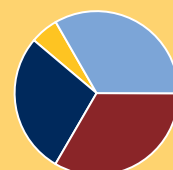


# The Long-Term Effects of Rate Regulatory Reforms in Automobile Insurance Markets

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Insurance  
Research  
Council





# **The Long-Term Effects of Rate Regulatory Reforms in Automobile Insurance Markets**

**Sharon Tennyson, PhD**

**Insurance Research Council  
March 2012**

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John Ittner  
Insurance Research Council Advisory Board, Chairman



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## Executive Summary

Through the examination of automobile insurance markets of several states that introduced regulatory reforms during the past fifteen years, this study provides definitive evidence of the impact of modernizing insurance rate regulation. The automobile insurance markets of South Carolina (reformed in 1999), New Jersey (reformed in 2004), and Massachusetts (reformed in 2008) are studied.

Each of the states studied had a long history of strict rate regulation prior to the reforms but substantially reduced their rate regulation in the reform process. The study examines each state's automobile insurance market performance before and after the regulatory reforms to provide evidence of the effects of the reforms. To account for changes in the national automobile insurance market during this same time period, other states' markets are used as a comparison benchmark—this approach compares how markets in a state changed after regulatory reforms took effect to any changes that occurred over the same time period in states that did not enact a change in regulatory policy. States are compared both before and after reforms because markets may change over time for reasons unrelated to some states' implementation of regulatory reforms. This simple but powerful research design provides strong evidence of the effects of the reforms.

The key outcomes examined for each state are automobile insurance affordability, insurance availability, service quality, and automobile insurance market health. Insurance affordability is measured by examining average expenditures on automobile insurance in each state. Insurance availability is measured by examining the size of residual markets for auto insurance. Service quality is measured by examining the number of consumer complaints received by the state insurance department about automobile insurers in the state. Automobile insurance market health is measured by the extent of uninsured driving, the number and type of insurance suppliers, the mark-up of automobile insurance premiums over losses incurred, and the rates of filing of automobile insurance liability claims for property damage and bodily injury claims. The specific construction of each of these measures and the justifications for their use are developed and explained in detail in the sections that follow.

The results of this study show that regulatory reforms have led to a number of positive developments in the automobile insurance market without leading to increases in insurance prices or reductions in availability of insurance and quality of service. In each state, insurance premium expenditures have declined relative to previous trends or projections; insurance availability has increased or been maintained at previous levels; insurer underwriting results have been maintained or improved to be more consistent with regional or national averages; and underlying claim rates have decreased or been maintained at pre-reform levels. As a consequence of reducing government regulation of rates, insurance market sustainability has been enhanced and there are no adverse trends to suggest that the post-reform outcomes are not sustainable.

Of course, it is not certain that the experiences of South Carolina, New Jersey, and Massachusetts will apply to potential regulatory reforms enacted by other states or in other time periods. Prior to the reforms, these three states were among the most heavily regulated and their regulatory systems had unique features that led to many market distortions. The timing, nature, and extent of reforms differ across the three states; available evidence on the effects of the reforms is limited in some instances, particularly for Massachusetts, which enacted reforms later than the other states. All of these considerations may reduce the ability to generalize from these case studies.

It should also be kept in mind that, while far-reaching, the reforms in these states only reduce government oversight and do not amount to deregulation of automobile insurance rates. Remaining regulations and other features of the automobile insurance system in each state affect market outcomes and performance. Such considerations are no-fault insurance and insurance fraud, both of which have presented significant challenges in some state automobile insurance markets.

These caveats and limitations notwithstanding, the study presents a wealth of evidence that regulatory reform has improved automobile insurance outcomes for both consumers and insurers in South Carolina, New Jersey, and Massachusetts. The favorable performance of the more market-based pricing regimes introduced in these states provides support for the idea that strict government oversight of automobile insurance rate-setting is unnecessary, and may, in some cases, be detrimental for markets and consumers.

# Section 1

## Introduction

Insurance rate regulation is often viewed as a viable or even necessary mechanism to hold the line on high auto insurance prices. Many states in the United States require automobile insurance providers to obtain regulatory approval of their rates . In other states, automobile insurers face the threat of future regulation because legislatures often include such action among possible policy solutions when economic forces lead to rising prices.

This active regulatory environment persists despite the generally competitive nature of automobile insurance markets. Providers in an unregulated auto insurance market are of diverse size and characteristics. Profits are modest in comparison to providers in other industries, while price and product competition are readily apparent. Studies of price inflation generally point to rising loss costs as the main cause of premium increases.<sup>1,2</sup> Under these market conditions, the causes of premium price inflation will not be resolved by regulatory price controls.

A large body of research has produced a consensus among insurance scholars that automobile insurance markets do not require rate regulation to function efficiently and fairly. In fact, research suggests automobile insurance markets in which rates are determined competitively perform better on a wide variety of measures than do regulated markets. However, most of this evidence is obtained from studies that compare outcomes in regulated state markets to those in other states. Although conducted using methods that assure their statistical validity, these comparisons may suffer from concerns that conditions in states which choose to regulate rates differ from those in other states.

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<sup>1</sup> J.David Cummins, ed., *Deregulating Property-Liability Insurance* (Washington, D.C.:Brookings Institution Press, 2002), pp. 1-24.

<sup>2</sup> Sharon Tennyson, "The Impact of Rate Regulation on State Automobile Insurance Markets," *Journal of Insurance Regulation*, 15(4): pp. 502-523.



## Section 2

### Background for the Study

With the exception of two states (Illinois and Wyoming), all U.S. states maintain active oversight of the automobile insurance rates charged to consumers. This means that insurers must provide regulators with detailed statistical justification for the rates that they charge in the market. In a few states, insurer's rate filings are largely informational in nature ("use-and-file" systems); in many other states, insurers must wait until regulators confirm that their rate filings meet regulatory standards before introducing the rates ("file-and-use" systems). Regulators in all of these states maintain the right to recall rates that they find to be excessive, however. In eleven states, insurers are required to wait until receiving regulatory approval for proposed rates prior to their market introduction ("prior approval" states). Six other states sometimes require prior approval, but only in cases where proposed rates differ from existing rates by greater than some pre-specified percentage ("flex-rating" systems).<sup>3</sup>

Although in principle regulators may disapprove rates for being either too low or too high, many studies have shown that regulation generally leads to rates lower than those that would exist under open competition.<sup>4,5</sup> States' regulatory jurisdiction extends to the approval of overall rate levels and of rate differences across driver classes and territories. Rate regulation may therefore operate to restrict rates for the entire market, or may impose rate restrictions only for consumers who face the highest prices (such as those living in urban areas).

In the context of competitive market conditions such as those existing in automobile insurance, lowering insurance rates by means of government regulations often means reducing rates below those that produce a competitive return for insurers. This will reduce insurers' incentives to sell automobile

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<sup>3</sup> Data are from Insurance Information Institute (III), 2009; and Competitive Enterprise Institute's *Property and Casualty Insurance 2009 Report Card* by Eli Lehrer and Michelle Minton, 2009. Both sources note that the stringency of regulatory implementation often varies across states with nominally identical regulatory systems. For example, III notes that Delaware and Mississippi regulations are file-and-use but state regulators report that regulations are implemented as prior-approval.

<sup>4</sup> Scott E. Harrington, "A Note on the Impact of Automobile Insurance Rate Regulation, *Review of Economics and Statistics*, 1987, 69, pp. 166-170.

<sup>5</sup> Scott E. Harrington, "Effects Of Prior Approval Rate Regulation of Auto Insurance," *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press, 2002), pp. 285-314.

insurance in the market, as insurers will prefer to reject those risks for which the difference between expected servicing costs and regulated premium collections are large. This will lead to shortages of insurance supply relative to insurance demand, and more drivers will be relegated to the residual market. Thus, in states for which the regulated rates for some classes of risks are insufficient to permit insurers to yield a competitive return, the residual market will insure a larger proportion of drivers. Insurers will respond to persistent rate suppression by reducing their market share in the state, or, in extreme cases, by exiting the market. Nor will insurers want to enter a market in which rates are suppressed or in which future rate suppression is likely or possible. Regulatory constraints can also change the nature of competition among firms. Prices and product features will be less responsive to changes in consumer demand or to other market conditions if firms must seek approval for rate changes. A reduced threat of competitor entry may also dampen incentives for innovation. These effects suggest that stringent regulation of insurance rates will lead—over the long run—to a market with fewer firms and less vigorous competitive dynamics.

There is substantial evidence that insurance market supply responds adversely to rate regulation. Studies have shown that the relative number of insurance providers is lower in stringently regulated states than in less regulated states, and that the nature of firms operating in regulated markets is distorted toward less efficient firms.<sup>6, 7, 8</sup> Other research has found that when rate regulation significantly depresses automobile insurance rates below predicted levels, the proportion of drivers insured in the residual market increases.<sup>9, 10</sup>

Furthermore, a growing body of empirical research concludes that rate regulation ultimately results in higher costs for insurance consumers. Recent studies of automobile insurance find states that impose rate regulation experience significantly higher average loss costs and insurance claim

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<sup>6</sup> Paul L. Joskow, "Cartels, Competition and Regulation in the Property-Liability Insurance Industry," *The Bell Journal of Economics and Management Science* 1973, 4, pp. 375-427.

<sup>7</sup> Mary A. Weiss and B. Paul Choi, "State Regulation and the Structure, Conduct, Efficiency and Performance of US Auto Insurers," *Journal of Banking and Finance*, 2008, 32, pp. 134-156.

<sup>8</sup> Sharon Tennyson, "The Impact of Rate Regulation on State Automobile Insurance Markets," *Journal of Insurance Regulation*, 1997, 15, pp. 502-523.

<sup>9</sup> Scott E. Harrington, "The Relationship Between Voluntary and Involuntary Market Rates: Regulation in Automobile Insurance," *Journal of Risk and Insurance*, 1990, 57, pp. 9-27.

<sup>10</sup> Henry Grabowski, W.Kip Viscusi, and William S. Evans, "Price and Availability Tradeoffs of Automobile Insurance Regulation," *Journal of Risk and Insurance*, 1989, 56, pp. 275-299.

frequency, and that more stringent regulation is associated with a greater increase in losses and claim frequency.<sup>11, 12</sup>

The factors producing excess cost growth include the distortions to suppliers and residual markets discussed above. For example, residual markets typically run deficits. In many regulated states, regulators permit residual market losses to be passed on to drivers insured in the voluntary market. Insurance rate regulation also produces distortions to driving, insuring, and claiming decisions by disrupting market pricing and profit mechanisms. Consumers who do not bear the full premium costs of their insured risk are more likely to drive, to purchase insurance, and to purchase larger amounts of insurance. Because of higher accident rates associated with lower safety incentives or moral hazard and fraud incentives, consumers protected from cost increases will be more likely to file insurance claims. Consistent with these ideas, research has shown that regulated price subsidies lead to higher cost growth among subsidized driver classes or territories and that insurance claims fraud has been a significant problem in some regulated markets.<sup>13, 14</sup>

In a 2002 volume published by the AEI-Brookings Joint Center for Regulatory Studies, in-depth case-studies of the three states examined here concluded that rate regulation produced these types of adverse outcomes.<sup>15</sup> The states of South Carolina, New Jersey, and Massachusetts each experienced large residual markets, reduced insurance supply, and excessive cost growth in years when they were stringently regulated. In some years these states saw over 40 percent of drivers insured through the residual automobile insurance market.<sup>16</sup> Large, national insurers exited the automobile insurance market or reduced their market shares. Yet, despite the fact that rates were held to levels which

<sup>11</sup> Mary A. Weiss, Sharon Tennyson, and Laureen Regan, "The Effects of Regulated Premium Subsidies on Insurance Costs: An Empirical Analysis of Automobile Insurance," *Journal of Risk and Insurance*, 2010, 77, pp. 597-624.

<sup>12</sup> Laureen Regan, Sharon Tennyson, and Mary A. Weiss, "The Relationship between Auto Insurance Rate Regulation and Insured Loss Costs: An Empirical Analysis," *Journal of Insurance Regulation*, 2008, 27, 23-46.

<sup>13</sup> Sharon Tennyson, "Incentive Effects of Community Rating in Insurance Markets: Evidence from Massachusetts Automobile Insurance," *Geneva Risk and Insurance Review* 2010, 35, 19-46.

<sup>14</sup> Herbert I. Weisberg and Richard A. Derrig, "Fraud and Automobile Insurance: A Report on the Baseline Study of Bodily Injury Claims in Massachusetts," *Journal of Insurance Regulation*, 9, 1991, pp. 497-541.

<sup>15</sup> J. David Cummins, ed., *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), 2002.

<sup>16</sup> This rose as high as 73 percent in Massachusetts (in 1989). Sharon Tennyson, Mary A. Weiss, and Laureen Regan, "Automobile Insurance Regulation: The Massachusetts Experience", in J. David Cummins, ed. *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), pp. 25-80.

reduced insurers' profits below those in other states, insurance costs continued to rise.<sup>17</sup> The experiences of these states demonstrate the negative consequences of over-regulation of automobile insurance rate setting.

