THE PERFORMANCE OF THE 1980S CALIFORNIA INSURANCE AND LIABILITY REFORMS

by W. Kip Viscusi and Patricia Born

Abstract: The authors examine the impact of Proposition 103. They contend that Proposition 103 reforms did not come at the expense of insurer profitability. Rather than exhibiting a decline in profitability following the adoption of Proposition 103, there was a substantial improvement in profitability which remains quite high relative to the rest of the country.

INTRODUCTION

The 1980s were a turbulent time for insurance markets. The surge in tort liability cases led to an increase in insurance losses and the widespread designation of the mid-1980s period as being one of a liability insurance crisis.

Much of the alarm was based on anecdotal evidence pertaining to rapid increases in insurance costs and evidence of denials of coverage. Higher premium rates led to the temporary closure of the Coney Island roller coaster ride, the Cyclone. Motels removed diving boards from swimming pools. Some municipalities found it difficult to obtain insurance for playgrounds. Many leading pharmaceutical companies began to restrict the marketing of potentially useful new drugs that also raised the spectre of a prospective liability burden. The number of firms marketing vaccines for the major childhood diseases, for example, shrank, and a National Academy of Sciences study attributed the decline in U.S. research on contraceptive products to the associated liability costs.

The impetus for designating the situation a crisis and clamoring for reform was enhanced by the media’s portrayal of many outcomes as being the result of capricious tort liability structure. A Los Angeles dentist obtained a $6.3 million out-of-court settlement for an injury he sustained after falling from his polo pony. A Philadelphia woman obtained a $1 million award after claiming that a CAT scan caused her to lose her psychic powers. And, in 1994, a woman was awarded $2.9 million (later overturned) after suffering burn injuries when she spilled a cup of coffee on her lap at a McDonald’s restaurant.

If the evidence with respect to the liability crisis were only anecdotal, there would have been little rationale for taking policy action. However, the statistical basis for the crisis designation was also considerable. Over the 1984-1986 period, the total volume of premiums for general liability insurance, which includes coverage such as product liability insurance purchased by firms, tripled. Over the same period, medical malpractice premiums doubled—a considerable change in

W. Kip Viscusi is Cogan Professor of Law and Economics, Harvard Law School. Patricia Born is an Assistant Professor, Department of Finance, University of Connecticut.
that market as well. In contrast, the automobile insurance premium levels at the national level were comparatively stable, as they increased by 60 percent over that same period. The major brunt of the crisis seemed to be confined primarily to the lines such as medical malpractice, general liability, and environmental coverage rather than the more stable automobile insurance line.

Spurred on by the calls for liability reform, the majority of all state legislatures adopted some kind of liability reform over the 1985-1987 period. Most of these reforms were concentrated in 1985 and 1986. One of the states undertaking reforms was California, which will be the focal point of this article. The California reforms are of interest in their own right as a case study and as a major component of the overall U.S. insurance market. Moreover, California has served in the existing literature as a prominent case study of the performance of the 1970s California medical malpractice reforms.3

Unlike most states that focused primarily on reforms of general liability, product liability, and medical malpractice, California also embarked on a unique set of reforms in automobile insurance. In particular, in the wake of rising automobile insurance premium rates in the mid-1980s, the California voters approved Proposition 103. California voters approved this insurance-reform ballot initiative on Nov. 8, 1988. The proposition called for an immediate 20 percent reduction of auto, homeowner, commercial, and municipal liability insurance rates. These rates were then to be frozen for a year, unless the commissioner determines that a rate change is necessary to prevent an insurer from impending insolvency. All rate increases became subject to prior approval by the insurance commissioner (a major change from the open competition previously); the exemption from state antidiscrimination was repealed, allowing banks to sell insurance; the determinants of auto liability rates were limited to the insured’s accident record.4

The motivation behind Proposition 103 was consumer dissatisfaction with automobile insurance rates, among the highest in the nation. In 1989, the constitutionality of the insolvency provision was questioned, and the provision was modified to entitle insurers to an adequate return. Some analysts have estimated that the 20 percent rollback produced an annual loss of $6 billion for the industry.5 Opponents claim that revenues are further reduced because the proposition “introduces more competition into the insurance market by allowing California banks to act as insurance brokers.” Most California auto insurers claimed to be earning little or no return in the state. Then, insurance rates could actually increase if insurers could demonstrate that their current rate structure deprives them of an adequate return.

A potential rationale for rolling back insurance rates would be if the rates were the results of noncompetitive forces.6 For example, if an insurance monopoly were marketing automobile in California, there would be less sensitivity to market pressures than if a large number of firms were in operation. Since California is the largest insurance market in the coun-
try with hundreds of firms in operation, it is unlikely that coordinated ac-
tion by a cartel of insurance compa-
nies could lead to a successful con-
spiracy to raise prices. As will be in-
dicated in the detailed examination of
insurance statistics below, the profit-
ability of California insurance compa-
nies was not particularly high so that
the rates that were being charged for
automobile insurance seem to be in
line with the losses insurance com-
panies incurred. To the extent that one
would make an argument for excessive
premium levels, it would consequently
be based on a claim that the insurance
companies were not vigilant enough
in holding down excessive claims that
generate the high losses. Although we
will have no direct evidence on
whether firms were vigilant in this
area, a firm seeking to maximize its
profits will seek to reduce costs since
doing so will increase its net gain from
the insurance policies that are written.
If the California insurance markets
were in fact highly competitive, then
the ultimate effect of limiting premium
levels should be quantity rationing.
Firms would find it unprofitable to
write insurance for the higher risk cus-
tomers, leading to an overall decline
in the amount of insurance written.
Examination of insurance market sta-
tistics will make it possible to assess
whether in fact there were severe dis-
ruptions in insurance market per-
formance.

