Articles

Causes of the Liability Insurance Crisis

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In this article the reasons for recent dramatic premium increases for liability insurance are explored by examination of available data on industry premiums, losses, and expenses. The suggestions that the premium increases were primarily caused by collusion among insurers, cyclical behavior, or systematic errors in forecasting losses are rejected. Instead, the evidence indicates that the jump in liability insurance premiums is most plausibly due to the growth in the discounted value of expected liability losses.

THE POPULAR MEDIA HAVE CALLED THE "INSURANCE CRISIS" the 1980s equivalent of the energy crises of the 1970s. The issue came to public attention in 1984 and 1985 when, almost daily, newspapers and magazines reported new examples of rapidly escalating premiums for liability insurance, while insurers themselves reported large and increasing operating losses. Net written premiums for general liability insurance, the largest commercial liability line of business, increased from $6.5 billion in 1984 to $19.4 billion in 1986 (*1*). Often, press stories noted that insurance coverage had also been sharply curtailed. Many insurance consumers were affected, including day-care centers, municipal governments, lawyers, doctors, accountants, aviation manufacturers, and construction contractors, among others.

The causes of these problems have been widely disputed. Some groups, including insurance companies, have blamed the rising premiums and reductions in coverage on rapidly rising and unpredictable liability claims costs and have argued for tort reform to control escalating insurance costs (*2–4*). In fact, the crisis has prompted a number of states to revise their tort laws. Others, such as consumer organizations, have pointed to insurance company mismanagement and even have suggested that insurers colluded to raise rates when the industry faced declining investment income due to reductions in interest rates (*5, 6*). Perhaps in response to these claims, a few states have also enacted laws regulating commercial liability insurance rates; several others have considered similar action. Significantly, at the federal level, Congress is considering legislation to repeal the limited federal antitrust exemption under the McCarran-Ferguson Act for the property-liability insurance industry. Repeal of the exemption could lead to far-reaching changes in the traditional system of state insurance regulation.

In this article, we explore causes of the large premium increases in commercial liability insurance by analyzing insurance industry profitability, growth in insurance losses, the relation between general liability insurance premiums and costs, and recent trends in tort litigation and jury awards. We also examine the ability of insurance companies to collude to increase premiums, as well as the roles that underwriting cycles and errors in forecasting liability costs may have played in influencing recent behavior in liability insurance markets (*7*).

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Profitability and Premium Growth

The uneven financial performance of the property-liability insurance industry in the 1980s is illustrated in Fig. 1. The industry's total income and each of its components—net operating income, realized capital gains, and unrealized capital gains on common stocks (unrealized gains on bonds are not reported on insurer financial statements)—are shown, all as a percentage of industry surplus at the beginning of each year. Net income and surplus are calculated by the so-called "statutory" accounting rules that are required by insurance regulators (*8*). Significantly, the industry's net operating income declined continuously through 1985. Although realized capital gains were large from 1984 through 1986, the industry's total return in 1984 was actually negative. By 1986, however, the financial performance of the industry had largely turned around—operating income and total income hit levels last recorded in the early 1980s.

Figure 2 helps explain the industry's fluctuating profit performance by illustrating the growth in net written premiums during the 1980s for all property-liability insurance, workers' compensation, and private passenger automobile liability. Unlike "first-party" coverage, which pays buyers directly for insured losses, third-party or "liability" lines pay injured parties on behalf of policyholders who may be responsible for those injuries. The distinction between the two types of coverage is important. Claim payments for first-party coverage, such as fire or automobile collision coverage, generally are

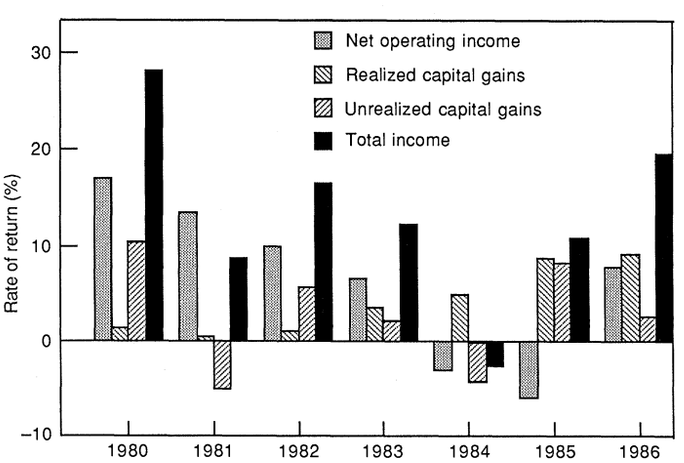

Fig. 1. Rates of return on surplus (statutory accounting principles). Data are taken from (*1*, 1980–1986 editions).

