malpractice injuries and relatively few claims,[120] at a time when norms and expectations about health care are in significant flux. This creates the possibility for significant growth that, once a tipping point in social norms is reached, could become a virtual explosion of claims.[121]

D. *Moral Hazard*

There are several aspects of the medical malpractice market that may make both its buyers and sellers even less sensitive to insolvency risk than in the liability insurance market generally. On the insurance purchasing side, physicians and other noninstitutional medical care providers are relatively judgment proof, at least as compared to other high-value litigation targets, and, thus, may feel adequately protected by the $300,000 per claim maximum amount that insurance guaranty funds will pay.[122] The existence of residual market institutions in

119. Steven Yeazell has written about these developments generally. *See* Stephen C. Yeazell, *Re-Financing Civil Litigation,* 51 DePaul L. Rev. 183 (2001). I am not aware of these developments having been studied specifically with regard to medical malpractice, but medical malpractice is among the most information and expert intensive forms of tort litigation. *See* Samuel Gross, *Expert Evidence*, 1991 Wis. L. Rev. 1113, 1119 (reporting that 97% of all medical malpractice cases used experts and that medical malpractice cases had an average of five experts, compared to overall average of 3.3 experts among cases using experts).

120. *See* Cal. Med. Ass'n & Cal. Hosp. Ass'n, Report on the Medical Insurance Feasibility Study (Don H. Mills ed., 1977); Paul C. Weiler et al., A Measure of Malpractice: Medical Injury, Malpractice Litigation, and Patient Compensation 62 (1993); Lori B. Andrews et al., *An Alternative Strategy for Studying Adverse Events in Medical Care*, 349 The Lancet 309, 312 (1997); Troyen Brennan et al., *Incidence of Adverse Events and Negligence in Hospitalized Patients: Results of the Harvard Medical Practices Study I*, 324 New Eng. J. Med. 370 (1991); Eric J. Thomas et al., *Incidence and Types of Adverse Events and Negligent Care in Utah and Colorado*, 38 Med. Care 261 (2000).

121. Thomas Schelling, Micromotives and Macrobehavior 101–07 (1978).

122. As described in more detail in *Blood Money*, personal injury lawyers report that they refrain from attempting to pursue defendants' assets for both moral and practical reasons. *See generally* Baker, *supra* note 100. Given the incentive structure of the tort/liability insurance system described in that article, the guaranty fund amount is probably "enough" insurance be- R

some states[123] may further reduce medical providers' incentives to monitor the solvency risk of medical malpractice insurers. The guaranty fund protects individual providers against claims under current policies and the residual market mechanism protects those providers against the possibility of being without insurance in the future.

On the insurance selling side, physician-controlled mutual insurance companies have a very significant market share in many states. Because of their nonprofit, quasi-public interest status—serving in states such as Connecticut as the de facto residual market institution—their managers are likely to believe that insurance regulators will make extraordinary efforts to avoid declaring them insolvent. Moreover, lacking shareholders to demand profits, managers of mutuals have even greater incentive than managers of stock insurance companies to maximize market share. As a result, a mutual insurer has less incentive than stock insurers to apply the underwriting brakes in the final phase of the soft market and, accordingly, may be more likely to maintain below-cost pricing in order to preserve, or even expand, market share in a soft market.

E. Capacity Constraint

The long tail and comparatively high uncertainty in estimating future losses combine to produce a comparatively large risk overhang in medical malpractice insurance. A large risk overhang can be expected to magnify the capacity constraint. The larger the risk overhang, the more current assets have to be set aside to offset the newly strengthened reserves, and the greater the reduction in capacity in the early part of the hard market. This "amplification" of the capacity constraint helps explain why medical malpractice insurance prices rise so significantly in the hard market phase of the cycle.