The ultimate effects of the automo-
bile insurance and liability reforms can
be assessed by analyzing detailed in-
formation on insurance company be-
havior. In this paper we will utilize a
very extensive database on every in-
surance company that wrote insurance
in the state of California, and we will
compare the performance of these
firms with the nation as a whole. We
will consider three lines of insurance
— automobile insurance, general li-
ability insurance, and medical mal-
practice insurance. This detailed in-
formation, which is drawn from the
computer tapes compiled by the Na-
tional Association of Insurance Com-
missioners, makes it possible to have
a comprehensive examination of the
performance of insurance markets and
the relationship of this performance to
the adoption of the various legislative
and initiative reforms.

Examining mean levels of profit-
ability may be deceptive and may fail
to provide accurate insights into the
consequences of reform efforts. The
effect of the reforms may be different
depending on the particular segment
of the market. High loss firms, for
example, may be differentially af-
fected by damages caps. Because we
have data on individual firms and not
simply overall state averages, it is
possible for us to explore the ramifi-
cations of the reforms for the entire
distribution of firms in the industry.
Our examination suggests that in fact
the reforms were not neutral in terms
of their market-wide implications.
Different segments of the market ex-
perienced quite different changes in
profitability in the wake of the reform
efforts. In addition, both the liability
reforms and the automobile insurance
premium limits seem to have had the
desired consequences. There was sta-
bilization in the performance of the
general liability and the medical mal-
practice lines. Automobile insurance
premiums also exhibited substantial improvement as well. However, what was most striking is that this improvement was not at the expense of lower profitability of firms, as in fact the opposite was the case. There were no dire consequences of Proposition 103, which by any objective standard was linked to improved well being of the insurance industry.

THE CALIFORNIA REFORMS

The focal point of the analysis will be on the two sets of reforms influencing California insurance markets, which are summarized in Figure 1. In the case of automobile insurance, the major effort was Proposition 103, which promised a 20 percent rollback in automobile insurance rates. Moreover, before firms could alter the rates they charged they were required to obtain prior approval of such rate changes by the state insurance bureau. Additionally, Proposition 103 imposed limitations on the classification procedures used for setting auto insurance rates for individual insured. Specifically, it limited the determinants of automobile liability rates to the

| Figure 1 |
| Key Insurance-Related Enactments in California |
| 1986-1989 |

**Automobile**

1988: Proposition 103: promised a 20 percent rate rollback and required prior approval regulation of rates and limitations on auto insurance rates classification.

1989: Modified so that any rollback should not deprive insurer a fair rate of return.

**General Liability and Medical Malpractice**

1986: Joint and Several Liability: abolished as it applies to noneconomic damages (CA Proposition 51).

1987: Punitive Damages: increased the burden of proof required to obtain a judgement for punitive damages; plaintiffs suing for punitive damages may not state amount demanded; evidence of defendant’s wealth may not be introduced until liability for punitive damages has been determined (CA SB 241).

Ad Damnum Clause: prohibited in claims for punitive damages (CA SB 241).

Product Liability: excludes actions on inherently unsafe products (CA SB 241).

Government Liability: provisions provide immunity for conditions of public beaches, actions arising out of rules, ordinances or statutes, and actions arising out of police pursuits. Also abrogates the collateral source rule in actions against public entities (CA AB 1173).

Professional Liability: provides immunity for directors, officers, and trustees of nonprofit organizations (CA SB 1526). Also authorizes corporations to include in their articles of incorporation a clause limiting or eliminating the personal liability of a director to the corporation or its stockholders (CA AB 1530).

Source: Alliance of American Insurers and American Re-insurance Company.

17
insured’s accident record. The provisions of Proposition 103 were upheld in a court decision the following year. The decision stated that rate rollbacks could not deprive an insurer of a fair rate of return.

The automobile insurance initiative was a unique measure attributable at least in part to a legitimate concern with rising premium levels. California automobile insurance premiums rose from $4.3 billion in 1984 to $5.2 billion in 1985, $6.7 billion in 1986, and $7.3 billion in 1987. After the adoption of Proposition 103 in 1988, overall premium levels in California stabilized to $79.7 billion in 1988, and the total remained roughly constant through 1991 when premiums were $79.9 billion. Consequently, from 1984 to 1987, the year before the reform was enacted, premiums had increased by roughly 75 percent, which would create a concern with premium costs among those who purchase insurance. These overall statistics indicate a pattern that will be borne out in the more detailed examination below, which is that there was a stabilization in the premium levels following the adoption of Proposition 103.

The general liability and medical malpractice reforms were not the result of an initiative approved by California voters but instead were the consequence of liability reform legislation approved by the California state legislature. As in the case of the other liability reform efforts of the 1980s, the states are the focal point of the initiative. Indeed, only four states did not adopt general liability reforms and only four states did not adopt medical malpractice reforms in the 1980s.

California enacted a comprehensive medical malpractice tort reform package following the liability crisis of the mid-1970s. This package, the Medical Injury Compensation Reform Act (MICRA), was hailed for its success in lowering professional liability premiums. There is as yet no evidence that the reforms reduced litigation rates, severity of malpractice awards, or that the savings has been passed on to consumers in the form of lower health insurance prices. General liability insurance was the primary target of the reforms in the 1980s, although provisions also pertained to medical malpractice. As the majority of the reform efforts directed at medical malpractice occurred in the 1970s, the newer reforms might have had only small or incremental influence on the performance of insurers in California in the 1980s. The character of the California reforms also paralleled that of many other states. As in other states, the focal point of the reform efforts included abolition of joint and several liability, where in this case the limitation applied only to noneconomic damages. There could continue to be joint and several liability for pecuniary losses associated with an accident. Although reform activity nationwide began in 1985 and continued through 1987, the California reforms began in the middle of that period — 1986.