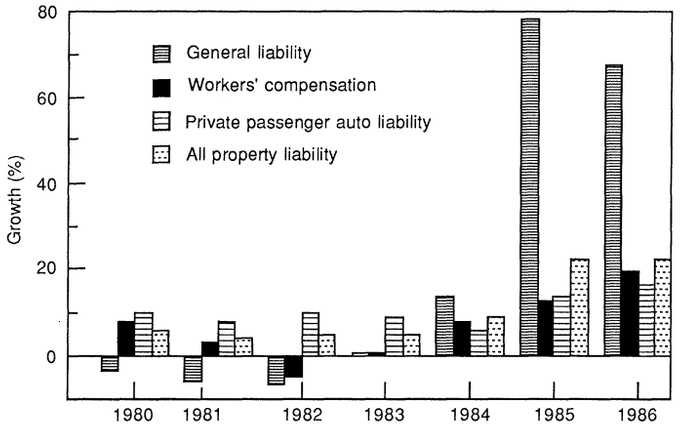

Fig. 2. Growth in net written premiums for selected lines of business. Data are from (*1*).

made shortly after losses occur. In contrast, payments for third-party coverage occur slowly over time due to lags in the discovery of injuries, in the reporting of injuries, and in the time it takes to settle reported claims. The longer "claims tail" for third-party lines allows greater investment income to be earned on premiums than for short-tailed first-party lines.

Net written premiums for all lines of liability insurance were relatively stable between 1980 and 1984 (Fig. 2). Significantly, premiums for "general liability" lines—which cover liabilities for defective products, professional malpractice, among other events—actually fell from 1980 to 1982. Commercial liability premiums exploded, however, in 1985 and 1986—most of all for general liability insurance (*1, 9*).

The increases in net written premiums during 1985 and 1986 were a key factor in the liability insurance industry's financial recovery in 1986. Yet even the data shown in Fig. 2 understate the dramatic change in insurance pricing behavior. This is because net written premiums reflect the effects of both insurance rates and the volume of insurance purchased. Because there is no standard measure of insurance protection or coverage, it is impossible to construct an aggregate measure of price changes. Since the large premium increases in 1985 and 1986 occurred in conjunction with widely reported reductions in the availability of coverage, the increases in net premiums written understate the magnitude of insurance price increases, perhaps by a significant margin.

Disputes About Profitability

The bare facts about insurance industry profitability from 1984 to 1986 have aroused hot dispute (*2–6*). In particular, it has been alleged that reported operating income significantly understates profitability for a number of reasons (*5*). One criticism is that the income figures reflect excessive expense deductions that are not consistent with generally accepted accounting principles (GAAP). However, expense accounting conventions have little impact on reported income relative to surplus or premiums, and adjusted measures of industry income based on GAAP are widely reported and show a pattern little different from that displayed in Fig. 1. Another criticism is that industry income figures incorrectly deduct policyholders' dividends. In fact, the treatment of dividends is only material for workers compensation insurance where most dividends constitute premium rebates. Still another criticism is that the income figures are understated because loss reserves are not discounted to reflect the "time value of money." This is correct; discounting loss reserves would increase reported operating income and surplus. But it would not change the downward trend in operating income between 1980 and 1985 (*9*).

Much of the debate about the industry's profitability has focused on whether realized and unrealized capital gains should be considered when evaluating the profitability of insurance operations. However, unrealized capital gains had very little impact on the average accounting return on equity for the industry from 1970 to 1986; realized capital gains had only a modest impact (*10*). Moreover, as we suggest below, insurance pricing theory suggests that in a competitive environment, year-to-year changes in capital gains (whether realized or unrealized) should have no effect on break-even premiums.

Finally, insurance income figures are sometimes attacked because they can be greatly affected by errors in reserves for future losses. This criticism is valid, but it is difficult to know where it leads, because insurers have offsetting incentives in setting reserves. For tax reasons, they may tend to overstate reserves in order to understate taxable income. On the other hand, insurers may have incentives to understate reserves in order to maximize reported income and surplus. There is little evidence indicating what the net result of these biases may be and whether it is in any way consistent over time (*11*).