F. Greed and Fear

To the degree that emotion explains aspects of the underwriting cycle, the comparatively larger uncertainty in medical malpractice loss costs seems likely to exacerbate the effect of emotion. The impor-

cause (a) the physician's behavior will not be understood to have violated the implied "duty to insure" (the physician is very unlikely to be blamed for the insolvency of the insurer), and (b) the possibility of getting a relatively easy $300,000 from the guaranty fund will discourage the plaintiff and lawyer from undertaking the effort and delay needed to obtain a judgment in excess of that amount against the doctor who can escape responsibility in whole or in large part through bankruptcy.

123. *See* FRANK A. SLOAN, PUBLIC MEDICAL MALPRACTICE INSURANCE (Report of the Pew Charitable Trusts Project on Med. Liability in Pa., Mar. 2004), http://medliabilitypa.org/research/files/sloan0304.pdf.

tance of nonprofit, physician-owned mutual insurers may make the term "greed" less appropriate for the emotion that supports optimistic pricing during the soft market. Perhaps the term "desire for approval" would be more appropriate in this context. But "fear" would surely be the correct term for the emotion that helps ignite a hard market.

G. Institutional Incentives

As already noted, the prevalence of physician-controlled mutual companies is a unique institutional feature of the medical malpractice insurance market. While there are, to my knowledge, no public reports describing the compensation arrangements within the medical mutuals, it seems likely that the mutuals are more likely than stock companies to maximize market share rather than profits, for the reasons discussed above.[124] This bias toward lowering price to maintain market share seems likely to be exacerbated by the very high visibility of medical malpractice insurance premiums within the medical office and, thus, the significant likelihood that medical providers will "shop" medical malpractice insurance in order to find the lowest price. This seems especially likely in the most recent soft market, which occurred at a time when medical providers were facing declining reimbursement rates due to the intense efforts by financial intermediaries such as Medicare, Medicaid, and managed care companies to cut costs.[125]

H. The Winner's Curse and Herd Behavior

As with interest rates, these factors would not seem to affect medical malpractice insurance in any special way. Similarly, the relatively high degree of uncertainty in medical malpractice costs will magnify the effects of the winner's curse and herd behavior.

IV. Should Regulators Act to Moderate the Medical Malpractice Insurance Cycle?

Understanding the dynamics of the insurance underwriting cycle provides some basis for developing regulatory strategies to ameliorate that cycle. One possible response is to replace market-based prices with administrative prices, and attempt to limit price declines in the soft market and price increases during the hard market, as the State of

124. *See supra* text accompanying notes 92–95. R

125. *See* Gary Young, *Federal Tax-Exemption Requirements for Joint Ventures Between Non-Profit Hospital Providers and For-Profit Entities: Form over Substance*, 13 Annals Health L. 327, 339–40 (2004).

New York appears to have done with some success during the 1995–2004 period.[126] If in fact that can be done, would it be a good idea?

As Mark Geistfeld's article in this Symposium discusses, the real problem with medical malpractice is not that malpractice premiums are too high, but rather that medical malpractice liability does not provide enough incentive for patient safety, because of the low enforcement rate.[127] In other words, even at the height of the hard market, total medical malpractice insurance premiums are less than the costs of medical malpractice. If anything, medical malpractice insurance premiums are too low from a deterrence perspective.

This means that medical malpractice insurance crises may have beneficial effects. If an insurance crisis magnifies the impact of medical liability—and there is some reason to believe it does—then smoothing the insurance cycle could reduce medical providers' loss prevention efforts. Not all efforts to reduce liability losses are socially productive, but efforts to prevent adverse medical events surely are. If there is a reasonable possibility that a medical malpractice insurance crisis increases efforts to prevent adverse medical events, then we should be wary of efforts to dampen the upward swings in the medical malpractice insurance cycle.

This Symposium is part of the proof that an insurance crisis focuses attention on medical malpractice. Whether that increased attention produces increased investment in loss prevention is harder to assess. Nevertheless, the available evidence is sufficient to justify more careful and thorough research before taking significant steps to dampen the cycle.