There was an additional series of reforms enacted in California in 1987. Of the reforms listed in Figure 1, those that appear to be most consequential to the performance of general liability and medical malpractice insurance appear to be the punitive damage provisions. California increased the bur-
den of proof required to obtain punitive damages and imposed other restrictions on punitive damages, such as prohibiting plaintiffs from introducing information pertaining to the wealth of the defendant. In addition, this legislation excluded product liability actions pertaining to out-of-state products.

Overall, California adopted liability reforms that appeared to be fairly mainstream in terms of their character. However, the automobile insurance reforms represented a unique experiment in the state of California as well as one with potentially sweeping ramifications given the extent of the insurance premium rollback that was involved.

In each case, our procedure for ascertaining the effect of the reform will be twofold. First, we will examine the performance within the state of California of the particular insurance lines affected to analyze what shifts occurred over time and whether these shifts were correlated with the adoption of the reform. In the case of general liability and medical malpractice, was there a change in the trend in these markets beginning in 1986 and continuing thereafter? If the liability reforms were in fact effective, one should observe a change in the time-related trend. Similarly, after the adoption of the automobile reforms in 1988, did the performance of the automobile insurance markets in 1988 and thereafter differ from the trends exhibited before the reforms were adopted?

The second comparison involves differences between the performance of insurers in California and the experience nationwide. Even if the insurance rate trends in California were consistent with an effect of the reform effort, it may have been that these improvements would have occurred in the absence of reforms. For example, fluctuations in interest rates and general economic conditions influence the performance of insurance markets. Since the automobile insurance reform experiment in California was unique, comparison of the California experience with the country as a whole will be a precise benchmark for distinguishing the efficacy of the California effort relative to other states. In the case of the general liability and medical malpractice reforms, where many other states adopted reforms as well, use of the U.S. reference point will serve primarily to indicate whether the effects of the California reforms were greater than the efforts in other states.

SAMPLE CHARACTERISTICS

The National Association of Insurance Commissioners (NAIC) database that will be used for our examination of insurance market performance consists of information on every firm writing insurance in every state. Information is available by firm and by year for the three lines of insurance that are the focal point of the paper. Since the individual firms are required by law to report insurance information to their state regulators, this is a comprehensive database.

The sample sizes in terms of the number of firms represented are quite large. However, the exact number of firms writing insurance varies from year to year because of entry and exit into the market. As a result, the focal
point of the analysis will be on average performance by firms.

Consider first the case of the California market. In the case of automobile insurance, the number of firms writing coverage ranged from 348 companies in 1991 to 384 companies in 1985. It is unlikely that the effect of the reforms was to decrease the number of firms in the market. This number decreased from 384 in 1985 to 372 in 1986 and to 360 in 1987. These years of substantial decline preceeded the adoption of Proposition 103. In the 1988-1991 period, the number of firms fluctuated between 348 and 354, with no apparent trend. In the case of California general liability insurance coverage, the number of firms writing such insurance ranged from 345 in 1989 to 362 in 1985. Once again, there is no apparent relationship of the number of firms writing insurance to the adoption of liability reforms beginning in 1986, as there is a modest year-to-year fluctuation that exhibits no apparent trend. The California medical malpractice insurance market is the smallest in terms of the number of firms writing coverage, as this number ranged from a low of 48 firms in 1988 to a high of 73 firms in 1984. The 1984 total was an outlier as the number of firms writing coverage never exceeded 60 firms in any other year.

For firms to be able to collude and restrict prices, it must be feasible to coordinate their behavior. In the case of each of the insurance markets examined, the large number of companies involved and the individual incentive of each firm to break away from a price collusion effort to obtain business from other firms would seem to make monopolistic pricing unlikely. Moreover, to the extent that any such coordination could occur, the more likely candidates would appear to be the markets with the smaller number of firms writing coverage, general liability and medical malpractice. The target of the insurance premium rollback, however, was automobile insurance. The automobile insurance market was the largest in terms of the number of firms, with several times the number of firms as are involved in the case of medical malpractice. In a market with hundreds of firms, the potential for price collusion is quite small.

The sample sizes for the rest of the United States involve a considerably large number of firms. In the case of automobile insurance, the number of firms writing coverage ranges from 12,816 in 1986 and 1987 to 13,457 in 1985. The number of firms writing general liability insurance ranged from 11,694 in 1984 to 12,835 in 1988. Finally, the number of firms writing medical malpractice insurance ranged from 1,616 in 1986 to 2,239 in 1984. For the purpose of these firm counts, each firm writing coverage in a state is calculated as a separate observation. Thus, State Farm automobile insurance in California counts as one automobile insurance observation, and State Farm automobile insurance in New York counts as a second firm.