The debate about insurance industry profitability has shed little light on whether policies in any given year were under or overpriced relative to expected costs. The critics' focus on the industry's aggregate performance implicitly assumes that favorable experience in some lines makes unfavorable experience acceptable in other lines. This assumption is not correct. Multi-line insurance companies cannot be expected to commit capital to a line if prices for that line do not leave insurance company owners just as well off as investing the capital in financial assets and not selling the line. It is significant that premiums written for general liability insurance grew much faster in 1985 and 1986 than premiums written for other liability lines. As we suggest below, this is most likely due to changes in costs for general liability insurance.

Explaining Price Changes in General Liability Insurance

Before examining our hypothesis in greater detail, it is useful to review the economic and financial theory of insurance pricing. Briefly stated, this body of work suggests that premiums must equal the discounted value of expected future costs if insurance company owners are to break even (*12*). Insurers' costs include underwriting (sales) expenses, which generally occur at the time of sale, and expected future losses, which are discounted to reflect the lag between receipt of premiums and payment of losses. The discounted value of future losses decreases as interest rates rise and the lag in reporting claims, or the "claims tail," lengthens. As a result, all other factors remaining the same, break-even premiums will fall as interest rates increase. In addition, break-even premiums for long-tailed lines will be more sensitive to changes in interest rates than the premiums for short-tailed lines.

What interest rate (or rates) should insurers use in discounting their losses? If loss payments are viewed as riskless by insurance company owners, economic theory suggests that losses should be discounted using the rate of interest available on bonds without any default risk at the time policies are sold. The rationale for using the "risk-free" rate of interest is that all investment risk is assumed to be borne by owners. Higher expected returns on any risky securities that insurers acquire are needed to compensate owners for the risk borne; they do not affect break-even premiums. This theoretical result implies that year to year fluctuations in capital gains from

investment in risky securities will not affect break-even premiums. To be sure, the theory assumes that insurers cannot default on promises to pay claims. But the fact that all states have guaranty funds that substantially protect property-liability insurance policyholders from loss in the event of insurer insolvency provides support for discounting losses at the risk-free rate.

If, however, loss payments are viewed as risky by insurers, premiums should be adjusted to compensate owners for bearing the risk of deviations between actual and expected losses. The appropriate adjustment has not been resolved from a theoretical perspective, and suggested approaches involve formidable estimation problems (*13*). Insurance pricing theory also provides only rough guidance about how to treat the impact of taxation of returns from investing capital in financial assets to support insurance operations. It generally is agreed that taxation costs increase with the amount of capital, but researchers have not determined the appropriate amount of capital that insurers should hold or allocate across different lines of business. Because of these difficulties, it simply is not possible to provide a conclusive answer to the question of whether premiums increased above break-even levels in 1986 or declined below break-even levels in earlier years, even if reported reserves for future losses accurately reflected insurer expectations.

Nevertheless, it is possible to provide insight into whether liability insurers have widened the margins between their premiums and their costs (administrative expenses and the discounted value of their reported losses). Figure 3 illustrates annual growth rates in "net earned" premiums and losses for general liability insurance during the period 1981 to 1986. The loss data shown in the figure refer to "accident-year" losses, which reflect payments and the loss reserve at year-end only for accidents that happened during the year. Accident-year losses are typically highly correlated with losses on policies for which premiums actually were earned during the year. The accident-year losses are then discounted, using the average yield on 5-year U.S. government bonds as the "discount factor" (*14*).

Figure 3 illustrates that net premiums earned grew less rapidly than losses (both initially reported and discounted) through 1984, but more rapidly than losses in 1985 and 1986. Throughout the 1983–1986 period, discounted losses grew faster than initially reported (or "nominal") losses because interest rates fell during these years. If initially reported losses during this period—especially in 1985 and 1986—accurately reflected insurer expectations when the policies were written, Fig. 3 suggests that much of the recent increase in premiums was due to growth in discounted expected losses, which in turn was caused by rapid growth in nominal losses and declining interest rates.

Figure 4 provides evidence that supports this conclusion, by illustrating for the 1980–1986 period the "discounted combined ratio," which itself is the sum of two ratios: (i) discounted losses to net earned premiums and (ii) the 2-year average ratio of underwriting expenses to net written premiums (*15*). This ratio is analogous to the "combined ratio" that commonly is used by insurance analysts to measure underwriting profits, except that the losses reflected in Fig. 4 are based on discounted accident-year losses rather than nominal reported losses. Clearly, as the discounted combined ratio grows larger, the amount that insurers have available for meeting other costs and compensating shareholders for bearing risk will fall.