In response to the severe problems in their automobile insurance systems, the states introduced regulatory reforms intended to reduce government involvement and to allow insurers more flexibility in setting rates. South Carolina passed a comprehensive reform bill in 1997 (1997 S.C. Acts 154), with reforms becoming effective in 1999. Among other important changes, a flex-rating system was substituted for the strict prior approval system previously in place. Under the new system, insurers do not need prior approval to implement rate changes that are less than or equal to seven percent. The new system also allows for regulatory flexibility in approving rate changes larger than seven percent. Restrictions on rate classifications, merit rating, and rating territories were also relaxed, allowing insurers greater flexibility in establishing insurance rates.

Regulatory reform legislation embodied in the Automobile Insurance Competition and Choice Act was signed into law in New Jersey in June of 2003, with reforms becoming effective in 2004.<sup>18</sup> While keeping the main regulatory structures in place, the law modified or removed the most restrictive provisions, with the intent of allowing insurers more flexibility in pricing and underwriting decisions. Most important was the phasing out of the "take all comers" rule, which prevented insurers from cancelling policies of high risk drivers while simultaneously capping the rates that these drivers could be charged, creating severe shortages of insurance. Regulatory caps on rates loosened, the rate approval process became more efficient, and restrictions on insurer profits eased.

The Massachusetts reforms did not require legislation because the rating law itself did not change. Massachusetts has long operated under a file-and-use system, but with a unique provision that allows the insurance commissioner to hold an annual hearing to determine whether competition is feasible and to impose state-set rates if it is not. In every year from 1978 through 2006, competition was found not to be viable and state-set rates were imposed. In 2007, this tradition was reversed.<sup>19</sup> A system of "managed competition" was

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<sup>17</sup> Richard A. Derrig and Sharon Tennyson, "The Impact of Rate Regulation on Claims: Evidence from Massachusetts Automobile Insurance," *Risk Management and Insurance Review*, 2011, 14, pp. 173-200.

<sup>18</sup> New Jersey Senate Bill 63/House Bill 2625.

<sup>19</sup> Nonnie S. Burnes, "Opinion, Findings, and Decision on the Operation of Competition in Private Passenger Motor Vehicle Insurance in 2008," Massachusetts Division of Insurance Docket No. R2007-03, July 16, 2007.



allowed to begin in 2008. Under managed competition, firms may set their own rates and offer discounts and product variations, subject to state prior approval and a variety of restrictions on underwriting.<sup>20</sup>

This brief description of reforms makes it clear that automobile insurance prices in these states remain under the state's active oversight. Nonetheless, the reforms in each state reduced the artificial restrictions of regulation and moved the markets closer to open competition. This study examines the impact of these regulatory changes for consumers and insurers.

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<sup>20</sup> For example, age, sex, income, and credit history may not be used in underwriting; and state-determined rating territories remain in force.



## Section 3

### Study Methods

The effects of regulatory reforms are documented by examining important indicators of market performance in each of the three study states before and after the regulatory reforms took effect. Using other states' markets as a comparison benchmark helps establish the baseline of change that may have been experienced if no reform had taken place. We compare the states both before and after enactment of regulatory reforms because markets may be different over time for reasons unrelated to implementation of reforms. This simple but powerful research design provides strong evidence of the effects of the reforms in the markets studied. When reading this study, it should be kept in mind that regulatory reforms evolve in a market over time and this may slightly blur the distinction between pre-reform and post-reform time periods. For example, in each state the comprehensive reform packages were preceded by more limited reforms in previous years, and the final implementation of the reform packages occurred many months after their announcement.

The key outcomes examined for each state are automobile insurance *affordability*, *availability*, *service quality*, and *market health*. The specific construction of each measure of these outcomes and the justifications for their use are developed and explained in detail in the sections that follow.

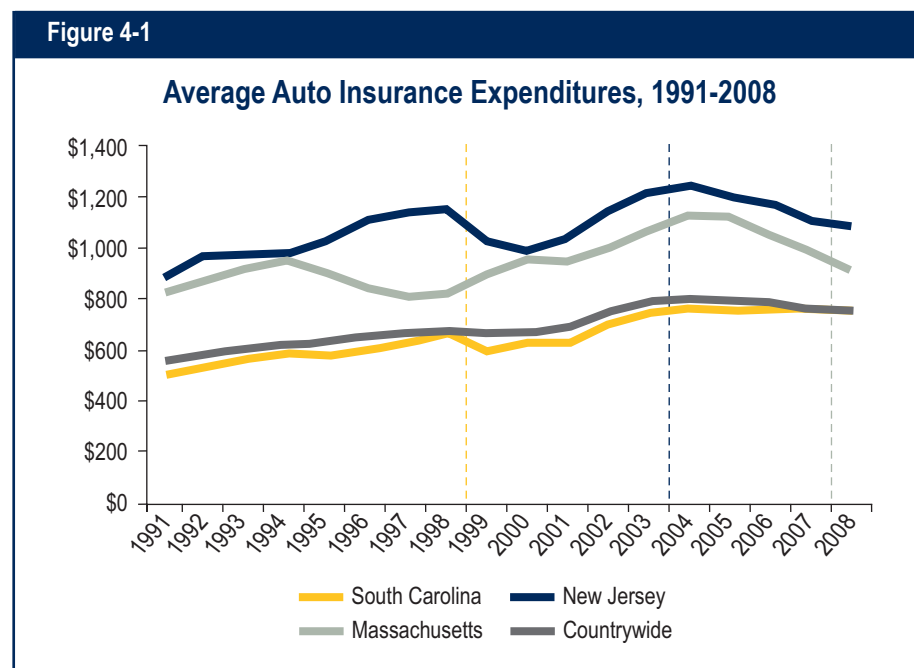


## Section 4

### Insurance Affordability

Insurance affordability is an important concern for many drivers and is the primary objective of insurance rate regulation. As noted previously, rising premium expenditures are often a catalyst for imposing insurance rate regulation in a state. Similarly, consumers' fears that deregulation will lead to premium increases often play a major role in opposition to regulatory reforms. These fears have not been borne out in the states studied here.

This is demonstrated in Figure 4-1 below, which plots the national average auto insurance premium expenditure for years 1991 through 2008 (latest year available) against the averages for South Carolina, New Jersey, and Massachusetts. The comparisons use the annual average premium expenditure in each state for years 1991 through 2008 (the latest year of data available) published by the National Association of Insurance Commissioners (NAIC).



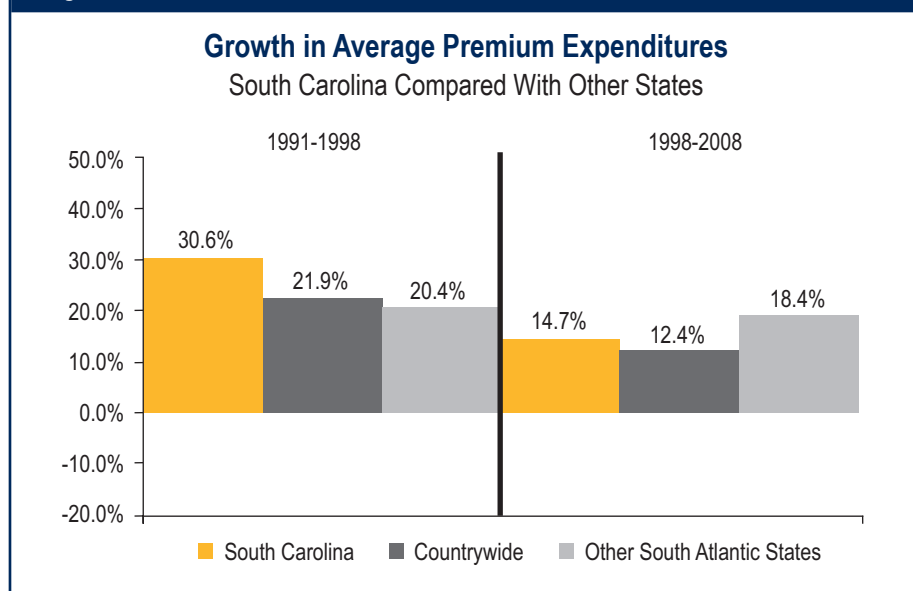
The figure shows that prior to the reforms in 1999, the average premium expenditure for an auto insurance consumer in South Carolina was just about the same as the national average, and remained there after the regulatory reforms. In New Jersey, average premium expenditures are much higher than the national average both prior to and after the regulatory reforms took effect in 2004. This pattern is also true for Massachusetts both before and after the reforms implemented in 2008. Cyclical patterns are apparent in all states' expenditures, and these may account for some of the apparent declines in expenditures in the later post-reform years. Even so, differences in expenditure growth patterns are hard to observe in the figure, consistent with the idea that reforms did not lead to dramatic premium increases. More direct comparisons of the pre-reform and post-reform periods in each state demonstrate that the regulatory reforms had a beneficial effect on auto insurance affordability, relative to the trends that prevailed under rate regulation. Figures 4-2, 4-3, and 4-4 illustrate these relative gains. Each figure compares a state's overall premium growth in the period prior to and after which reforms were introduced to the average growth countrywide and premium growth in surrounding states.

Figure 4-2 shows the (total) percentage premium growth in South Carolina relative to the countrywide average and to other states in the Southeast in the regulated period 1991 to 1998, and in the post-reform period 1998 to 2008. Average premium expenditures for South Carolina drivers grew faster than the national average and regional average in the regulated period—30.6 percent in South Carolina compared with 21.9 percent nationally and 20.4 percent regionally.<sup>21</sup> In the post-reform period 1998 to 2008, South Carolina's premiums still grew more rapidly than the national average, but the rate of excess growth was much smaller—14.7 percent versus 12.4 percent. Moreover, expenditure growth in South Carolina was below that in other South Atlantic states, where average auto insurance expenditures grew 18.4 percent.

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<sup>21</sup> The other states in the South Atlantic region are Delaware, Maryland, North Carolina, Virginia, and West Virginia.

Figure 4-2



The trends in average automobile insurance expenditures for drivers in New Jersey and Massachusetts post-reform have been even more favorable. Figure 4-3 shows that between 1991 and 2003 the average automobile insurance premium expenditures in New Jersey grew 35.8 percent, compared with a 42.5 percent increase for the nation as a whole and a 47.7 percent increase for other states in the Mid-Atlantic region.<sup>22</sup> In contrast, between 2003 and 2008 average premium expenditures declined by 9.4 percent in New Jersey while expenditures fell by only 3.8 percent nationwide, and grew by 1.6 percent in other Mid-Atlantic states.

In Massachusetts (Figure 4-4) the average expenditure on automobile insurance grew 20.5 percent from 1991 through 2007, compared with 38.6 percent nationally and 22.5 percent in the other New England states.<sup>23</sup> Between 2007 and 2008 the average expenditure on automobile insurance in Massachusetts declined by 7.9 percent. In that same year, expenditures declined nationally by an average of only 1.1 percent, and in other New England states by 2.2 percent.

<sup>22</sup> The other states in the Mid-Atlantic region are New York and Pennsylvania.

<sup>23</sup> The other states in New England are Connecticut, Maine, New Hampshire, Rhode Island, and Vermont.

Figure 4-3

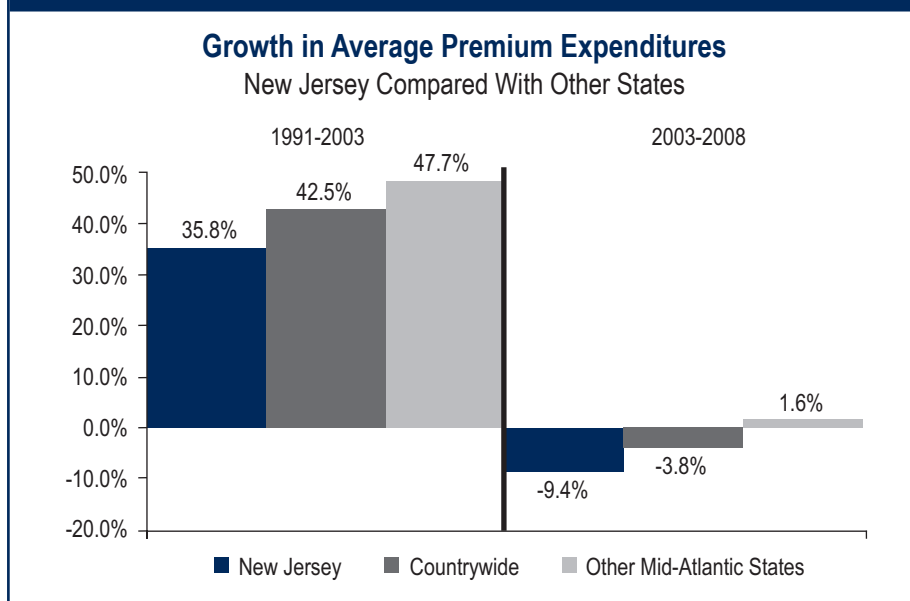
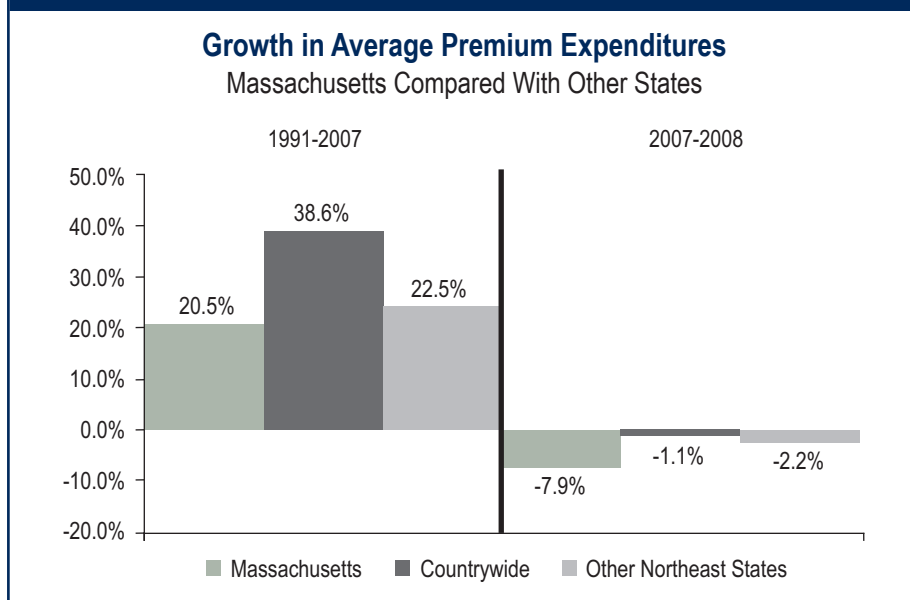