There does not appear to be any research documenting the rate of investment in loss prevention efforts over time. But research on human decisionmaking provides support for the proposition that volatile insurance premiums would lead to more significant changes in health care systems' loss prevention efforts than premiums that increased very slowly over time. Moreover, we can document that the most significant research on medical malpractice came in response to earlier medical liability insurance crises and that this research pro-

126. *See* Tom Baker, *Medical Malpractice Insurance Reform: "Enterprise Insurance" and Some Alternatives*, *in* MEDICAL MALPRACTICE AND THE U.S. HEALTH CARE SYSTEM: NEW CENTURY, DIFFERENT ISSUES (William M. Sage & Rogan Kersh eds.) (Cambridge University Press, forthcoming 2005).

127. Mark Geistfeld, *Malpractice Insurance and the (Il)legitimate Interests of the Medical Profession in Tort Reform*, 54 DEPAUL L. REV. 439, 447 (2005).

vided the empirical grounding that led to the recent emphasis on patient safety.

A. *Behavioral Decision Research on the Impact of Salience and the Deterrent Effect of Uncertainty*

The behavioral decision research examines the effect of salience, availability, and uncertainty on decisionmaking.[128] The research on salience corroborates the intuition that we act on the basis of what we notice.[129] Related research on availability shows that people use their ability to imagine and recall events in evaluating the risk of those events occurring in the future. This means that "discussion of a low probability hazard may increase its memorability and hence its perceived riskiness, regardless of what the evidence indicates."[130] People are more likely to buy flood insurance after a flood,[131] they are more likely to buy earthquake insurance in the wake of publicity about earthquake assessments,[132] and it seems reasonable to conclude that they are more likely to try to do something about medical malpractice during or immediately after a medical liability insurance crisis.[133]

A medical liability insurance crisis makes medical malpractice more salient, with the result that stories about medical malpractice liability and lawsuits are more available to medical providers and other people who make decisions about efforts to prevent medical injuries. One demonstration of the impact of an insurance crisis on the salience of medical malpractice can be seen from simple counting of news stories that refer to medical malpractice. Figure 5 below shows the results of this simple content analysis in the LexisNexis "All News" database from 1990 to the present in terms of both raw article counts and the rate of change in article counts over time. While part of the increase over time seems likely to be due to the expansion of the LexisNexis

128. *See, e.g.*, Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, *in* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 163 (Daniel Kahneman et al. eds., 1982) [hereinafter UNCERTAINTY].

129. *See, e.g.*, Shelley E. Taylor, *The Availability Bias in Social Perception and Interaction*, *in* UNCERTAINTY, *supra* note 128, at 190. R

130. Paul Slovic et al., *Facts Versus Fears: Understanding Perceived Risk*, *in* UNCERTAINTY, *supra* note 128, at 465. R

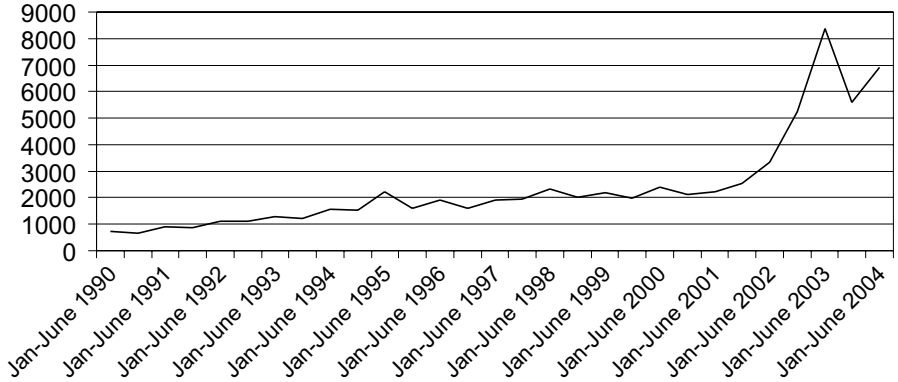
131. HOWARD KUNREUTHER ET AL., DISASTER INSURANCE PROTECTION: PUBLIC POLICY LESSONS (1978).