Figure 4 shows that the discounted combined ratio—from either initially reported losses or losses developed through 1986—increased through 1984, but then declined in 1985 and 1986. Significantly, the 1983 and 1984 ratios based on losses actually developed through 1986 exceeded 1.0—indicating that discounted losses and expenses for these years exceeded earned premiums. Figure 4 also illustrates that by 1986 the discounted combined ratio of 0.79 based on initially reported losses (the only data available for

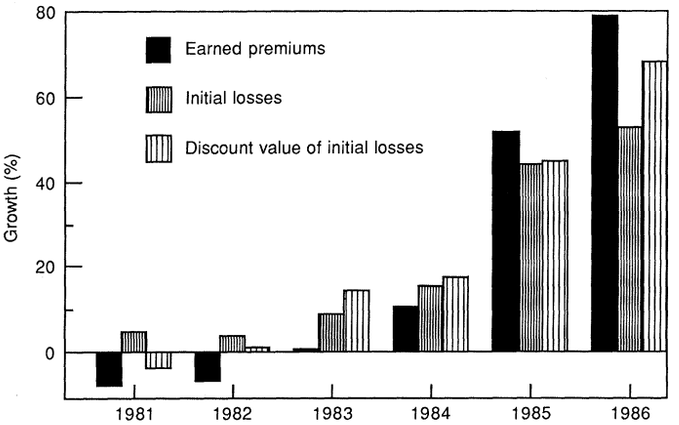

Fig. 3. Growth in net earned premiums and accident-year losses for general liability insurance (*36*).

that year) had returned very close to the ratio that had prevailed in 1980, 0.75. That is, by raising premiums in 1985 and 1986, insurers were largely able to restore the relation between costs and premiums that they had achieved at the beginning of the decade.

One important caveat is in order. It is too soon at this time to know whether the losses projected by insurers in 1986—their loss reserves for that "accident-year"—have been overstated. Of the total $13.5 billion in general liability losses reported by insurers in 1986, only $850 million had been paid by year end. Loss forecasts are inherently subject to error and, as we have already noted, there are different incentives for insurers to manage reserves to affect reported income (*11*). Nevertheless, Fig. 4 illustrates that thus far this decade initially reported liability losses have understated losses as they have actually developed in later years. This result further confirms that the most plausible explanation of the growth of liability insurance premiums during recent years is growth in the discounted value of expected losses.

Collusion, Cycles, and Forecast Errors

There are other theories, however, as to why insurers have raised their rates. Some have alleged that insurers colluded to increase premiums. Others have suggested that recent insurance pricing reflects typical cyclical behavior. And still others blame insurers for large errors in their loss forecasts. How consistent are these theories with the available evidence and received understanding of how insurers set rates?

One significant problem with the collusion hypothesis is that the commercial liability insurance market is competitively structured. The market share of leading firms is low, and there are no substantive barriers to entry. The nationwide market share of the top four companies for general liability insurance net written premiums in 1985 was 22.4 percent compared to values of 24.8 and 39.8 percent for workers' compensation insurance and private passenger automobile liability insurance, respectively (*16*). Although economists have not agreed on the precise threshold level of market share for leading firms at which collusion is likely to appear, the levels for commercial liability coverage generally would not be considered high enough to raise concern about noncompetitive behavior (*17*).

Nevertheless, critics of the industry argue that the antitrust exemption under the McCarran-Ferguson Act, which enables insurers to participate in rating bureaus, facilitates collusion. An alternative view is that rating bureaus facilitate competition by enabling

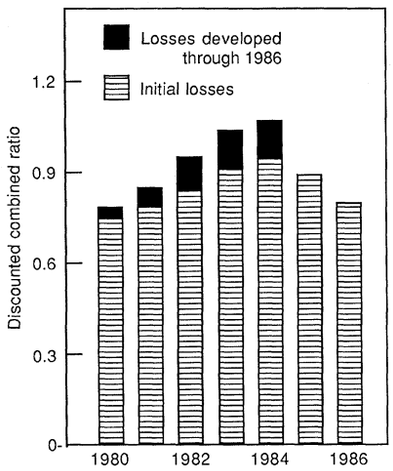

Fig. 4. Discounted combined ratios for general liability insurance (*36*).

small insurers to operate without substantial data on loss experience and without incurring large expenses in developing rates. There is only a limited body of evidence on which effect predominates. For private passenger automobile insurance, the available studies have demonstrated that the exemption is more likely to be pro-competitive—that is, rating bureaus are used more often by smaller insurers; and insurers set premiums independently despite the existence of rating bureaus and the antitrust exemption (*18*).