Figure 4-4





Of course, the cost of automobile insurance varies over time and across states because of variances in the demographic and insurance characteristics that determine the frequency and severity of auto accidents, accident-related injuries, and insurance claims. Previous studies have found that automobile insurance costs vary with state demographic and economic characteristics such as traffic density, household income and the costs of medical care; and state insurance requirements such as minimum compulsory liability amounts, the existence of first party (no-fault) benefits, and maximum payments for first party benefits.<sup>24, 25, 26</sup>

Because of these influences, which vary across states and years, a precise estimate of the effects of reforms on average automobile insurance premium expenditures requires a multivariate regression. The regression analysis combines the NAIC data on average auto insurance expenditures for each state with data on state characteristics and auto insurance requirements. The effect of regulatory reform is estimated by examining whether a state's average automobile insurance expenditure relative to other states—after accounting for these other explanatory factors—is significantly larger or smaller in the post-reform years than in the years prior to reforms.<sup>27</sup>

The estimated model takes the basic form seen below, where *Postreformyears<sub>st</sub>* is an indicator variable set equal to one in the years following regulatory reforms in a state and set equal to zero in other years. The impact of reforms on average premium expenditures is identified by including the interaction of a reform state (0-1) indicator (*Reformstate<sub>st</sub>*) with the post-reform years: *Reformstate<sub>st</sub>Postreformyears<sub>st</sub>*. Including the indicator variable *Postreformyears<sub>st</sub>* separately as well as interacted with the reform-state indicator means that the estimates test for differences in a state's post-reform expenditures after accounting for any countrywide effects on average automobile insurance expenditures that occur in those years.

$$\ln(\text{Average Expenditure})_{st} = \beta_0 + \beta_1 \text{Postreformyear}_{st} + \beta_2 \text{Reformstate}_{st} \text{Postreformyear}_{st} + \delta_1' \text{OtherStateCharacteristics}_{st} + \delta_2' A_{st} + \delta_3' T_t + \varepsilon_{st}$$

The entire list of variables included in the regression model is described in Appendix A. Of particular note, in recognition of the cyclical nature of automobile insurance markets as seen in Figure 4-1, one of the variables included in the set of control variables is the lagged statewide average

<sup>24</sup> Derrig and Tennyson, 2011, pp. 173-200.

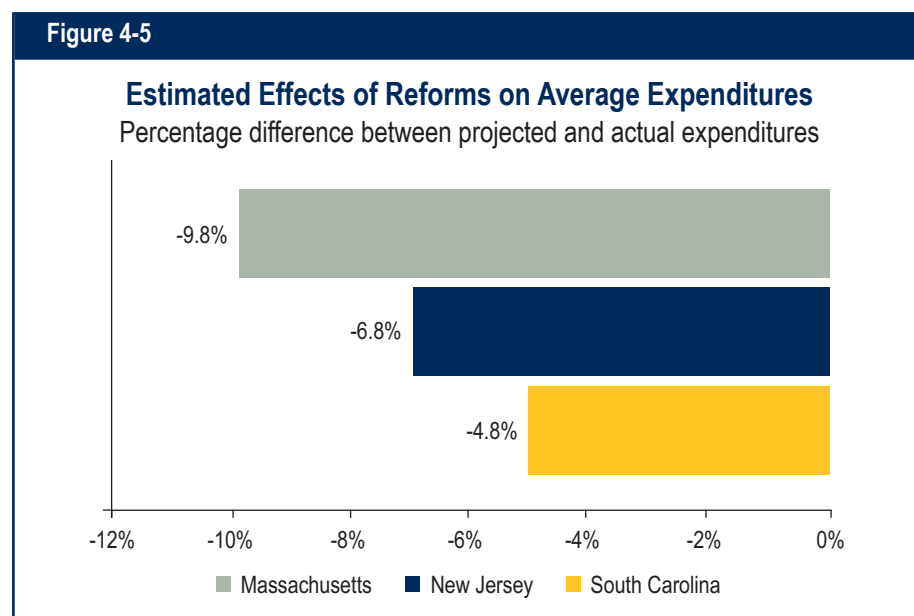
<sup>25</sup> Weiss, Tennyson, and Regan, 2010, pp. 597-624.

<sup>26</sup> Regan, Tennyson, and Weiss, 2008, pp. 23-46.

<sup>27</sup> Derrig and Tennyson, 2011, use this methodology to estimate excess costs in Massachusetts during 1978-1995.

automobile liability loss ratio relative to the countrywide average loss ratio.<sup>28</sup> This variable will capture the effects of insurance market conditions in each state and year. Because automobile insurance expenditures in the nation as a whole may vary over time due to other unobservable factors, the model also includes an indicator variable for each year ( $T_t$ ). An indicator variable for each state is included ( $A_s$ ) to allow for permanent differences in the level of automobile insurance expenditures across states.

This model is estimated using data from 1991–2008 for all fifty states. The resulting coefficient  $\beta_2$  provides an estimate of the difference between the average premium expenditure post-reform and the premium expenditure that would have been predicted in the absence of the regulatory reforms. Figure 4-5 shows these predicted differences, which are negative for all three states. Annual automobile insurance expenditures in Massachusetts during the post-reform period (2008 only) are 9.8 percent lower than predicted; New Jersey expenditures are an average of 6.8 percent lower than predicted in the post-reform period (2004–2008); and expenditures in South Carolina are an average of 4.8 percent lower than predicted during the post-reform period (1999–2008).<sup>29</sup>



<sup>28</sup> Loss ratios are constructed as state-wide liability losses (as defined in the text) divided by statewide premiums earned. The countrywide average loss ratio is the simple average of statewide loss ratios.

<sup>29</sup> The estimated expenditure declines are significantly different from zero at the 5 percent confidence level in Massachusetts and New Jersey; the estimated declines in South Carolina are not significantly different from zero.

To provide a year-by-year estimate of the effects of regulatory reforms on average premiums, a second version of each regression is estimated. In this estimate, the reform state indicator is interacted separately with each individual year in the post-reform period, rather than using a single indicator for the entire post-reform period. The new estimate will also have a separate term for each post-reform year, which provides an estimate of the difference between the average insurance expenditure observed in that year and the expenditure that would have been predicted in the absence of the regulatory reforms.

Figures 4-6, 4-7, and 4-8 plot the estimated effects for South Carolina, New Jersey, and Massachusetts, respectively. Each figure compares the observed average expenditure in the state (the solid line) and the percentage difference in expenditure that is predicted by the regression model in the absence of the regulatory reforms (the dotted line). The difference between the actual expenditure line and the predicted expenditure line represents the estimated impact of regulatory reforms on premium expenditures in each year.

Figure 4-6

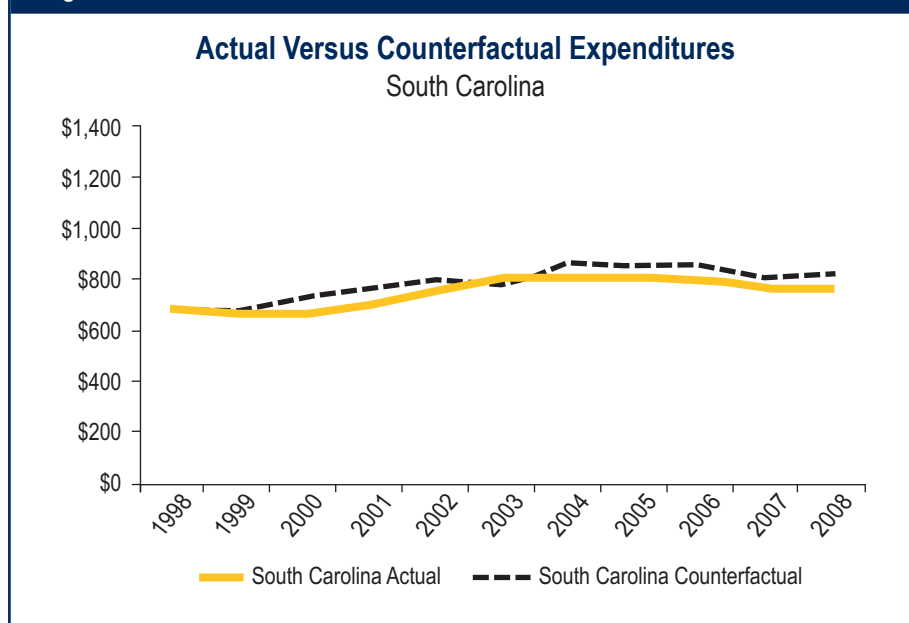


Figure 4-7

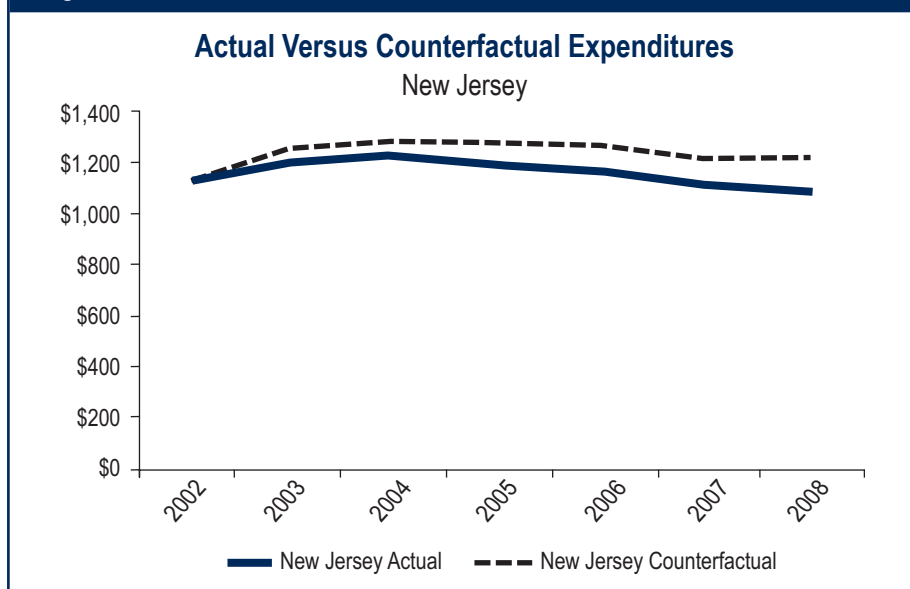
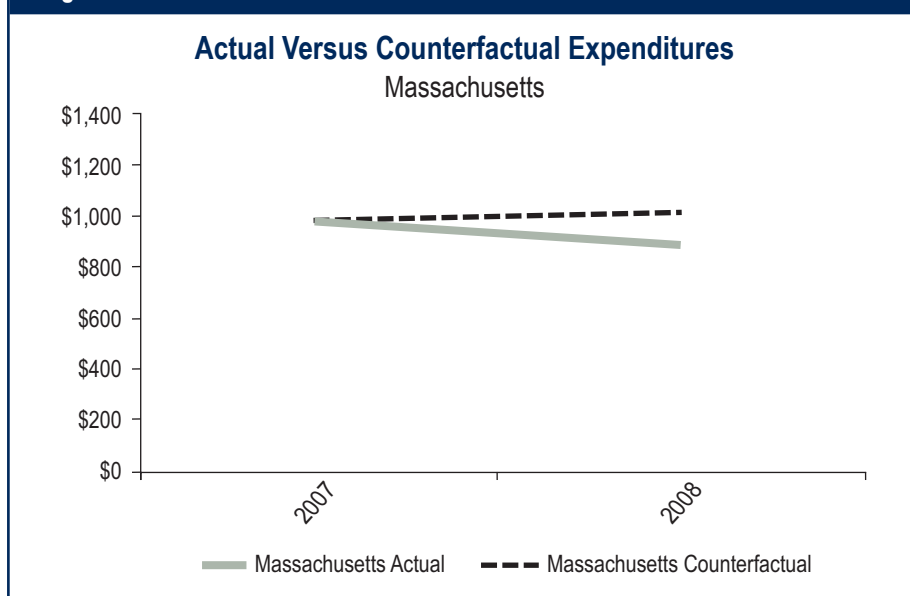


Figure 4-8



In each state, the predicted expenditure is greater than the actual expenditure in the post-reform years. This indicates that average auto insurance expenditures declined relative to expected expenditures in the aftermath of the reforms.<sup>30</sup>

<sup>30</sup> The annual predicted differences are not statistically significant in South Carolina for any year, however.