Figure 2 summarizes the overall characteristics of the sample. For simplicity, this figure focuses on the beginning and ending dates of the sample period, 1984 and 1991. The statistics in this figure pertain to the means and standard deviations of different insur-
Figure 2
Sample Statistics for Insurance Firms in California and United States Samples
Mean (Standard Deviations in Parentheses)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automobile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premiums ($000)</td>
<td>11,380.18</td>
<td>2,493.78</td>
<td>22,953.51</td>
<td>4,090.44</td>
</tr>
<tr>
<td></td>
<td>(51,345.28)</td>
<td>(14,201.80)</td>
<td>(100,304.48)</td>
<td>(25,075.42)</td>
</tr>
<tr>
<td>Losses</td>
<td>9,780.80</td>
<td>2,062.92</td>
<td>15,471.40</td>
<td>3,107.41</td>
</tr>
<tr>
<td></td>
<td>(41,491.16)</td>
<td>(11,065.02)</td>
<td>(67,669.16)</td>
<td>(18,693.07)</td>
</tr>
<tr>
<td>Loss Ratio</td>
<td>0.859</td>
<td>0.827</td>
<td>0.674</td>
<td>0.760</td>
</tr>
<tr>
<td></td>
<td>(0.819)</td>
<td>(0.706)</td>
<td>(0.522)</td>
<td>(1.104)</td>
</tr>
<tr>
<td>General Liability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premiums ($000)</td>
<td>2,906.99</td>
<td>721.18</td>
<td>6,178.39</td>
<td>1,301.44</td>
</tr>
<tr>
<td></td>
<td>(6,317.49)</td>
<td>(3,479.97)</td>
<td>(18,180.26)</td>
<td>(6,516.50)</td>
</tr>
<tr>
<td>Losses</td>
<td>3,583.66</td>
<td>778.81</td>
<td>5,267.45</td>
<td>1,048.53</td>
</tr>
<tr>
<td></td>
<td>(7,349.68)</td>
<td>(3,333.37)</td>
<td>(14,028.80)</td>
<td>(5,215.95)</td>
</tr>
<tr>
<td>Loss Ratio</td>
<td>1.233</td>
<td>1.080</td>
<td>0.853</td>
<td>0.806</td>
</tr>
<tr>
<td></td>
<td>(2.655)</td>
<td>(6.054)</td>
<td>(3.358)</td>
<td>(3.724)</td>
</tr>
<tr>
<td>Medical Malpractice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premiums ($000)</td>
<td>5,665.27</td>
<td>1,047.12</td>
<td>5,314.85</td>
<td>1,919.46</td>
</tr>
<tr>
<td></td>
<td>(17,677.73)</td>
<td>(6,077.71)</td>
<td>(14,919.62)</td>
<td>(9,675.22)</td>
</tr>
<tr>
<td>Losses</td>
<td>5,260.74</td>
<td>1,172.57</td>
<td>2,338.43</td>
<td>1,426.11</td>
</tr>
<tr>
<td></td>
<td>(17,089.37)</td>
<td>(7,650.20)</td>
<td>(8,096.54)</td>
<td>(7,285.75)</td>
</tr>
<tr>
<td>Loss Ratio</td>
<td>0.929</td>
<td>1.120</td>
<td>0.440</td>
<td>0.743</td>
</tr>
<tr>
<td></td>
<td>(3.453)</td>
<td>(6.418)</td>
<td>(0.581)</td>
<td>(14.011)</td>
</tr>
</tbody>
</table>

*Loss ratios are weighted by the premium levels of each firm, by year.

There are three sets of statistics that appear in Figure 2. The first consists of the premium level. This is the total volume of premiums written, which represents the combined influence of the number of policies and the price charged for each policy. Unfortunately, information is not available to enable one to isolate changes in the actual rate that consumers were charged. The second informational component is the total value of losses, where these losses have been charged back to the year in which the policy associated with the losses was written. The final statistic, which is the most important measure of insurance market behavior, is the loss ratio. This statistic represents the ratio of losses to premiums. In effect, one can view the loss ratio as an inverse measure of the profitability of insurance. The loss ratio can also be viewed as the inverse of the ex post price of insurance, or the inverse of the premiums charged per unit losses ultimately generated. A higher value of the loss ratio implies that losses are rising relative to premiums. A loss ratio of 1.0 means that losses just equal premiums. The firm's profitability will increase, other things being equal, if it is able to reduce its loss ratio, thus widening the spread between the premiums collected and the losses that will be paid.
The loss ratio serves as the dominant measure in the insurance literature for tracking insurance market behavior, but it is by no means a complete index of insurer profitability. A firm can invest premiums and earn a rate of return before the losses are paid. Thus, potentially a firm could still earn profits with a loss ratio of 1.0 or higher since it can earn interest on the premiums during the time before losses are generated. A second omitted factor is that the expenses associated with underwriting insurance policies are not captured in these data. As a consequence, if interest rates were zero, firms would necessarily be facing losses associated with their underwriting expenses and administrative costs whenever loss ratios were 1.0 or higher. Indeed, they may in fact be losing money for much lower loss ratios under such circumstances.

The overall statistics for these different lines of insurance from 1984 to 1991 are suggestive of the considerable transformation that took place in the insurance markets over that period. In California, automobile insurance premiums more than doubled from 1984 to 1991, and in the United States overall the increase was a bit less. Whereas there was an overall improvement in U.S. automobile insurance profitability with loss ratios dropping from 0.83 in 1984 in the U.S. to 0.76 in 1991, the improvement was even greater for California. In that state, the loss ratio dropped from 0.86 to 0.67. Examination of the endpoints of our sample suggests that this period was one of enhanced profitability of automobile insurance in California relative to the rest of the country — the opposite result of what one might have expected in the wake of premium restraints. General liability insurance and medical malpractice insurance also experienced increases in profitability, as indicated by lower loss ratios, both in the United States and in California. By far the most striking improvement was the California medical malpractice loss ratio trend, which declined from 0.93 in 1984 to 0.44 in 1991. The overall improvement in the U.S. medical malpractice market profitability was also great, but not nearly as large as the stunning change exhibited in California.