132. Eric J. Johnson et al., *Framing, Probability Distortions and Insurance Decisions*, *in* CHOICES, VALUES, AND FRAMES (Daniel Kahneman & Amos Tversky eds., 2000).

133. Other observers have noted the fact that doctors' perceptions of their risk of liability greatly exceeds "what would be expected from a simple calculation of the true statistical risk of suit." *See* WEILER ET AL., *supra* note 120, at 126. My argument is that medical liability insurance crises are one of the reasons why doctors have such inflated perceptions of their risk and, moreover, that these inflated perceptions help make up for the very low enforcement rate. R

database, the very sharp increase that begins in 2002 and peaks in 2003 coincides with the hard market.

FIGURE 5
SIMPLE CONTENT ANALYSIS: ARTICLES WITH "MEDICAL MALPRACTICE" IN LEXIS NEXIS "ALLNEWS FILE" DATABASE, 1990–2004



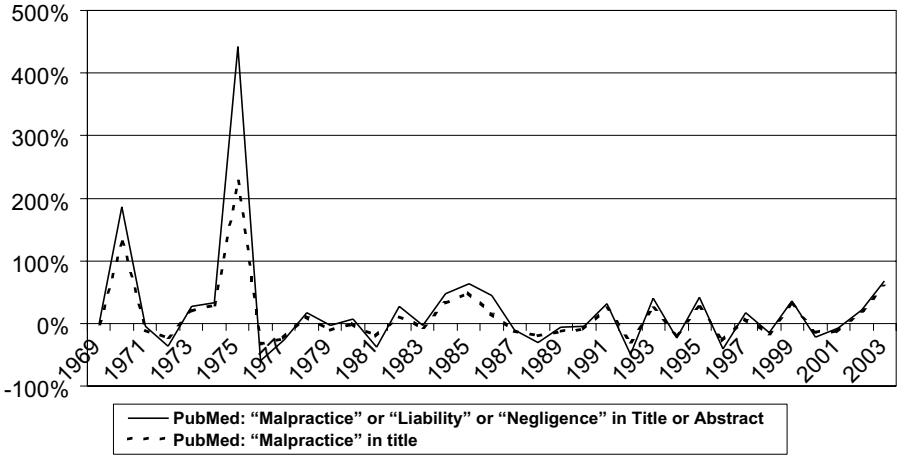
Similar article counts using the largest public access database of medical publications (PubMed) show similar results extending back in time to include the hard markets of the 1970s and 1980s. Figure 6 below shows the results of this simple content analysis in terms of the rate of change in article counts over time. There are very clear peaks that coincide with the onset of each of the three hard markets in medical malpractice insurance.

Although the behavioral decision research on the deterrent effects of uncertainty is not as well developed as the research on salience and availability, the existing research provides another reason to believe that insurance crises magnify the deterrence signal of medical liability.[134] The idea is as follows: Experimental research suggests that increasing the uncertainty regarding either the probability of detection or the size of a sanction increases the deterrent effect of a potential sanction, holding the expected value of that sanction constant.[135] Rapid increases in medical liability insurance fuel the perception that medical malpractice is out of control, that there is no link between "true" liability and the chance of being sued, and that medical mal-

134. *See* Tom Baker et al., *The Virtues of Uncertainty in Law: An Experimental Approach*, 89 IOWA L. REV. 443, 478–88 (2004).

135. *See id*.

FIGURE 6
SIMPLE CONTENT ANALYSIS: ANNUAL % CHANGE IN NUMBER OF MALPRACTICE ARTICLES IN PUBMED DATABASE, 1969–2003



practice damages awards are widely uncertain.[136] Thus, a medical malpractice insurance crisis not only increases the salience of medical malpractice, it also increases the perceived uncertainty regarding both the possibility of being sued for malpractice and the amount of damages that will be assessed in the event of suit. This increase in perceived uncertainty increases the deterrence provided by medical liability.