## Section 5

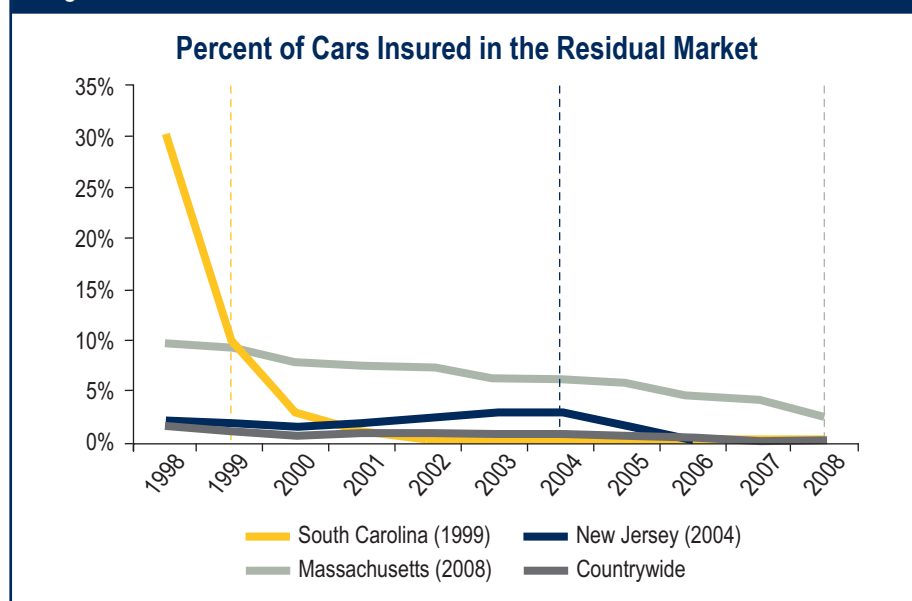
### Insurance Availability

The percentage of cars that are insured through a state's residual automobile insurance market is the most commonly used measure of the availability of insurance in the open market. States in which insurers are reluctant to insure some drivers at prevailing or allowed premium levels will see larger percentages of drivers who must obtain insurance through the "involuntary" residual market mechanism. As noted above, rate regulation can lead to a larger residual market if regulation reduces rates (for some drivers or all drivers) below those that will allow insurers to earn a competitive rate of return.

Figure 5-1 compares the size of residual markets in South Carolina, New Jersey, and Massachusetts to the nationwide average for years 1998 through 2008 (the latest year of data available). In the late 1990s, South Carolina, New Jersey, and Massachusetts each experienced residual markets that were much larger than average and were outliers among the states.

After the reforms in 1999, the size of South Carolina's residual market began to decline dramatically; smaller, but similarly important declines were seen in New Jersey's residual market after the reforms in 2004. By 2008, the automobile residual market in each of these states was close to or below the national average, indicating that previous problems of insurance availability have been alleviated.

Figure 5-1



Massachusetts's residual market shows a more gradual decline throughout the time period, but remains higher than the national average throughout. Nonetheless, in the wake of the reforms, the residual market size decreased by over one-third—from 4.2 percent of the market in 2007 to 2.8 percent of the market in 2008. The effects of the Massachusetts reforms are seen in only one year in this figure, and as such are not likely to have been fully realized.

## Section 6

### Insurance Service Quality

Researchers often use consumer complaints as a rough measure of insurer service quality, and that measure is examined here. Only complaints regarding automobile insurance, and complaints that the regulator has determined to be valid, are included in the measure. No complaint data specific to automobile insurers are available for South Carolina, so complaints are analyzed only for Massachusetts and New Jersey.

Massachusetts's annual complaint statistics for years 2005 through 2010, as compiled and reported by the Massachusetts Division of Insurance, are displayed in Figure 6-1. The table shows the total number of complaints in each year, the mean complaint ratio by company, and the median company's complaint ratio. Complaint ratios in Massachusetts are compiled per \$10 million in premiums. There is an overall downward trend in complaints from 2005 through 2010. In 2008, there is a small increase in the mean complaint ratio relative to 2007, but the median company's complaint ratio for 2008 is smaller than that for 2007. Both the mean and median complaint ratios are lower in 2009 and 2010 than in previous years. These trends suggest that consumer satisfaction with automobile insurance provider services has increased in the post-reform period.

Figure 6-1

Automobile Insurance Complaints			
Massachusetts			
Year	Number of Complaints	Mean Company Complaint Ratio (per \$10M premiums)	Median Company Complaint Ratio (per \$10M premiums)
2005	908	0.0324	0.0199
2006	759	0.0226	0.0191
2007	694	0.0205	0.0176
2008*	599	0.0216	0.0156
2009*	537	0.0161	0.0145
2010*	621	0.0158	0.0161

\*Indicates post-reform year.

New Jersey's automobile insurance complaint statistics for years 2002 through 2010 are obtained from the New Jersey Department of Banking and Insurance and are reported in Figure 6-2. The table shows the total number of complaints in each year, the mean complaint ratio by company, and the median company's complaint ratio. Complaint ratios in New Jersey are compiled per 1000 insured vehicles. Complaint ratios are available for two years prior to the reforms (2002 and 2003), but are unfortunately not comparable to those for the post-reform years because of a change in the state's reporting methodology. Thus, the large declines in complaint ratios after the reforms cannot be attributed to an increase in consumer satisfaction. The small numbers of complaints in total for each year in the post-reform period nonetheless indicate a high level of consumer satisfaction. The ratios suggest that on average New Jersey's regulators receive only one complaint per 25,000–35,000 vehicles insured in a given year.<sup>31</sup> Moreover, the downward trend in complaints over the years 2004 through 2010 suggest that consumer satisfaction has increased over time.

Figure 6-2

Automobile Insurance Complaints			
New Jersey			
Year	Number of Complaints	Mean Company Complaint Ratio (per 1000 vehicles)	Median Company Complaint Ratio (per 1000 vehicles)
2002	509	0.1763	0.1400
2003	693	0.2579	0.1500
2004*	250	0.0753	0.0550
2005*	154	0.0425	0.0278
2006*	180	0.0347	0.0344
2007*	186	0.0353	0.0324
2008*	165	0.0319	0.0387
2009*	135	0.0258	0.0301
2010*	140	0.0267	0.0242

\*Indicates post-reform year.

<sup>31</sup> This figure can be calculated by dividing 1,000 by the mean (or median) complaint ratio. For example, in 2010 insurers received an average of one complaint for every 37,453 vehicles insured ( $1,000/0.0267$ ).



## Section 7

### Insurance Market Health

Measures of insurance affordability, insurance availability, and insurance service quality are either improved or have remained about the same in the years following regulatory reforms in South Carolina, New Jersey, and Massachusetts. These trends make it clear that automobile insurance consumers have not been harmed by the reforms. But whether these beneficial outcomes can be expected to continue over the longer term depends on the health of the insurance markets in these states, and how this has been affected by the reforms.

A healthy insurance market provides insurers with incentives and opportunity to enter and serve the market at prices that lead to a normal (competitive) rate of profit. This, in turn, leads to a market which is serviced by a sufficient number of firms so that insurance is readily available, and firms must compete for consumers' business. In this environment, insurers will have incentives to compete through lowering costs and prices and raising service and product quality. As a result, in a healthy insurance market, most drivers will be willing and able to purchase insurance. A healthy insurance market will also provide insurance consumers with incentives to hold down insurance costs by pricing insurance so that premium charges are adjusted to reflect expected claims costs. Firms will be able to earn enough profits to sustain their insurance operations, but profits will not be higher than the competitive norm for the industry. The effects of regulatory reforms on these aspects of automobile insurance market performance are examined in the sections that follow.

### Uninsured Motorist Claims

The rate of uninsured driving in a state is a good indicator of consumer participation in the automobile insurance market. Problems of insurance affordability may be a cause of uninsured driving if drivers feel that they cannot afford insurance. This is distinct from affordability as measured by the average insurance expenditure because it focuses on those drivers who choose not to purchase insurance. Alternatively, uninsured driving may arise because of problems of insurance availability, if drivers choose to drive uninsured because they have difficulty finding an insurance agent or company or if they find the application process confusing or burdensome. Automobile insurance has many components, but the main component is

liability insurance. Drivers impose costs on others in the form of increased accident risk and accident costs. The purchase of liability insurance helps to assure that those costs are borne by the appropriate party through the premium paid for the insurance and the promise of the insurer to pay losses that the insured driver imposes on others. When a driver chooses to drive without liability insurance, accident costs are shifted to other drivers if the uninsured driver does not have sufficient resources to pay.

This means that high rates of uninsured driving are a burden for the insurance system. A driver's insurance must cover at least some of the costs of accidents with uninsured drivers, and these costs will be incorporated into higher insurance premiums. The increase in premiums caused by uninsured motorists may in turn lead more drivers to decide that insurance is unaffordable. Most states attempt to deal with the uninsured motorist problem by requiring all drivers to purchase liability insurance.<sup>32</sup> Rate regulation may also be used as a policy to make uninsured driving less likely. Rate regulation often attempts to reduce the cost of insurance, especially the costs to high-risk drivers who may be the most likely to drive uninsured.

For all of these reasons, it is important to examine the impact of rate reforms on uninsured driving. Unfortunately, measuring the rate of uninsured driving is difficult. State motor vehicle registrations, which often require liability insurance, occur at one moment in time, while insurance must be carried throughout the year. States' registration requirements and record-keeping also vary, and registration of an automobile can be avoided or falsified. The most readily available and standardized information on uninsured driving is obtained from insurance claims. Drivers injured in an accident with an uninsured motorist who is at-fault for the accident may file an "uninsured motorist (UM)" claim with their own insurer. The number of these claims provides an indicator of the rate at which insured drivers are injured in accidents involving uninsured drivers. While this does not actually measure the number of uninsured drivers, it does measure the rate at which uninsured drivers transfer costs onto the insurance system.

Following convention, uninsured driving rates are approximated here as the rate of uninsured motorist claims (UM) relative to the rate of bodily injury liability (BI) claims (UM/BI ratio). Because drivers turn to their UM coverage to receive payment for injuries caused by a driver who does not carry automobile liability insurance, the UM/BI ratio measures the proportion of injury-producing

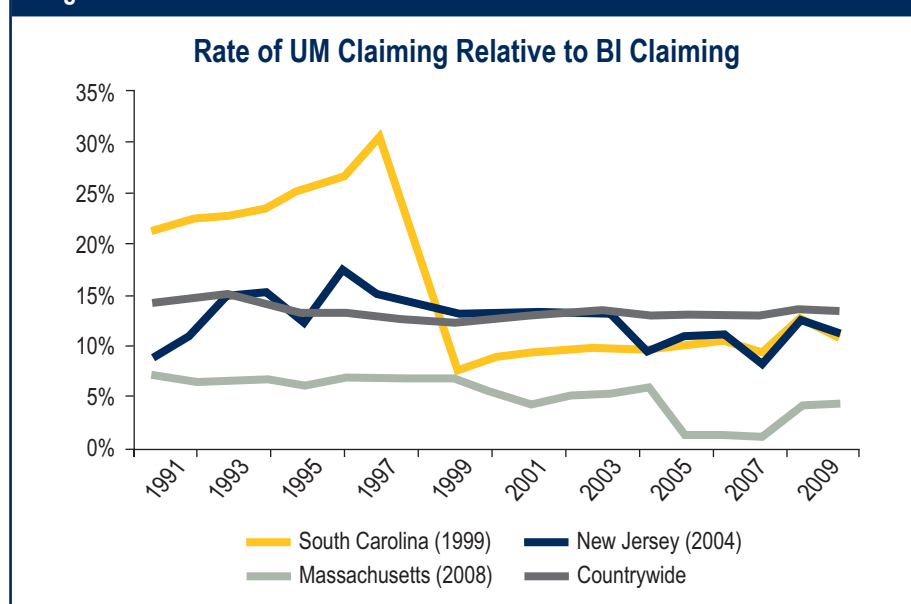
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<sup>32</sup> State requirements have evolved over time; currently, all states except New Hampshire have compulsory automobile insurance laws. Insurance Research Council, *Uninsured Motorists*, (Malvern, PA: Insurance Research Council, 2010).

accidents in which the at-fault driver was uninsured. Dividing the number of UM claims by the number of BI claims adjusts for differences in the rate of injury accidents across states and years.