Although similar studies have not been performed for rating bureaus in commercial liability lines, a number of factors suggest that collusion is unlikely to have contributed to higher premiums. First, the low market shares of leading firms and relative ease of entry in the liability insurance industry make it difficult for any would-be cartel to enforce a pricing agreement. Second, many medium to large general liability risks are subject to individual risk rating. It would be extremely difficult to enforce uniformity of pricing in such situations. Third, if the industry behaved as a cartel, it is doubtful that insurers would have reduced or withdrawn coverage, as they have in recent years (*19*).

Some supporters of the collusion hypothesis assert that insurers were prompted to collude in the mid-1980s because they had earlier engaged in cutthroat competition, which had produced excessive price-cutting. Of course, rates could have been cut "excessively" in the early 1980s without leading to collusion thereafter. But, in fact, did insurers price their liability lines too low at the beginning of the decade? In hindsight, the data shown in Figs. 3 and 4 do suggest that liability insurance premiums were too low in 1983 and 1984. It is less clear, however, whether at the time the policies in those years were written, premiums fell below expected costs. As we discuss below, it is commonly believed that insurance pricing is cyclical (*20*), and cyclical behavior could have accounted for underpricing in these years.

At the same time, much apparently cyclical behavior could be due to large but random errors in loss forecasting. Evidence for this hypothesis can be found by examining the development of reserves for third-party lines for 45 large insurers (*4*). These data indicate that for accident-years 1977 to 1981, initially reported losses turned out to be quite close to losses as they actually had developed through 1985. However, beginning in 1981, developed loss ratios began to substantially exceed initially reported losses for both general liability and medical malpractice coverage (this was not true for workers' compensation and the shorter-tailed commercial multiperil and automobile liability lines).

It is also instructive to compare the annual growth rate in general liability losses for these 45 large insurers with the growth in economy-wide output (GNP) and inflation. Between 1976 and 1981, losses grew at about the same rate as nominal GNP and the consumer price index (CPI), 11 and 10 percent per year, respectively. However, between 1981 and 1985, losses considerably outpaced GNP and CPI growth—by 9.2 percent per year for accident-year losses (and a similar margin for losses developed through 1985) (*21*). In combination, the loss data from the 45-insurer sample suggests that the liability insurance industry did not anticipate much of the growth in general liability losses following 1981.

Nevertheless, it has been suggested that liability insurers historically have experienced cyclical patterns in their prices and profits because insurers lag in their adjustment to changes in break-even prices (*22*). Cyclical behavior is also blamed on other factors: differences among insurers in expectations about interest rates and future losses (*23*), the possible use of suboptimal forecasting techniques (*24*), and excessive risk-taking by insurers with little to lose if default occurs (*4*). Economists have not yet fully sorted out all these theories. In particular, there is still no satisfactory explanation of why insurers would repeatedly price their policies below expected costs. At this point, the best that can be said is that cyclical factors may have played a role in the recent explosion in insurance premiums, but the precise contribution of cyclical forces is still uncertain.

Growth in Jury Awards and Tort Litigation

The expansion in the scope of legal liability during the past several decades is well known. Courts have increasingly moved toward the "strict liability" doctrine in products liability cases, allowing plaintiffs to recover without showing that manufacturers were "negligent." Standards of proof have been relaxed in some tort actions, notably those involving toxic substances. A variety of other changes in technical legal doctrines have made it easier for accident victims to recover damages for their injuries.

Nationwide data on tort recoveries, resulting from trial verdicts or settlements, are not available. Nevertheless, the limited data that do exist are consistent with the loss projections made by insurers. For example, damage awards for nonautomobile injury litigation, such as product liability and medical malpractice cases, appear to be increasing rapidly. Jury verdict data for two large metropolitan areas, Cook County, Illinois, and San Francisco, California, suggest that average awards for both these types of cases have grown at a significantly faster rate than both GNP and CPI for medical care (*25*). Much of this growth reflects a large increase in awards of $1 million or more in both jurisdictions (*25, 26*).