These improvements in profitability were coupled with changing premium levels as well. General liability premiums roughly doubled in California and the United States from 1984 to 1991. However, whereas medical malpractice premiums throughout the entire country doubled from 1984 to 1991, the average premium amount per firm in California actually decreased. This is not surprising given the success of MICRA in lowering physicians' malpractice premiums relative to the national level.\(^{16}\)

Figure 3 summarizes the shifts in the profitability for automobile insurance for both California and the rest of the United States. Consider first the median firm in the industry. For California, the loss ratio was at a relatively high level during the pre-Proposition 103 period. The median loss ratio was 0.89 in 1984, and it declined to 0.83 in 1987. In contrast, for the overall United States average, the loss ratio median was 0.77 in 1984 and 0.69 in 1987. Consequently, the pre-Proposition 103 period was not one of particu-


<table>
<thead>
<tr>
<th>Figure 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss Ratio Trends for Automobile Accident Insurance in California and in the United States 1984-1991</td>
</tr>
</tbody>
</table>

**CALIFORNIA**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>0.409</td>
<td>0.400</td>
<td>0.393</td>
<td>0.415</td>
<td>0.360</td>
<td>0.315</td>
<td>0.264</td>
<td>0.263</td>
</tr>
<tr>
<td>25th</td>
<td>0.665</td>
<td>0.660</td>
<td>0.633</td>
<td>0.637</td>
<td>0.573</td>
<td>0.519</td>
<td>0.511</td>
<td>0.492</td>
</tr>
<tr>
<td>Median (50th)</td>
<td>0.885</td>
<td>0.861</td>
<td>0.831</td>
<td>0.830</td>
<td>0.755</td>
<td>0.724</td>
<td>0.706</td>
<td>0.665</td>
</tr>
<tr>
<td>75th</td>
<td>1.164</td>
<td>1.221</td>
<td>1.129</td>
<td>1.153</td>
<td>0.990</td>
<td>0.938</td>
<td>0.927</td>
<td>0.910</td>
</tr>
<tr>
<td>90th</td>
<td>1.957</td>
<td>2.048</td>
<td>2.461</td>
<td>3.258</td>
<td>1.478</td>
<td>1.445</td>
<td>1.391</td>
<td>1.525</td>
</tr>
</tbody>
</table>

**UNITED STATES**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10th</td>
<td>0.206</td>
<td>0.216</td>
<td>0.199</td>
<td>0.187</td>
<td>0.192</td>
<td>0.180</td>
<td>0.179</td>
<td>0.183</td>
</tr>
<tr>
<td>25th</td>
<td>0.476</td>
<td>0.476</td>
<td>0.438</td>
<td>0.414</td>
<td>0.406</td>
<td>0.413</td>
<td>0.407</td>
<td>0.399</td>
</tr>
<tr>
<td>Median (50th)</td>
<td>0.767</td>
<td>0.778</td>
<td>0.729</td>
<td>0.689</td>
<td>0.674</td>
<td>0.689</td>
<td>0.692</td>
<td>0.662</td>
</tr>
<tr>
<td>75th</td>
<td>1.138</td>
<td>1.139</td>
<td>1.070</td>
<td>1.000</td>
<td>0.972</td>
<td>0.998</td>
<td>0.997</td>
<td>0.969</td>
</tr>
<tr>
<td>90th</td>
<td>2.092</td>
<td>2.140</td>
<td>2.045</td>
<td>1.910</td>
<td>1.646</td>
<td>1.765</td>
<td>1.619</td>
<td>1.710</td>
</tr>
</tbody>
</table>

...and in the professional liability experience of 1984 to 1987, profitability had been approximately 83 in the overall ratio 59 in positive terms, particularly high profitability for the California automobile insurers. Indeed, the opposite is the case as there is consistently a loss ratio difference in the vicinity of 0.1 throughout the four-year period preceding reforms. These high loss ratios no doubt created cost pressures for firms, leading firms in California to raise premiums in an attempt to improve their profitability. Thus, the rise in insurance premiums before Proposition 103, which will be documented below, can be traced to legitimate cost pressures, at least compared with the automobile insurance performance throughout the rest of the country.

In the 1988-1991 period, the loss ratio performance for the median U.S. firms was almost invariant since 1987, as these loss ratio values fluctuated over the very narrow band from 0.66 to 0.69. In contrast, California exhibited dramatic improvements in the loss ratio performance, as the median loss ratio declined from 0.83 in 1987 to 0.76 in 1988, subsequently decreasing to 0.67 in 1991. Throughout the 1989-1991 period, California had achieved rough parity in profitability with the rest of the United States, with loss ratios within 0.03 of the overall U.S. value. This shift represents a dramatic narrowing of the profitability gap beginning the year after the reforms were enacted. Rather than decreasing profitability, the enactment of the reforms was coupled with a surge in the relative profitability of California’s automobile insurance companies.

The locus of the reform effects also is quite interesting as well. Figure 3 distinguishes the loss ratio distribution according to different percentiles. The most profitable 10 percent of the industry (the 10th percentile) had premiums more than double the size of losses throughout the entire period.
However, even in the case of this group, there was some modest increase in profitability as loss ratios declined from 0.52 in 1987 to 0.36 in 1988, subsequently decreasing to 0.26 in 1990 and 1991. The 25th percentile also exhibited a modest improvement in the loss ratio performance in both 1988 and 1989. Once one moves to the end of the distribution with the least profitable firms, one begins to observe greater shifts. In the case of the 75th percentile, the largest single year shift occurred between 1987 and 1988, the year in which the reforms were enacted, as loss ratios declined by 0.16. Similarly, for the least profitable 10 percent of the distribution, there was a dramatic turnaround in the loss ratio performance. Loss levels had been two times as great as premiums beginning in 1984, increasing to more than three times the level of premiums in 1987. However, there was a dramatic reversal of this trend in 1988. The loss ratio value for the 90th percentile plummeted from 3.3 to 1.5 in a single year, and remained at that level thereafter.