Figure 7-1 compares the UM/BI rates in South Carolina, New Jersey, and Massachusetts to the countrywide average in each year 1991 through 2009 (latest year available). The UM/BI rate in South Carolina was much higher than the national average prior to regulatory reforms in 1999 and decreased markedly in the post-reform period, to rates that are below the national average. Similar, smaller effects are apparent in New Jersey after the reforms in 2004, although, prior to reforms, New Jersey's UM/BI rate was about the same as the national average. Massachusetts experienced UM/BI rates much lower than the national average throughout the 1991–2009 timeframe, and the regulatory reforms in 2008 did not change this.<sup>33</sup>

Figure 7-1



## Automobile Insurance Suppliers

A healthy insurance market will be served by a large number of firms; no single firm will dominate the market with a large share of business; and the most efficient sellers who are best able to meet consumers' desires will be present and successful in the market. Comparing the number and

<sup>33</sup> The increase in Massachusetts's UM/BI rate in 2008 and 2009 is likely because of the recession rather than the regulatory reforms; notice that this same pattern is observed in the other states as well.

characteristics of automobile insurance sellers in these states to those in other states will provide evidence of the relative health of insurance supply in these states.

Figure 7-2 reports on the number and the relative market shares of automobile insurance sellers in South Carolina, New Jersey, and Massachusetts. For comparison purposes, the table also reports the average value across all states. The figure reports the number of firms selling automobile insurance,<sup>34</sup> the number of these firms who are active in the market (as measured by having at least a 0.1 percent market share), and several measures of the distribution of market shares across sellers. Figure 7-2 provides information for 2010, to provide an assessment of the current structure of these automobile insurance markets relative to others.

The variables C1, C4, and C8 reported in the figure are the aggregate share of the market served by the largest 1, 4, and 8 firms, respectively. Higher values of these variables mean that the largest firms in the market serve a larger share of the market, and suggest that competition is less robust than in a market with lower concentration. The Herfindahl-Hirschman Index (HHI) reported in the figure is an alternative measure of market concentration which takes into account the market shares of *all* firms. The HHI is calculated as the sum of the squared values of each firm's market share. By squaring the market shares before adding them, firms with larger market shares are weighted more heavily in the Index, leading to higher HHI's when market shares are unevenly distributed across firms than when shares are evenly distributed. Because the HHI is smaller when there is a larger number of firms and when no firm has a large share of the market, it serves as a measure of how closely the structure of supply in an industry conforms to that of perfect competition.

Figure 7-2 shows that in 2010 the number of sellers in both New Jersey and Massachusetts are lower than the mean and median values for the country, while the number of sellers in South Carolina is higher. The automobile insurance markets in both Massachusetts and South Carolina are more concentrated than the mean or median state, meaning that a few firms serve a larger share of the market in these states. On the contrary, the market concentration measures in New Jersey are lower than or at about the same levels as those in the mean or median state.<sup>35</sup>

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<sup>34</sup> Data are constructed from SNL Financial data services, and represent insurance groups and single companies. An insurance group that sells through several different subsidiaries in a state is counted here as a single firm.

<sup>35</sup> Conclusions are similar if each state is compared only to other states in their same region.

Figure 7-2

**Measures of Automobile Insurance Market Concentration 2010**

	South Carolina	New Jersey	Massachusetts	National Average
Number of Sellers	76	48	33	65
Number of Sellers with > .1% share	44	34	25	39
Market Share of Largest Seller (C1)	24.74%	14.84%	28.20%	20.78%
Market Share of 4 Largest Sellers (C4)	58.84%	52.64%	59.37%	54.57%
Market Share of 8 Largest Sellers (C8)	79.25%	79.77%	79.00%	75.08%
Herfindahl-Hirschman Index (HHI)	1162	935	1265	1028

Most importantly, all of the market characteristics in the reform states are consistent with competitive insurance environments, according to U.S. Department of Justice (DOJ) and Federal Trade Commission (FTC) guidelines. An industry with a very large number of firms, each with a small but equal market share, would have an HHI that would be close to zero (for example, the HHI in a market with 1,000 firms, each with a 0.1 percent market share, would be 10). A monopolistic market with only one seller would have an HHI equal to 10,000 (100 percent squared). The DOJ/FTC guidelines set threshold values for the HHI to distinguish markets with different degrees of competition. Markets are characterized as unconcentrated if the HHI is below 1000; moderately concentrated if the HHI is between 1000 and 1800; and concentrated if the HHI is above 1800. Most DOJ/FTC actions regarding lack of competitiveness take place in concentrated markets, for example, those that have HHI greater than 1800.<sup>36</sup> The state automobile insurance markets fall in the unconcentrated or moderately concentrated range and would therefore not raise concerns about lack of competition.

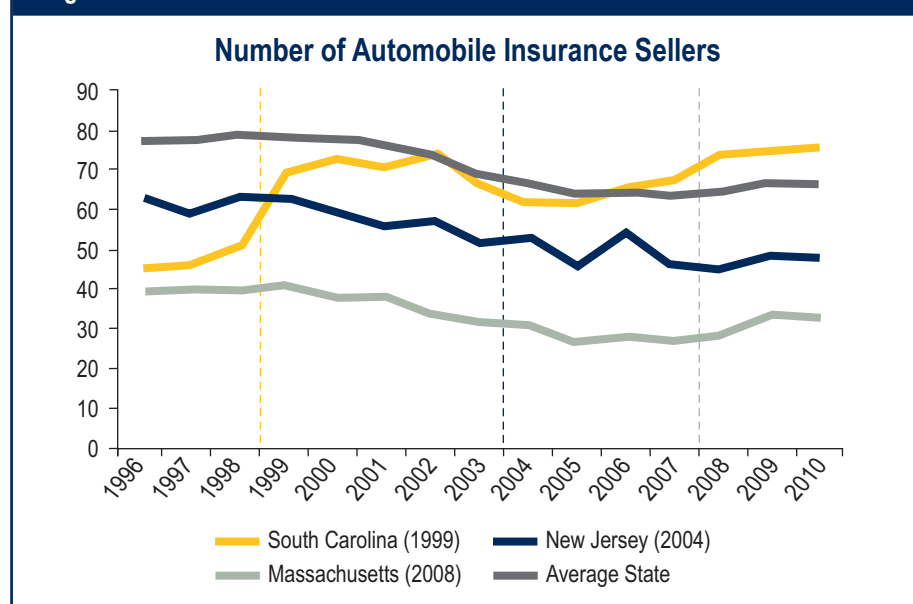
In terms of the other market structure measures, DOJ and FTC rarely investigate lack of competition in markets with more than 10 significant competitors. The agencies' guidelines assign an informal cut-off value of C1 equal to 35 percent as the point at which concerns about concentration of market power might be raised. Thus, by all market structure measures these state automobile insurance markets fall well within the ranges that federal regulators would consider indicative of competition.

<sup>36</sup> U.S. Department of Justice and Federal Trade Commission, *Commentary on the Horizontal Merger Guidelines*, (Washington, D.C., 2006), 68 pages.

Trends in the market characteristics after the implementation of reforms are also of interest. Figure 7-3 displays how the number of sellers in each state has changed over time, compared to national average trends. The most dramatic changes are observed in South Carolina, where the number of automobile insurance sellers has increased by more than 30 firms since the 1999. Massachusetts has also seen an increase in the number of sellers since the 2008 reforms, although there remains far fewer automobile insurers there than in the average state. New entrants into that state include important national sellers, however, and the data reflect only two years post-reforms.

New Jersey also has fewer automobile insurers than the average state, and this is the result of the state's long experience with strict regulation. Fourteen insurers exited this market in the 1990s because of the unfavorable business climate, and at least six others had exited in prior years.<sup>37</sup> During the time period shown in the figure, the number of auto insurers in New Jersey generally mirrors the slight downward national trend, and there is no evident increase in the number of sellers after the 2004 reforms. These numbers are not able to capture what would have happened in the absence of the reforms, however. In years 2001 and 2002, eleven insurers, including two large national insurers, had filed plans to withdraw from the state's automobile insurance market. Because of the reforms the two national insurers reversed their decisions and

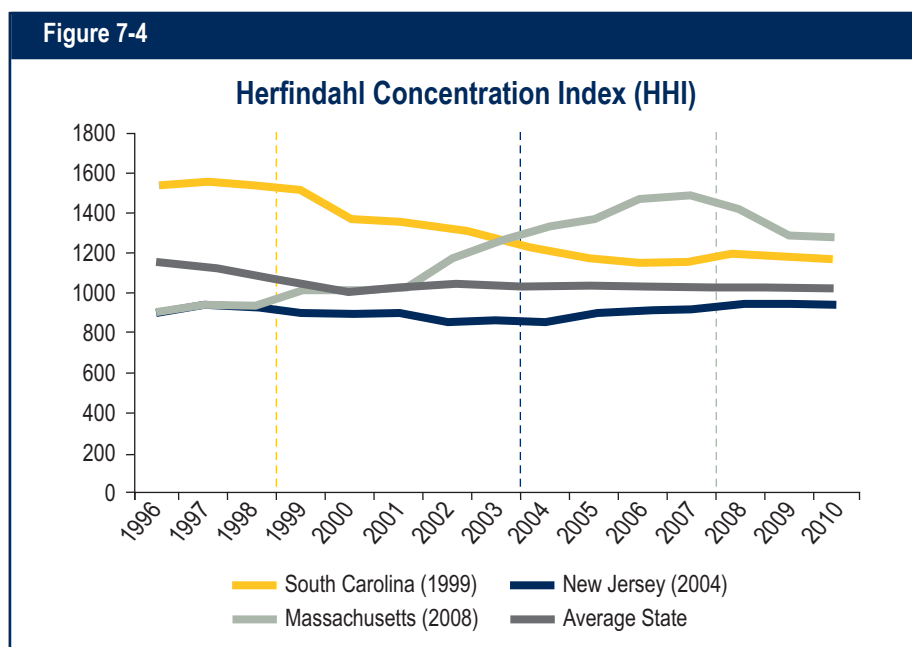
Figure 7-3



<sup>37</sup> Insurance Council of New Jersey, *Reforming New Jersey's Automobile Insurance System: Five Years Later*, (Ewing, N.J.: Insurance Council of New Jersey, 2008).

remained in the market, and seven new firms entered. The timely reforms prevented a rapid drawdown of suppliers, and the number of sellers stabilized.

Figure 7-4 displays the annual HHI concentration values for years 1996 through 2010 for the three states studied, compared to the countrywide mean. The comparisons show that South Carolina's HHI has declined steadily since 1999, the year that regulatory reforms became effective in the state. Massachusetts's HHI increased substantially throughout the period until 2007, reflecting the retrenchment and exit of firms in response to regulation. The HHI has trended downward since the 2008 reforms in Massachusetts. HHI has trended slightly upward in New Jersey since the 2004 reforms, after trending downward slightly in the years prior to reforms. However, these changes are modest and the HHI in New Jersey is below the mean for the country in all years.



To provide a more detailed comparison, Figures 7-5, 7-6, and 7-7 show trends in market concentration in each of the reform states compared with the average over all states and with trends in their closest neighboring states, for years 1996 through 2010. The figures show the C8 measure, the share of the market served by the largest eight competitors in each state.

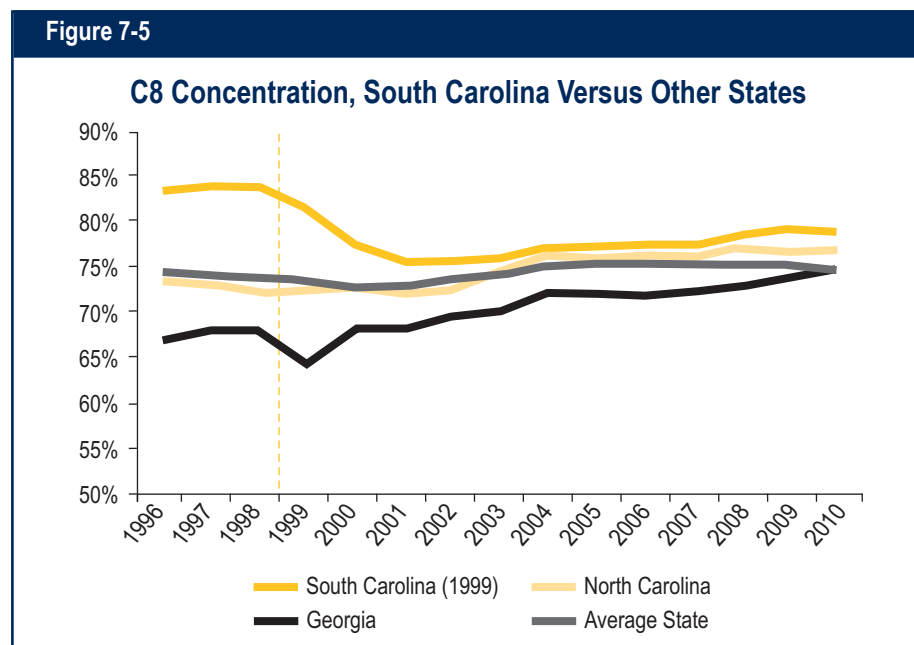
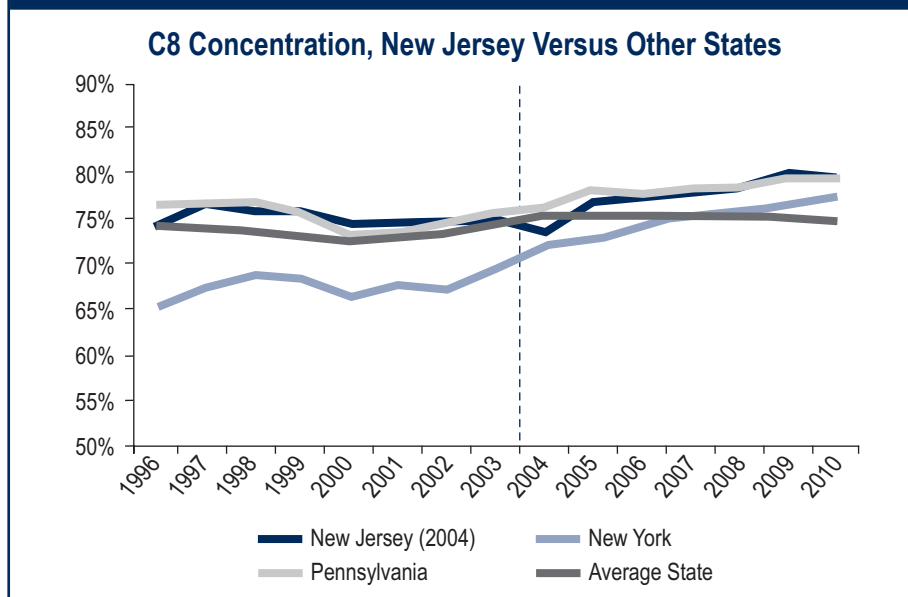


Figure 7-5 shows that market share concentration in South Carolina was much higher than the national average and in neighboring states prior to the 1999 reforms. After the reforms, concentration levels declined to levels in line with the national average and with those in nearby states.