Some observers have criticized these findings, arguing that the average award figures conceal the fact that median awards for all tort cases (including those involving automobile accidents) have grown at about the same rate as inflation (*8, 9*). In fact, however, the median, inflation-adjusted award for both product liability and medical malpractice cases in Cook County and San Francisco increased dramatically during the 1960 to 1984 period in both jurisdictions (*25, 27*).

Jury award data overstate the amounts plaintiffs ultimately receive as compensation because they do not reflect reductions in verdicts by appellate courts (*28*). Nonetheless, jury verdict amounts are likely to have an important demonstration effect in influencing out-of-court settlements, which resolve almost all tort claims filed (*29*). The Cook County and San Francisco data also suggest that while the severity of injuries may have increased over time, the increase in average awards persists after adjusting for differences in severity (*30*), and that large awards are more likely for nonauto cases and suits with corporate defendants for a given degree of severity (*31*).

The numbers of tort claims also appear to be increasing relative to

population growth, although again there are no comprehensive data. Between 1976 and 1985, the volume of medical malpractice and product liability cases filed in federal courts roughly tripled, to more than 1,800 and 13,500, respectively (*6, 32*). In contrast, lawsuits of all types filed in state courts in recent years suggest that tort cases have been growing at an average annual rate of 2 to 4 percent (*33*). Significantly, the aggregate data include suits involving automobile accidents, the large majority of which involve private passenger vehicles and which account for over half of tort actions. Automobile accidents generally have declined in recent years due to reductions in the number of automobile accidents and the introduction of no-fault automobile insurance in many states (*7*). Analysis of state court data for California suggests that when automobile cases are removed, the rate of increase in other types of personal injury suits is much greater than population increases (*34*).

In sum, the available data on the volumes of tort cases and amounts of awards are consistent with the rising losses reported by insurers. Whether the volumes and outcomes of tort actions have grown less predictable is less clear. It is conceivable that greater uncertainty contributed to the failure of insurers to maintain adequate loss reserves during the 1982 to 1984 period. In any event, there is little doubt that unexpected changes in tort law and legal standards for interpreting liability insurance contracts produce risk for insurers that cannot be readily diversified. Such changes, in combination with rising losses, could have increased break-even premiums in the insurance industry in the mid-1980s (*35*).

Conclusions

The available evidence suggests that the total increase in general liability insurance premiums since 1980 can be largely explained by growth in the discounted value of expected future losses. In retrospect, premiums failed to keep pace with losses through 1984, with the result that especially large increases were needed in 1985 and 1986 to catch up with growth in losses. The growth in premiums also was aggravated by reductions in interest rates that led to even greater increases in the discounted value of losses.

The evidence also suggests that liability insurers failed to anticipate rapid growth in losses in recent years. The data on growth in jury awards and litigation are consistent with this hypothesis. It is difficult to know whether liability insurance premiums were too low relative to expectations of losses in the early 1980s and whether they became too high in 1986. However, the structure of the market for commercial liability insurance and several other factors suggest that collusion among insurers is unlikely to have contributed to premium growth despite the industry's antitrust exemption.

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11. See, for example, M. Weiss, *J. Risk Insurance* **52**, 199 (June 1985).
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13. See D. Cummins and S. Harrington, *J. Risk Insurance* **52**, 16 (March 1985).
14. A 2-year average was used since earned premiums and accident-year losses will primarily reflect experience for business written in years t and $t-1$. Because of data limitations, the yield on January issues in 1986 was used to discount 1986 losses. The yields used were 10.4, 12.8, 13.6, 12.0, 11.5, 11.3, and 8.6 percent for the years 1980 through 1986, respectively. For accounting purposes, written premiums are earned evenly over the period of coverage. Since losses also occur at a relatively constant rate over the coverage period, the use of earned premiums provides a better match between premiums and losses than does the use of written premiums.
15. Since most expenses are incurred when premiums are written, dividing by net written premiums recognizes expenses according to generally accepted accounting principles (*9*). An average for years t and $t-1$ is used since net premiums earned will primarily reflect business written in these years.
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37. This article is based on the authors' work on the Brookings Institution's liability project [R. E. Litan and C. M. Winston, Eds., *Liability: Perspectives and Policy* (Brookings Institution, Washington, DC, in press)]. We thank C. Lee for research assistance.