B. Medical Liability Insurance Crises Produce Significant Research on Medical Malpractice

Research on medical malpractice provides one of the mechanisms through which the crisis-induced salience of medical malpractice may produce action on the hospital floor. The California Medical Society commissioned the first large-scale effort to measure medical malpractice during the crisis of the mid-1970s,[137] and the State of New York commissioned the famous Harvard study of New York hospital records during the crisis of the mid-1980s.[138] These studies and a fol-

136. In part, this perception is fostered by the liability insurance industry as a way to avoid blame for the insurance crisis. *See generally, e.g.*, TILLINGHAST REPORT, U.S. TORT COSTS: 2002 UPDATE, TRENDS AND FINDINGS ON THE COSTS OF THE U.S. TORT SYSTEM (2003). The *Tillinghast Report* uses incurred loss statistics as the measure of the costs of the tort system and explains the periodic jumps in incurred losses as resulting from rapid increases in liability.

137. *See generally* CAL. MED. ASS'N & CAL. HOSP. ASS'N, *supra* note 120; WEILER ET AL., *supra* note 120, Andrews et al., *supra* note 120. *See* Thomas et al., *supra* note 120, at 261–71, 312. R R

138. *See* PAUL C. WEILER, MEDICAL MALPRACTICE ON TRIAL, at xi (1991).

low-up study of Colorado and Utah hospital records[139] provided the empirical foundation for the Institute of Medicine's influential report, *To Err Is Human*.[140] That report is widely credited with focusing health care providers and health care researchers on protecting patient safety.[141]

The link between medical malpractice insurance crises, the Institute of Medicine report, and patient safety efforts can be documented through content analyses similar to those above. Although this content analysis does not show the same dramatic link between the insurance crises and literature on medical safety as it does between the insurance crises and the literature on medical malpractice, the analysis does show a link. Moreover, it documents an increasing attention to safety in the medical literature since the 1970s. Figure 7 shows the number of articles with "safe" or "safety" in the title from 1969 to 2003 and two measures of the rate of change in the article counts over time (the yearly rate of change and a five-year moving average rate of change). While the overall trend is steadily increasing, there is a very sharp increase that coincides with the hard market of the mid-1970s and a remarkable upward trend that takes off in the mid to late 1980s.

Figure 8 shows the number of articles with "patient safety" in the title or abstract during the same period. "Patient safety" is almost invisible until the mid-1990s and does not become a significant feature in the literature until after 1999.[142] The most significant patient safety development of 2000 was the publication of the Institute of Medicine report.[143]

C. Summary

While this evidence does not prove that medical malpractice insurance crises have lead to greater improvements in patient safety than would have occurred otherwise, it does provide some support for that conclusion. At a minimum, this evidence justifies research directed at evaluating the connection between investments in injury prevention

139. Eric J. Thomas et al., *Incidence and Types of Adverse Events and Negligent Care in Utah and Colorado*, 38 MED. CARE 261–71 (2000).

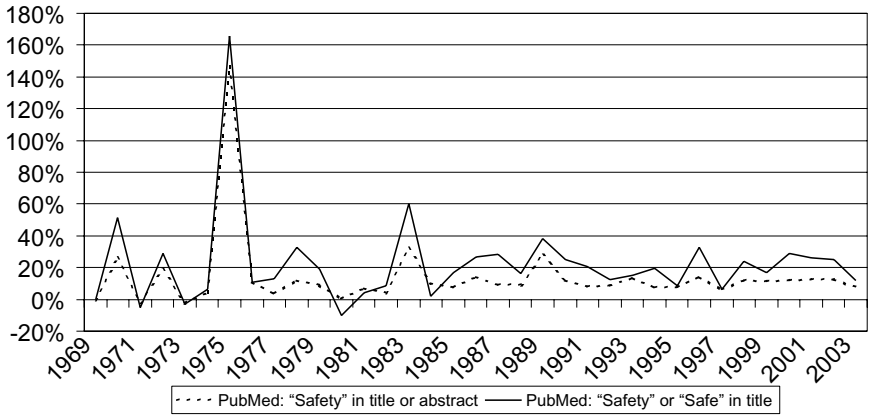
140. *See* INST. OF MED., TO ERR IS HUMAN: BUILDING A SAFER HEALTH CARE SYSTEM 29 (Linda T. Kohn et al. eds., 2000).