Market share concentration in New Jersey (Figure 7-6) is comparable to the national average throughout most of the time period included in the figure, and is very similar to that in Pennsylvania. Concentration unexpectedly trends upward in New Jersey after the 2004 reforms, but, because this trend is also observed in the neighboring states of Pennsylvania and New York, it may be caused by other factors.

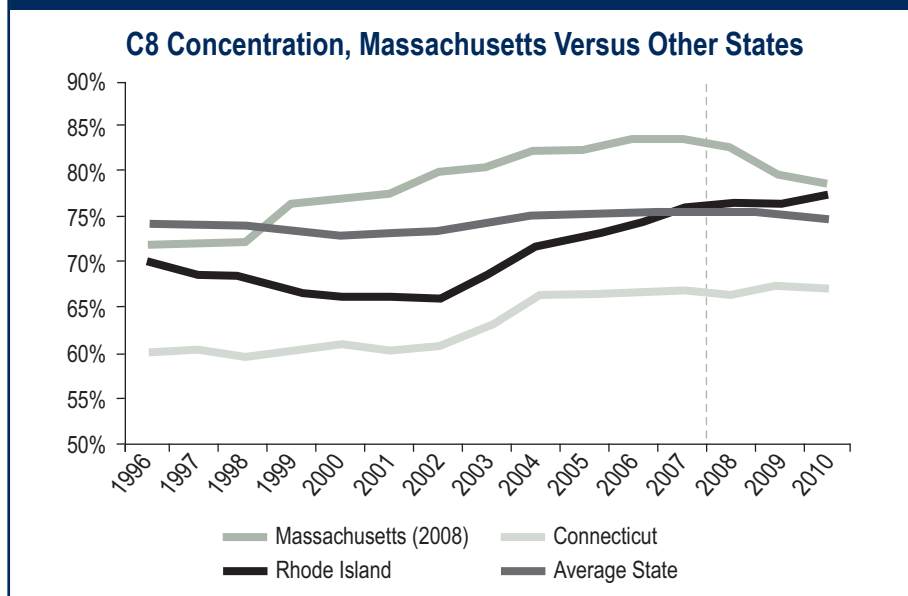


Figure 7-6



In contrast to New Jersey, Figure 7-7 shows that market share concentration trends in Massachusetts are distinct from national trends and trends in nearby states. Concentration increased rapidly from 1996 until the 2008 reforms, reaching levels higher than the national average and much higher than levels in neighboring states. Massachusetts's market concentration declined markedly between 2008 and 2010.

Figure 7-7



Overall, competitive trends in the automobile insurance markets of South Carolina, New Jersey, and Massachusetts have been favorable since the implementation of regulatory reforms. New firms have entered the markets, market concentration has not increased, and concentration has declined after the reforms in Massachusetts and South Carolina—the two states that are more concentrated than average.

### Automobile Insurance Loss Ratios

Insurer profitability levels are another important indicator of market health for the long term. Insurer profits must be sufficient to provide a normal rate of return in order to keep insurers operating in the market. However, excessive profits may indicate a lack of competition in the market. An indication of the profitability of auto insurance writings in a state may be gauged by comparing insurers' premium revenues relative to the cost of losses. This "loss ratio"—the ratio of losses incurred to insurance premiums earned—provides a rough measure of the percentage of premiums that go toward covering claims costs.

Some mark-up of premiums over losses is generally needed to cover insurer expenses and to provide a normal rate of return to capital; but a large mark-up may indicate that auto insurance premiums are excessive. Low loss ratios indicate a large mark-up of premiums over losses leading to high underwriting profits; high loss ratios indicate that mark-ups are small and underwriting profits are low. Year-to-year variations in the loss ratio arise because of random variations in claims and to cyclical factors inside and outside of insurance markets that may affect premiums; thus this measure should be evaluated "on average" over a number of years rather than on a single-year basis.

Figure 7-8 displays the statewide average loss ratio for automobile liability insurance for each of the reform states compared to the national average loss ratio in each year 1996 through 2010. Figure 7-9 displays the same loss ratio comparison for automobile liability and property damage insurance combined. For each measure, the national average loss ratio varies (cyclically) between 0.6 and 0.8 over this time period. This means that roughly between 60 and 80 percent of premiums collected are returned to consumers in the form of loss payments.

Figure 7-8

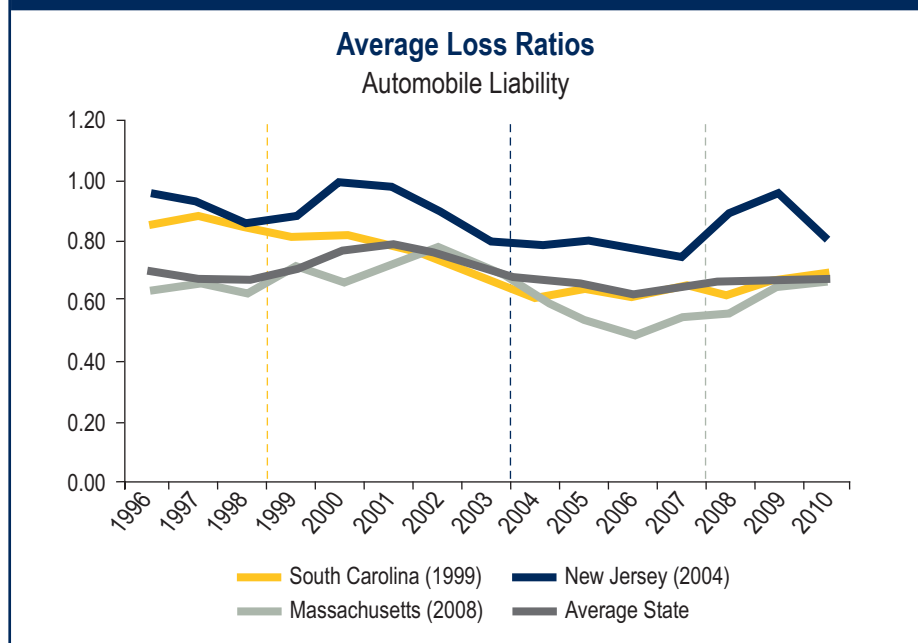
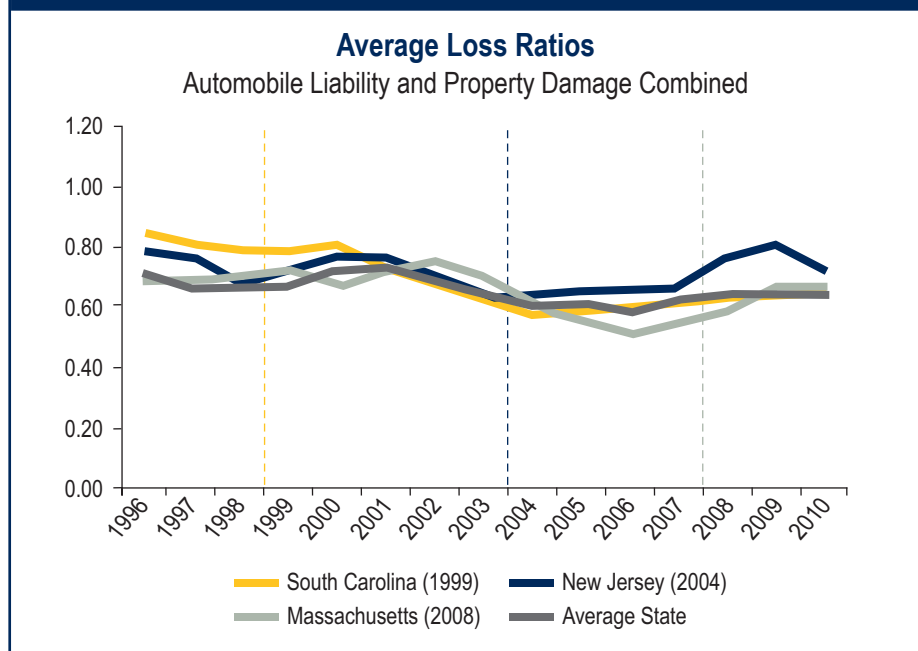


Figure 7-9



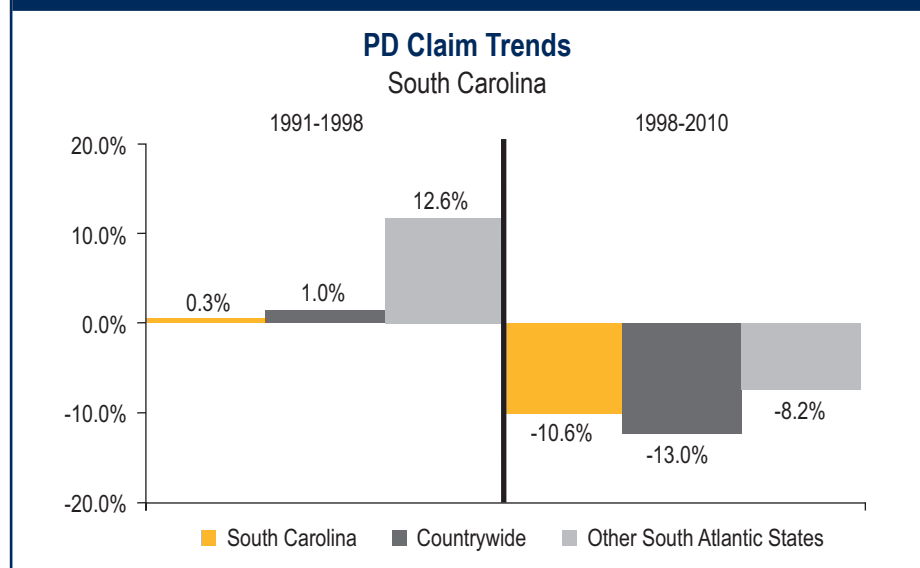
Except for a few years in Massachusetts, the average loss ratios in the reform states are above the national average, suggesting that insurers in these states devote more of the premium dollar to loss payments than in the average state. Automobile liability loss ratios for New Jersey are particularly high, in both the regulated and post-reform years. There is no indication that they are lower after the reforms. Prior to reforms in 1999, South Carolina's automobile insurers experienced a higher loss ratio than the national average. Loss ratios decreased to levels consistent with national averages after the reforms. The loss ratios in Massachusetts are generally close to the national average ratios, especially when liability and property damage are considered together. All in all, these patterns provide no indication that regulatory reforms have reduced insurer loss ratios to levels that indicate insurers are charging excessive premiums.

### The Rate of Liability Insurance Claiming

The rate of automobile accidents in a state hinges on many factors, including weather, driving conditions, and road conditions. Nonetheless, comparing accident rates in a state to rates in other similar states may provide evidence on the incentives for safe driving that are provided by the automobile insurance system. Because automobile liability insurance is mandatory and most accidents damage the automobiles involved, the number of property damage liability (PD) claims per insured car is often used as an indicator of automobile accident rates in a state. With this in mind, aggregate changes in the pre- and post-reform periods are shown in figures 7-10 and 7-11 compared with countrywide average changes and with changes in nearby states, in the years prior to and after which reforms were introduced.