Although there was clearly an overall market-wide improvement in profitability in California, by far the starkest change was the dramatic turnaround in the profitability of the least profitable segment of the market. Although loss ratios for the high loss ratio firms continued to remain above those of other segments of the market in any of the years listed in the figure, the profitability performance was much less extreme than before.

These improvements in profitability did not appear to be the result of greatly increased premium levels. Before the passage of Proposition 103, average premium levels for firms had almost doubled from 1984 to 1987, as they rose from $11 million per firm to $20 million per firm. In the 1988-1991 period, premium levels were fairly stable, as they fluctuated from $23 million to $24 million per firm, which was a very narrow variation, particularly compared with the rapid premium growth earlier.

As the statistics in the right panel of Figure 4 indicate, the U.S. automobile insurance market also exhibited a rise in premiums from 1984 to 1987. The increase for the overall U.S. market was on the order of 50 percent, as contrasted with roughly an 80 percent increase in California. Each of these markets exhibited relative premium stability in the latter 1980s and early 1990s. As a consequence, the difference between California and the rest of the United States was largely one of degree. There was stabilization in the automobile insurance market premiums throughout the country after an earlier increase in the 1980s. However, the extent of the additional premium surge from which subsequent instability emerged was much greater in the case of California. In effect, the trend that was reversed represented a more dramatic turnabout for California than in the rest of the nation.

Judged on the basis of its avowed intent, the California reforms achieved their purported objective. Premium levels stabilized, even more so than in the rest of the country. Moreover, the fears expressed with respect to the potential adverse effects of the reform effort do not appear to be evident.
Rather than exhibiting diminished profitability after the reforms, firms in California experienced substantial increases in profitability. This surge in profitability, which was concentrated particularly among the least profitable firms in the industry, was much greater than the United States as a whole.

THE GENERAL LIABILITY REFORMS AND INSURANCE MARKET BEHAVIOR

The 1986 liability reforms had a quite different intent than assisting consumers. By dampening the amount of damages that could be awarded under various circumstances and limiting the conditions under which firms would have to pay damages, these reform efforts should have lowered liability insurance costs. The immediate beneficiaries would be the insurance companies that have written the insurance coverage. In the long run, one would expect some of these gains to be passed on to companies that purchase such insurance as well as to the consumers whose prices reflect higher liability insurance costs.

Figure 5 summarizes the loss ratio trends for California and the United States medical malpractice insurance companies. Before the enactment of the California reforms of 1986, losses almost equaled the value of premiums, as the loss ratio had risen to 0.96 in 1985. Whereas the loss ratio had risen by 0.05 from 1984 to 1985, this pattern was reversed in 1986. In only a single year, the loss ratio dropped by 0.27. The loss ratio continued to exhibit some improvement thereafter, although it remained approximately in the 0.57-0.62 range from 1988-1991.

The majority of states enacted liability reforms in 1985 and 1986, and these improvements were reflected in
the overall United States trends as well. These loss ratios also exhibited improvements during the mid-1980s. However, several observations are noteworthy. First, the base from which California started was much more favorable than the United States as a whole. The median general liability loss ratio for the U.S. was 0.63, as contrasted with 0.96 for California. Second, the extent of the improvement experienced in the rest of the United States was much less than in California. The loss ratio decline in the rest of the United States was 0.13 from 1985 to 1986, whereas California experienced a decline of 0.27. Finally, even after adopting the liability reforms that it did, the overall loss ratios in California are consistently above those for the United States as a whole. Excluding possible differences in underwriting costs across states, the profitability of writing insurance in California continues to be a bit below that of the rest of the United States.

As in the case of the improvements in the automobile insurance market, the sources of the stark improvement in the general liability insurance market in California were not uniformly distributed across the market. As the data in Figure 5 indicate, the most profitable 10 percent of firms appear to exhibit a one-time shift in profitability, as did the median, but their improved profitability was a loss ratio change of only 0.07. The firms in the 25th percentile exhibited a loss ratio improvement of comparable magnitude, which is also much smaller than that exhibited by firms at the median. Firms at the 75th percentile, which have a much lower rate of profitability, experienced a loss ratio improvement of 0.46 in 1986, the year in which the reforms were enacted. Although loss ratios increased subsequently in
1987, this appears to have been a one-time only change as loss ratios declined and remained well below their 1985 level thereafter. The most volatile segment of the market, the 90th percentile, continued to be very unprofitable throughout the period, but this segment did exhibit an improvement in their loss ratio of 1.86 from 1985 to 1986. The most unprofitable firms in the industry experienced the largest absolute gains, but there appears to have been a relative improvement in insurance performance throughout the entire market as all firms appear to have benefited from the liability reform effort.

The overall premium levels in California exhibited a spectacular rise in the early 1980s that abated after the reforms were enacted. General liability premiums soared from $2.9 million per firm in 1984 to $8.2 billion per firm in 1986. Although there is a somewhat modest increase until 1987 when premiums reached $8.8 billion dollars per firm, this amount decreased thereafter. The liability reforms consequently seemed to have had an influence in stabilizing premium levels. One would expect this effect to have occurred with a slight lag since premiums are adjusted once changes in loss performance are observed. The loss ratios in 1986, for example, were not observable by firms since there is a lag before claims are resolved. It will consequently be in later years that shifts in loss ratio performance are exhibited, and then the data in Figure 6 seem to bear out this pattern.