141. *See generally, e.g.*, Donald Berwisk, *Errors Today and Errors Tomorrow*, 348 NEW ENG. J. MED. 2570 (2003); Lucian L. Leape, *Institute of Medicine Medical Error Figures Are Not Exaggerated*, 284 JAMA 95 (2000); Robert A. McNutt et al., *Patient Safety Efforts Should Focus on Medical Errors*, 287 JAMA 1997 (2002).

142. Indeed, the number of articles written before the late 1990s is too small to make the rate of change a significant measure.

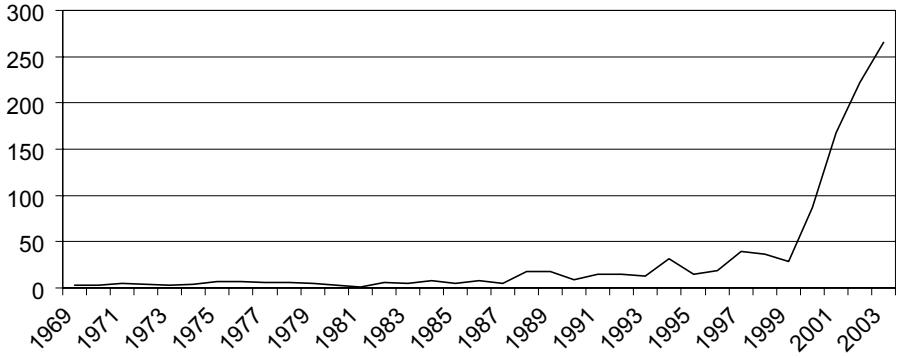
143. *See generally* INST. OF MED., *supra* note 140.

FIGURE 7
SIMPLE CONTENT ANALYSIS: ANNUAL RATE OF CHANGE IN NUMBER OF ARTICLES WITH "SAFE" OR "SAFETY" IN PUBMED DATABASE, 1969–2003



and insurance crises. In addition, it suggests that efforts to control the insurance cycle could have undesirable unintended consequences. Thus, efforts to dampen the medical malpractice insurance underwriting cycle should be coupled with programs to support injury prevention. Even if the underwriting cycle provides less spur to injury prevention than this evidence suggests, the low rate of medical malpractice enforcement means that there is very little risk that a new injury prevention "carrot" would combine with the malpractice "stick" to produce an overinvestment in medical injury prevention.

FIGURE 8
SIMPLE CONTENT ANALYSIS: ANNUAL NUMBER OF ARTICLES WITH "PATIENT SAFETY" IN PUBMED DATABASE, 1969–2003



V. Conclusions

It is my hope that this exploration of the medical liability insurance underwriting cycle has persuasively explained the following main points:

- The underwriting cycle has a combination of institutional and behavioral causes that produce a prolonged, gradual price-cutting trend in competitive insurance markets, punctuated by comparatively short periods of rapid increases in insurance prices and reduction in insurance capacity.
- The sharp increase in incurred loss expenses that accompanies the onset of a hard insurance market should properly be regarded as an *effect* of the insurance underwriting cycle and *not a cause* of the hard market.
- The comparatively wide swings of medical malpractice insurance prices over the course of the underwriting cycle are likely to be attributable to the large risk overhang produced by the interaction of a long tail with a comparatively high degree of uncertainty regarding loss expenses, and, to a lesser but still important degree, institutional arrangements and incentives that partially insulate medical malpractice insurance buyers and sellers from the insolvency risks posed by below-cost pricing.
- There is some evidence that the medical malpractice insurance underwriting cycle may promote patient safety by drawing attention to the problem of medical malpractice in a manner that makes medical liability more salient and induces greater efforts to prevent medical injuries.