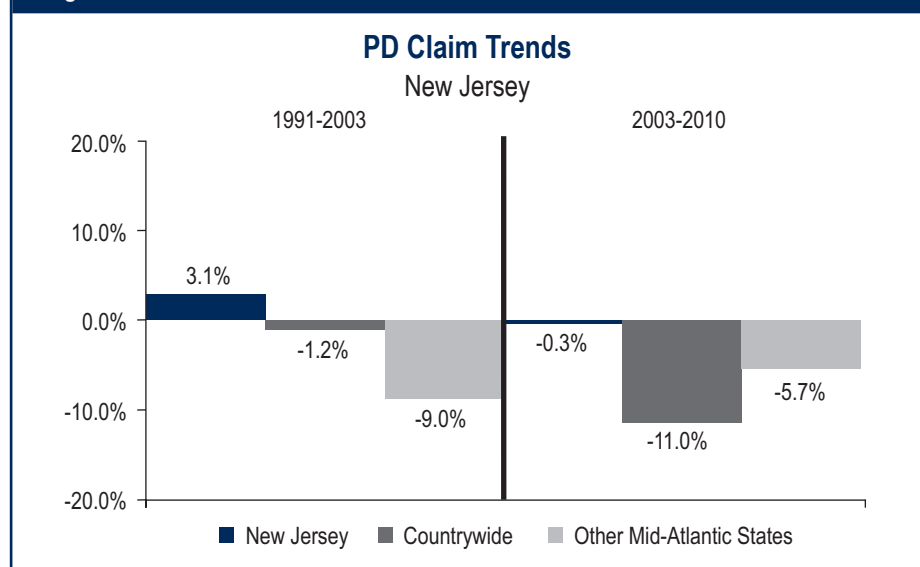
Figure 7-10 shows that PD claim trends in South Carolina are favorable relative to neighboring states. PD claims grew only 0.3 percent between 1991 and 1998 period, compared to 1 percent nationally and 12.6 percent in neighboring states. In the post-reform period, South Carolina's claim rates decreased more rapidly than in the surrounding region (–10.6 percent compared to –8.2 percent).

Figure 7-10



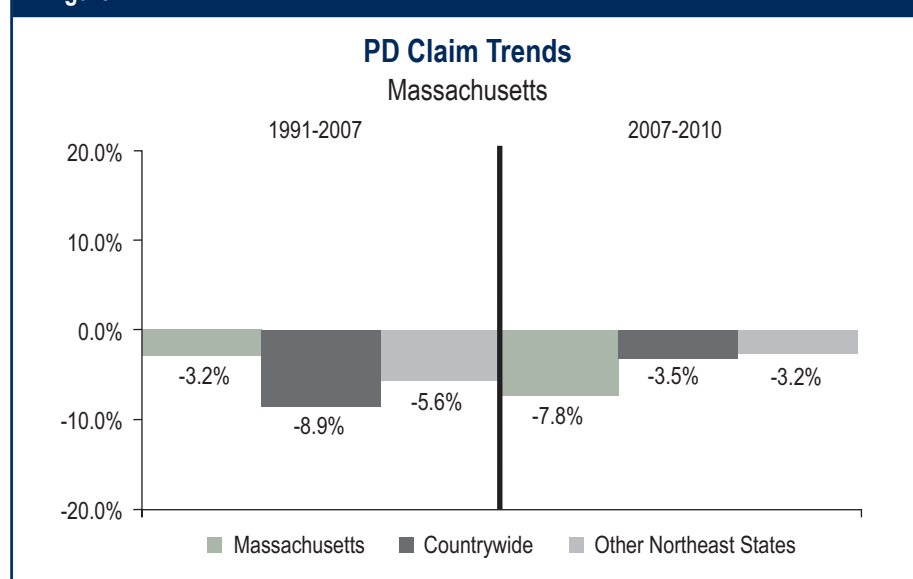
Comparisons for New Jersey are displayed in Figure 7-11. Between 1991 and 2003, the state's PD claim rate grew 3.1 percent, a much more rapid rate of growth than the 1.2 percent decline for the nation as a whole and particularly high relative to other states in the region, which experienced a decline in claims of 9 percent. In the post-reform period, New Jersey experienced a decline in PD claims of 0.3 percent. While this rate of decline was smaller than both the national average (11.0 percent) and that of other states in the region (5.7 percent), the increasing trend in claims was reversed.

Figure 7-11



Changes in PD claim rates for Massachusetts compared with other states have declined since 2008, as shown in Figure 7-12. While trends were favorable prior to the 2008 reforms, Massachusetts experienced only a 3.2 percent decrease in claims, compared with 8.9 percent nationally and 5.6 percent for other states in the region. In the 2007–2010 period, Massachusetts PD claim rates decreased 7.8 percent, a larger decrease than the 3.5 percent national average and 3.2 percent average for other states in the New England region.<sup>38</sup> Thus, reforms are associated with a relative improvement in PD claim rates in Massachusetts.

**Figure 7-12**

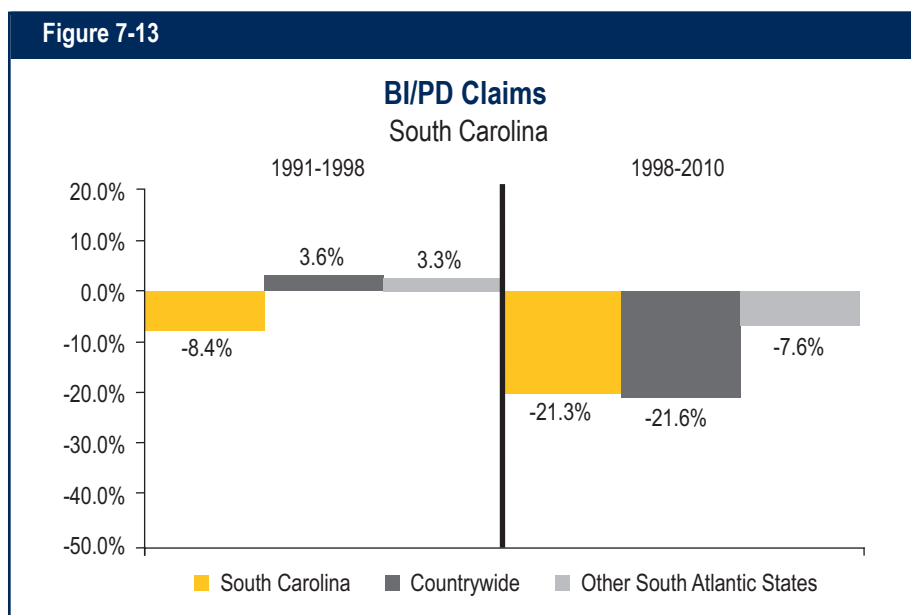


The percentage of PD claims that are accompanied by a claim for bodily injury (BI) may be viewed as providing information on the severity of accidents in a state. High rates of BI claims suggest that more accidents lead to injuries and that the accidents tend to be more severe. In addition, the rate of BI claims relative to PD claims (BI/PD) may provide information about the propensity to file unwarranted claims. Motorists may have incentives to file unwarranted BI claims because the payoff from a successful claim includes payments for non-economic losses, such as pain-and-suffering, which provide compensation in excess of actual out-of-pocket losses. Previous studies have shown that BI/PD claim rates are higher in states with stringent regulatory

<sup>38</sup> Results of multiple regression analysis, similar to that undertaken to analyze changes in average automobile insurance expenditures by state, confirms that the reduction in Massachusetts's PD claims rate post-reform is significantly greater when compared to other states. Regression analysis also confirms that there were no significant changes in PD claim rates in South Carolina and New Jersey post-reform, when compared with other states.

controls on automobile insurance premiums,<sup>39</sup> in states where consumers have more accepting attitudes toward insurance fraud,<sup>40</sup> and in states with fewer penalties for insurance fraud.<sup>41</sup> For these reasons, high rates of BI/PD claims are often used as an indication of excessive or fraudulent claiming in the automobile insurance system.

Figures 7-13, 7-14, and 7-15 compare the changes in BI/PD claiming in the pre- and post-reform periods for each state with countrywide average changes and with changes in surrounding states. In contrast to trends in PD claims, the BI/PD claim rate appears to be significantly different pre- and post-reform. Figure 7-13 shows that trends for South Carolina compare favorably with both the national average and with other states in the South Atlantic region in both the pre-reform and post-reform periods. BI/PD claim rates decreased in the pre-reform period 1991–1998, while increasing for both the surrounding region and for the nation as a whole. In the 1998–2010 time period, BI/PD claim rates decreased in South Carolina by an amount comparable to the national average, while neighboring states saw a lesser decline.



<sup>39</sup> RRegan, Tennyson, and Weiss, 2008, pp. 23-46.

<sup>40</sup> J. David Cummins and Sharon Tennyson, "Moral Hazard in Insurance Claiming: Evidence from Automobile Insurance," *Journal of Risk and Uncertainty*, 12, 1996, pp. 29-50.

<sup>41</sup> Robert E. Hoyt, David B. Mustard, and Lawrence S. Powell, "The Effectiveness of State Legislation in Mitigating Moral Hazard: Evidence from Automobile Insurance," *Journal of Law and Economics*, 49, 2006, pp. 427-450.

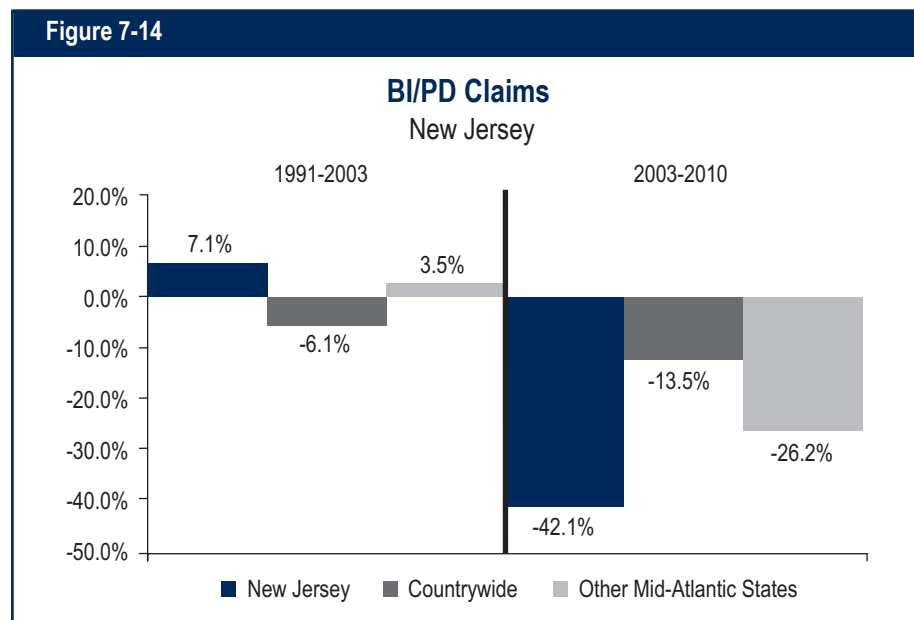


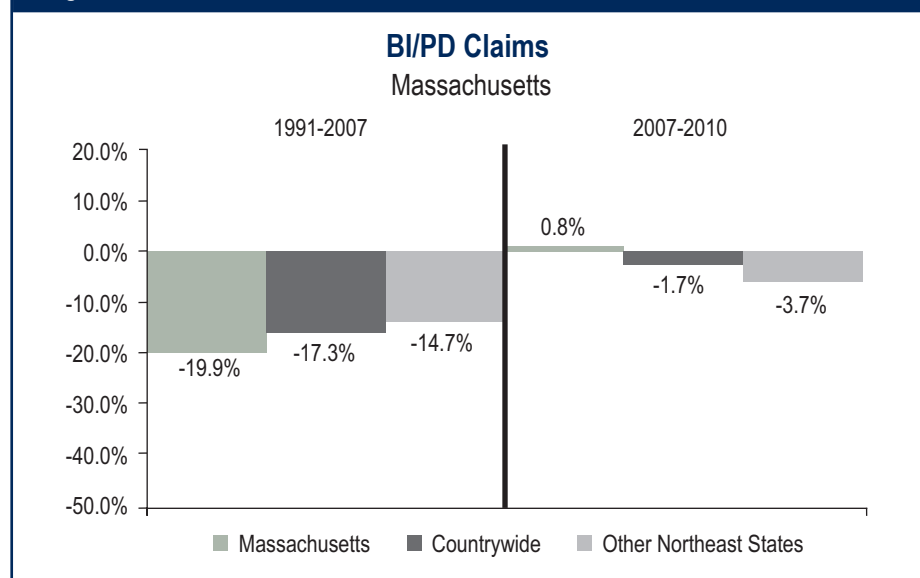
Figure 7-14 shows that New Jersey saw relative improvement in BI/PD claim rates in the post-reform years compared to 1991–2003. New Jersey BI/PD claim rates increased by 7.1 percent in the pre-reform years, compared to a 6.1 percent decline in the national average rate and a 3.5 percent increase in other Mid-Atlantic states. After the reforms, New Jersey BI/PD rates declined a startling 42.1 percent, compared with a 13.5 percent decrease nationally and a 26.2 percent decrease in neighboring states.

Massachusetts's relative rates of BI/PD claims are shown in Figure 7-15 below. BI/PD claim rates increased in the post-reform years, after declining at a more rapid pace than national or regional trends in the 1991-2007 period. Between 1991 and 2007, Massachusetts saw a 19.9 percent decrease in BI/PD claim rates, compared with a 17.3 percent decrease nationally and a 14.7 percent decrease in surrounding states. From 2007 to 2010, BI/PD rates in Massachusetts increased by 0.8 percent while neighboring states experienced a 3.7 percent decline and the national average decreased by 1.7 percent.<sup>42</sup> These trends were slightly less favorable than in other states, but followed a period of exceedingly rapid declines.