The overall pattern of premiums is also similar to that in the United States, as premiums rose from $721,000 per firm in 1984 to a high of $1.87 million per firm in 1987. Premium trends

<table>
<thead>
<tr>
<th>Year</th>
<th>California Premiums ($000)</th>
<th>U.S. Premiums ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>2,907</td>
<td>721</td>
</tr>
<tr>
<td></td>
<td>(6,317)</td>
<td>(3,480)</td>
</tr>
<tr>
<td>1985</td>
<td>4,549</td>
<td>1,046</td>
</tr>
<tr>
<td></td>
<td>(10,149)</td>
<td>(4,777)</td>
</tr>
<tr>
<td>1986</td>
<td>8,183</td>
<td>1,782</td>
</tr>
<tr>
<td></td>
<td>(21,315)</td>
<td>(8,524)</td>
</tr>
<tr>
<td>1987</td>
<td>8,847</td>
<td>1,869</td>
</tr>
<tr>
<td></td>
<td>(24,083)</td>
<td>(9,192)</td>
</tr>
<tr>
<td>1988</td>
<td>7,661</td>
<td>1,666</td>
</tr>
<tr>
<td></td>
<td>(21,110)</td>
<td>(8,605)</td>
</tr>
<tr>
<td>1989</td>
<td>7,027</td>
<td>1,493</td>
</tr>
<tr>
<td></td>
<td>(20,040)</td>
<td>(8,137)</td>
</tr>
<tr>
<td>1990</td>
<td>7,732</td>
<td>1,468</td>
</tr>
<tr>
<td></td>
<td>(26,363)</td>
<td>(8,491)</td>
</tr>
<tr>
<td>1991</td>
<td>6,178</td>
<td>1,301</td>
</tr>
<tr>
<td></td>
<td>(18,180)</td>
<td>(6,517)</td>
</tr>
</tbody>
</table>
are fairly similar both for California and the United States. Interpreting the implications of shifts in premium levels is somewhat problematic since premiums reflect both the size of the market as well as the changes in the rate charged. If insurance firms denied coverage to prospective companies that wanted to purchase insurance, premium volume would have declined, but this would not be a sign of good health in the insurance industry. Because of these difficulties, a more pertinent measure of the overall character of insurance market performance is the loss ratio trend, which is consistent with the effect of California reforms in enhancing insurer profitability.

THE MEDICAL MALPRACTICE REFORMS AND INSURANCE MARKET BEHAVIOR

The patterns for medical malpractice are in many respects the counter-part of general liability. Each of these markets exhibited a similar pattern of liability crisis. As the data in Figure 7 indicate, the median loss ratio for medical malpractice rose from 0.83 in 1984 to 0.94 in 1985. Following the enactment of the liability reforms, medical malpractice loss ratios dropped to 0.73 in 1986 and 0.60 in 1987, and they remained at roughly that level thereafter. A similar pattern was exhibited by the median performance of the rest of the United States, most of which also adopted liability reforms, as the average U.S. medical malpractice loss ratio in 1985 was comparable to that for California. The magnitude of the improvement in loss ratios was similar as well. However, one difference in performance is that California continued to exhibit an immediate downward shift in loss ratios in 1987, which was one year earlier than this shift occurred throughout the United States. The overall effect of

| Figure 7 |
| Loss Ratio Trends for Medical Malpractice Insurance in California and in the United States, 1984-1991 |
| **CALIFORNIA** |  |  |  |  |  |  |  |  |  |
| 10th | 0.215 | 0.277 | 0.259 | 0.232 | 0.315 | 0.184 | 0.155 | 0.178 |
| 25th | 0.320 | 0.439 | 0.502 | 0.407 | 0.465 | 0.311 | 0.350 | 0.352 |
| Median (50th) | 0.833 | 0.944 | 0.733 | 0.600 | 0.622 | 0.636 | 0.578 | 0.617 |
| 75th | 2.294 | 2.163 | 1.460 | 0.891 | 1.065 | 1.549 | 0.939 | 0.772 |
| 90th | 5.885 | 79.426 | 22.727 | 1.852 | 1.713 | 11.190 | 2.400 | 2.031 |

| **UNITED STATES** |  |  |  |  |  |  |  |  |  |
| 10th | 0.112 | 0.159 | 0.167 | 0.174 | 0.143 | 0.155 | 0.087 | 0.160 |
| 25th | 0.334 | 0.440 | 0.388 | 0.413 | 0.378 | 0.321 | 0.286 | 0.338 |
| Median (50th) | 0.770 | 0.953 | 0.776 | 0.721 | 0.600 | 0.600 | 0.564 | 0.566 |
| 75th | 2.148 | 2.122 | 1.646 | 1.264 | 1.020 | 1.107 | 1.003 | 1.002 |
the California liability reforms appears to have been to stabilize the insurance market and to hasten the improvement on the medical malpractice insurance market relative to the rest of the country. By the latter part of the sample period, the profitability of insurance in California was comparable to that or a bit worse than that of the rest of the country.

Because of the smaller sample involved in the case of medical malpractice, examination of the performance of different segments of the distribution using the detailed data in Figure 7 creates somewhat more uneven patterns. As in the case of the other lines of insurance, the performance improvements exhibited at the 10th percentile and 25th percentile appear to be less great than at the median. The shifts that follow the adoption of the reform were quite strong in the case of the 75th percentile and the 90th percentile. However, the volatility of these results given the small number of firms in the market makes inferences difficult. To take the most extreme case, at the 90th percentile the loss ratio dropped from 79.4 in 1985 to 22.7 in 1986 and to 1.9 in 1987, only to bounce back with a temporary increase to 11.2 in 1989. One should consequently be cautious in going beyond the median firm performance when interpreting these results because of the thinness of the market.