In concluding, I would like to offer four additional reasons why tort scholars and policymakers should care about the underwriting cycle in medical malpractice insurance.

First, the cycle is disruptive to medical care providers, particularly physicians in high-risk specialties. If we think about medical malpractice insurance as a kind of mandatory group savings plan, it is easy to see why it is very disruptive to require people to save different amounts of money at different times. This is particularly true when medical care providers are increasingly unable to raise prices in response to increased costs. The disruption may promote patient safety, to be sure, but it has other negative effects that have to be managed.

Second, hard markets and medical provider complaints fuel suspicions about law and lawyers. Sharp price increases give substance to claims about the "litigation explosion," most likely through the availability heuristic discussed in Part IV, notwithstanding the substantial empirical research demonstrating that this explosion is a myth.

Third, hard markets are a trigger for legislative efforts to limit tort remedies. It is no coincidence that California's Medical Injury Com-

pensation Reform Act[144] came during the hard market of the 1970s, the largest round of tort reform came during the hard market of the 1980s, and the recent round of tort reform came during the hard market that began in 2001. The public attention given to insurance availability during the hard market phases of the medical malpractice underwriting cycle helped shift the development of tort law from courts to legislatures.

This shift has a structural impact on the development of tort law. In legislatures, tort reform advocates are able to frame certain classes of defendants as "victims" of tort law in a way that simply cannot be done in the courtroom. In the courtroom, tort law grows through an encounter between individuals, not factions or interest groups. The aspects of medical malpractice liability that tort reformers find most objectionable—noneconomic damages[145] and to a lesser extent joint and several liability—come into play only once the jury or judge has decided that the defendant is responsible for the plaintiff's harm. At that point, the only "victim" is the plaintiff. The defendant is a perpetrator. The situation in the legislature is very different. Doctors as a class, especially those in high-risk specialties like obstetrics, can easily be framed as the "victims" of sudden, very large increases in insurance premiums.

The underwriting cycle affects not only the timing and location of efforts to limit tort law remedies, but also the content of those efforts. Tort reform efforts have focused most intensely on aspects of tort law that make claims more difficult to value, such as joint and several liability and noneconomic damages, and thus contribute to the uncertainty that is the basic fuel of the underwriting cycle.[146]

Fourth, swings in the underwriting cycle complicate efforts to understand the role that medical malpractice liability and medical malpractice liability insurance play in deterring medical malpractice.[147] On one hand, price declines during soft markets may dampen the incentives provided by risk-based pricing, just as the loosening of under-

144. Medical Injury Compensation Reform Act of 1975 (MICRA) (codified at CAL. BUS. & PROF. CODE § 6146 (West 2003), CAL. CIV. CODE § 3333 (West 1997), CAL. CIV. PROC. CODE §§ 340.5, 1295 (West 1982)).

145. *See, e.g.*, American Tort Reform Association, *Noneconomic Damages*, TORT REFORM RECORD, Dec. 31, 2001, http://www.atra.org/wrap/files.cgi/7437_tort-record.htm (stating that "ATRA believes that the broad and basically unguided discretion given to juries in awarding damages for noneconomic loss is the single greatest contributor to the inequities and inefficiencies of the tort liability system").

146. *Id*.

147. *See* Michelle M. Mello & Troyen A. Brennan, *Deterrence of Medical Errors: Theory and Evidence for Malpractice Reform*, 80 TEX. L. REV. 1595, 1616 (2002).

writing standards may reduce the ability of insurers to demand that applicants engage in costly loss prevention measures. On the other hand, the sharp price increases of a hard market seem likely to make liability and loss prevention more salient than would a slow, gradual price increase. As a result, hard markets may foster more aggressive and persistent loss prevention measures. Similarly, the salience of liability and insurance in hard markets may lead medical providers to believe that malpractice litigation is more frequent and more successful for plaintiffs than in fact is the case. This misperception may make tort law a more effective deterrent than the low rate of claiming would suggest.