The medical malpractice premium pattern in Figure 8 is also consistent with a general stabilization of the mar-

<table>
<thead>
<tr>
<th>Year</th>
<th>California Premiums ($000)</th>
<th>U.S. Premiums ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>5,665 (17,678)</td>
<td>1,047 (6,078)</td>
</tr>
<tr>
<td>1985</td>
<td>8,402 (20,438)</td>
<td>1,464 (8,292)</td>
</tr>
<tr>
<td>1986</td>
<td>13,370 (31,504)</td>
<td>2,479 (11,820)</td>
</tr>
<tr>
<td>1987</td>
<td>12,513 (29,799)</td>
<td>2,599 (12,089)</td>
</tr>
<tr>
<td>1988</td>
<td>13,335 (30,624)</td>
<td>2,645 (12,504)</td>
</tr>
<tr>
<td>1989</td>
<td>9,703 (24,747)</td>
<td>2,396 (11,465)</td>
</tr>
<tr>
<td>1990</td>
<td>6,732 (18,495)</td>
<td>2,119 (10,677)</td>
</tr>
<tr>
<td>1991</td>
<td>5,315 (14,920)</td>
<td>1,919 (9,675)</td>
</tr>
</tbody>
</table>
ket. The stabilization in premium growth, which soared from 1984 to 1986, occurred in 1987. As in the case of general liability, the premium stabilization occurred one year after the loss ratio stabilization. This pattern reflects the lags in incorporating loss ratio improvements into the premium structure. After exhibiting stable premium levels through 1988, premium levels declined through 1991. It is not clear from these data whether this decline is the result of lower rates being charged for policies or firms choosing to exit the market through various kinds of self-insurance options.

CONCLUSION

California represented a large-scale laboratory for testing the effects of different kinds of insurance reforms on market performance. In the case of both the liability reforms and the automobile insurance premium limits, the impetus for the reforms was an emerging trend involving rising premium levels and, in the case of medical malpractice and general liability, dramatically falling profitability levels as well.

The post-reform trends in insurance market behavior reflect the kinds of outcomes one would expect if reform efforts do in fact have an impact. This is what one would expect to be the case unless for some reasons juries were to adjust their behavior to circumvent the reforms or firms found a way to avoid the dampening effects on premiums. After the enactment of liability reforms, there was a dramatic increase in the profitability of insurance firms. In the case of general liability insurance, where these trends across the market could be better distinguished, these improvements were greatest at the least profitable segment of the market distribution. Premium levels also abated, but this dampening in the premium growth occurred with a lag after the loss ratio improvement. This lag is not unexpected given the inability of firms to observe the premium performance for policies written in a particular year until after claims are ultimately filed.

Whereas the trends for general liability and medical malpractice followed the expected patterns, Proposition 103’s effect on automobile insurance presented more surprises. Premium levels did decline, as was the intent of Proposition 103. This decrease was quite stark and much greater than that exhibited by that of the rest of the United States.

However, what was more noteworthy was that these improvements did not come at the expense of insurer profitability. Rather than exhibiting a decline in profitability following the adoption of Proposition 103, there was a substantial improvement in profitability which remains quite high relative to the rest of the country. The reasons for this increase are unclear. We do not know, for example, whether public concern with cost pressures affected the magnitude of jury awards, or whether firms became more cost conscious and more efficient. Another possibility is that firms may have paid off fewer legitimate claims than before. Which of these alternative explanations is correct will ultimately influence our assessment of how successful the reforms were. However, based on the statistical evidence that
is available, the reforms appear to be an unqualified success, running counter to what some of the reform critics suggested at the time of their enactment.

References


**Endnotes**


3The Rand Corporation studies of the California medical malpractice reforms and the overall performance of that market more generally are examined in Patricia M. Danzon, *Medical Malpractice* (1985).

4One study concluded that consumers immediately benefited from the 20 percent reduction in rates, the insurance industry probably suffered. They find that stock prices decreased for the whole sample of insurers; firms with a large California exposure were not found to be more greatly affected. See Roger M. Shelor & Mark L. Cross, “Insurance Firm Market Response to California Proposition 103 and the Effects of Firm Size,” *57 Journal of Risk and Insurance* (1990).


6See Paul Joskow & Linda McLaughlin, “McCarran-Ferguson Act Reform: More Competition or More Regulation?” *4 J. Risk Unc.* (1991), for discussion of competitiveness in the property-
casualty insurance industry. The experience in California following the adoption of a "no-filing" regulatory statute in 1947 is discussed in Joskow, "Cartels, Competition and Regulation in the Property-Liability Insurance Industry," 4 Bell J. Econ. (1973).

Proposition 103 also repealed the insurance industry's state antitrust exemption and opened up the market to banks.


California Insurance Commissioner Roxanni Gillespie determined this rate to be 11.2 percent of statutory equity. The figure was based on an historical average of industry rates of return. See Frederick Mendelsohn, "The California Quagmire," *Best's Review* (1991).

These and the statistics in the following sentence are drawn from overall state premium totals calculated using the National Association of Insurance Commissioners database to be described below.

MICRA's provisions include a $250,000 cap on noneconomic damages; periodic payment of awards over $50,000; collateral source reduction at the court's discretion; a three-year statute of limitations from the date of injury, or one year from discovery; and a sliding-scale limit on attorney contingency fees. See "What California's Reforms Have and Haven't Achieved," *Medical Economics* (1994).

Health care costs in California rose 143.9 percent from 1980 to 1990, compared to the national average of 138.7 percent. See Brad Cohn, "Tort Reform: Past, Present and Future," 74 *American College of Surgeons Bulletin*.

Proposition 103 did not restrict firms from leaving the market, and several companies did withdraw. Much of the reduction in the number of companies operating in California may be accounted for by mergers.

A competitive market structure is not assured if, for example, a small number of firms control most of the market. California has historically been viewed as a relatively competitive state. See Joskow, supra note 6.