<sup>42</sup> Regression analysis confirms that the BI/PD claims rate in Massachusetts was not significantly affected by the regulatory reforms, while the states of South Carolina and New Jersey both experienced statistically significant declines in BI/PD claim rates after the reforms.



Figure 7-15



## Summary

A large number of measures that reflect the health of automobile insurance markets have been examined in the pre- and post-reform time periods and compared with national and regional averages. Although the results vary somewhat depending on the specific measures and states, there are no adverse trends to suggest that the post-reform outcomes in the reform states are not sustainable. Rates of uninsured driving (UM/BI claim rates) declined in each of the three states in the study and are lower than the national average. New sellers have entered the automobile insurance markets of each reform state, and market concentration levels and trends suggest that competition among firms is likely. Insurer loss ratios are also consistent with the occurrence of market competition. Trends in loss ratios show levels that are close to national averages, and reforms have not led to high premium levels relative to loss payments. There is also no evidence of adverse safety or claiming incentives created by the reforms, since liability claim rates are changing in line with or more favorably than rates in other states. Taken together, these measures provide a clear indication that reforms have not adversely affected insurance market health.



## Section 8

### Conclusions

This study provides evidence of the positive impact of regulatory reforms in the automobile insurance markets of South Carolina (reformed in 1999), New Jersey (reformed in 2004), and Massachusetts (reformed in 2008). Regulatory reforms have led to a number of positive developments in these markets without leading to increases in insurance prices or reductions in insurance availability. In each reformed state, insurance premium expenditures have declined relative to previous trends or projections; insurance availability has increased or been maintained at previous levels; insurer underwriting results have been maintained or improved to be more consistent with regional or national averages; and underlying claim rates have decreased or have remained at pre-reform levels.

Of course, it is not certain that the experiences of South Carolina, New Jersey, and Massachusetts will generalize to regulatory reforms that may be enacted by other states or in other time periods. Prior to the reforms, these three states were among the most heavily regulated, and their regulatory systems had unique features that led to many market distortions. Moreover, the timing, nature, and extent of reforms differ across the three states, and available evidence on the effects of the reforms is limited in some instances, particularly for Massachusetts, which enacted reforms later than the other states. All of these considerations may reduce the ability to generalize based on these case studies.

It should also be kept in mind that, while far-reaching, the reforms in these states only reduce government oversight and do not amount to deregulation of automobile insurance rates. Remaining regulations and other features of the automobile insurance system in each state will affect market outcomes and performance. Important considerations are no-fault insurance and insurance fraud, both of which have presented significant challenges in some state automobile insurance markets.

These caveats and limitations notwithstanding, this study has presented a wealth of evidence that regulatory reform has improved automobile insurance outcomes for both consumers and insurers in South Carolina, New Jersey,

and Massachusetts. The favorable performance of the more market-based pricing regimes introduced in these states provides support for the idea that strict government oversight of automobile insurance rate-setting is unnecessary, and may in some cases be detrimental for markets and consumers.

# Appendixes

## I. Details on Expenditure Regressions

## II. References



## Appendix 1

### Details on Expenditure Regressions

The regression model uses National Association of Insurance Commissioner (NAIC) data for annual average automobile insurance premium expenditures for years 1991–2008 for all fifty states. As noted in the text, a log-linear model is constructed using a specification which estimates whether the difference between each reform state’s expenditures and other states’ expenditures (after controlling for state characteristics) is greater or smaller in the post-reform period as compared with the pre-reform period. The regression model includes control variables for time-varying state characteristics and state-specific fixed effects, which account for any non-time varying differences in automobile premium expenditures across states. The standard errors of the estimates are corrected to allow for heteroskedasticity and for correlation within each state across time.

The control variables in the model include demographic and economic characteristics of a state that are expected to affect average automobile premiums. These are measured as traffic density, defined as total vehicle miles driven divided by total miles of roadway in the state; median household income; the statewide average expenditure per Medicaid beneficiary, defined as total Medicaid expenditures divided by the number of Medicaid beneficiaries; and the automobile fatality rate, defined as the number of automobile fatalities per mile driven. Data on miles driven, miles of roadway, and traffic fatalities were obtained from the U.S. Department of Transportation. Data on registered automobiles were obtained from the Automobile Insurance Plans Services Office (AIPSO). Data on median household income were obtained from relevant editions of the U.S. Statistical Abstract, and data on state Medicaid expenditures and beneficiaries were obtained from the Centers for Medicare and Medicaid Services (CMS).

Control variables reflecting a state’s legal and regulatory environment for automobile insurance are also included in the model. These consist of an indicator for whether automobile liability insurance is compulsory; indicators of a state’s laws on rate regulation and no-fault auto insurance; and an indicator of the availability of first-party injury benefits outside of a no-fault regime (so-called “addon” benefits). Data on states’ rate regulation regimes in each year were obtained from Harrington (2002) and from the Insurance Information Institute (III, 2009). Data on states’ no-fault and compulsory automobile insurance laws were also obtained from III.

The model also recognizes that a state's average automobile insurance expenditure will be affected by insurance purchase amounts. Differences in household income (included in the model) will partially account for different average purchase amounts across states, but state minimum and maximum coverage limits will also play a role. Thus, the regression model includes the minimum required coverage limits (if any) for bodily injury and property damage liability insurance, and the maximum first-party limits offered in no-fault (and add-on) states. These data are obtained from III.

A final control variable in the model is the lagged automobile liability loss ratio in a state divided by the lagged countrywide average automobile liability loss ratio. This variable will capture the effects of insurance market conditions that vary by state and time, including effects associated with insurance cycles or financial market conditions. Inclusion of this control variable reduces the likelihood that these other effects are mistakenly attributed to the effects of regulatory reforms. Loss ratios are constructed as statewide liability losses divided by statewide premiums earned. The countrywide average loss ratio is the simple average of statewide loss ratios. Data on statewide losses and premiums are obtained from A.M. Best and SNL databases.

Given the inclusion of a lagged variable, the regression models are estimated using data for 1992 through 2008, and thus the number of observations in the sample is 850 (17 years times 50 states). Summary statistics for all model variables are included in Table 1.



Table 1

Summary Statistics		
Variable	Mean	Std Dev
Traffic Density	0.7365	0.4809
Median Income (2008 \$)	\$50,031.95	\$8,012.79
Fatalities per Mile Driven	0.0162	0.0044
Medicaid Spending per Beneficiary (2008 \$)	\$5,644.43	\$1,770.02
Lag (Loss Ratio/National Loss Ratio)	1.0000	0.1197
Compulsory Liability Insurance	87.06%	
Minimum Liability Limits Bodily Injury (2008 \$)	\$27,493.66	\$9,445.57
Minimum Liability Limits Property Damage (2008 \$)	\$16,795.73	\$11,131.19
Compulsory First-Party Benefits (No-fault)	25.59%	
Add-on First-Party Benefits	20.12%	
PIP Payment Maximum if No-fault (2008 \$)	\$43,566.33	\$185,760.00
PIP Payment Maximum if Add-on (2008 \$)	\$1,285.43	\$3,683.97
Rate Regulation	56.35%	
Medicaid Spending per Beneficiary (2008 \$)	\$5,644.43	\$1,770.02
Unemployment Rate	5.04	1.36
Uninsured Motorist (UM) Claim Frequency	0.16	0.10
Median House Price (2008 \$) in (000)	\$158.66	\$48.96



# Appendix II

## References

Abrahamse, Alan F. and Stephen J. Carroll, 1999, The Frequency of Excess Claims for Automobile Personal Injuries, in Georges Dionne and Claire Laberge-Nadeau, eds., *Automobile Insurance: Road Safety, New Drivers, Risks, Insurance Fraud and Regulation* (Centre for Research on Transportation, Universite de Montreal).

Automobile Insurance Plans Service Offices, *AIPSO Facts*, various years (New York, NY: AIPSO).

Bartlett, D.K. III, R.W. Klein and D.T. Russell, “Attempts to Socialize Costs in Voluntary Insurance Markets: The Historical Record,” *Journal of Insurance Regulation*, 1999, Vol. 17.

Blackmon, B.G. Jr. and R. Zeckhauser, 1991, Mispriced Equity: Regulated Rates for Auto Insurance in Massachusetts, *American Economic Review* 81: 65-69.

Bouzouita, R. and V. Bajtelsmit, 1997, The Impact of Rate Regulation on the Residual Market for Automobile Insurance, *The Journal of Insurance Regulation*, 16, 61-72.

Burnes, N.S., “Opinion, Findings, and Decision on the Operation of Competition in Private Passenger Motor Vehicle Insurance in 2008,” Massachusetts Division of Insurance Docket No. R2007-03, July 16, 2007.

Cohen, A. and R. Dehejia, 2004, The Effect of Automobile Insurance Accident Liability Laws on Traffic Fatalities, *The Journal of Law and Economics*, 47, 357-393.

Cummins, J.D., 2002, Property-Liability Insurance: Price Deregulation: The Last Bastion, in J. D. Cummins, ed. *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), 1-24.

Cummins, J.D. and S. Tennyson, 1992, Controlling Automobile Insurance Costs, *Journal of Economic Perspectives*, 6, 95-115.

Cummins, J.D., R.D. Phillips, and S. Tennyson, 2001, Regulation, Political Influence and the Price of Automobile Insurance, *Journal of Insurance Regulation*, 20, 9-50.

- Cummins, J. D., R.D. Phillips, and M. A. Weiss, 2001, The Incentive Effects of No-Fault Automobile Insurance, *Journal of Law and Economics*, 44, 427-464.
- Cummins, J.D. and M.A. Weiss, 1991, The Effects of No-Fault on Automobile Insurance Loss Costs, *The Geneva Papers on Risk and Insurance* 16, 20-38.
- Danzon, Patricia M. and Scott E. Harrington, 1998, *Rate Regulation of Workers' Compensation Insurance* (Washington, DC: American Enterprise Institute).
- Derrig, Richard A. and Sharon Tennyson, "The Impact of Rate Regulation on Claims: Evidence from Massachusetts Automobile Insurance," *Risk Management and Insurance Review*, forthcoming.
- Derrig, R. A., 1993, Price Regulation in US Automobile Insurance: A Case Study of Massachusetts Private Passenger Automobile Insurance 1978-1990, *Geneva Papers on Risk and Insurance*, 18, 158-173.
- Grabowski, H., W.K. Viscusi, and W.S. Evans, 1989, Price and Availability Tradeoffs of Automobile Insurance Regulation, *Journal of Risk and Insurance*, 56, 275-299.
- Grace M.F., R.W. Klein, and R.D. Phillips, 2002, Auto Insurance Reform: Salvation in South Carolina, in J. D. Cummins, ed. *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), 148-194.
- Harrington, S.E., 2002, Effects Of Prior Approval Rate Regulation of Auto Insurance, in J. D. Cummins, ed. *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), 285-314.
- Harrington, S.E., 1987, The Impact of Rate Regulation on Auto Insurance Loss Ratios: Some New Evidence, *Journal of Insurance Regulation*, 5, 182-202.
- Harrington, S.E. and P.M. Danzon, 2000, Rate Regulation, Safety Incentives, and Loss Growth in Workers' Compensation Insurance, *Journal of Business*, 73, 569-95.
- Harrington, S.E. and S. T. Pritchett, 1990, Automobile Insurance Reform in South Carolina, *Journal of Insurance Regulation* 8: 422-445.
- Harrington, S.E. and H. I. Doerpinghaus, 1993, The Economics and Politics of Automobile Insurance Rate Classification, *Journal of Risk and Insurance*, 60, 59-84.
- Harrington, S.E., 1990, The Relationship Between Voluntary and Involuntary Market Rates: Regulation in Automobile Insurance, *Journal of Risk and Insurance*, 57, 9-27.
- Harrington, S.E., 1991, Automobile Insurance in Michigan: Regulation, No-fault and Affordability, *Journal of Insurance Regulation*, 10, 144-183.

- Insurance Information Institute, 2011, *The Fact Book* various years (New York, NY).
- Insurance Research Council, various years, *Uninsured Motorists* (Malvern, PA).
- Ippolito, R., 1979, The Effects of Price Regulation in the Automobile Insurance Industry, *Journal of Law and Economics*, 22, 55-89.
- Jaffee, D.M. and T. Russell, 2002, Regulation of Automobile Insurance in California, in J. D. Cummins, ed. *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), 195-236.
- Jaffee, D.M. and T. Russell, 1998, The Causes and Consequences of Rate Regulation in the Auto Insurance Industry, in D. F. Bradford, ed. *The Economics of Property-Casualty Insurance*. (Chicago, IL: University of Chicago Press), 81-112.
- Keeton, W.R. and E. Kwerel, “Externalities in Automobile Insurance and the Underinsured Driver Problem,” *Journal of Law and Economics*, 1984, Vol. 27, 149-179.
- Ma, Y. L. and J. T. Schmit, 2000, Factors Affecting the Relative Incidence of Uninsured Motorists Claims, *Journal of Risk and Insurance*, 67, 281-294.
- National Association of Insurance Commissioners, 2011, *State Average Expenditures & Premiums for Personal Automobile Insurance in 2010* (Kansas City, MO: NAIC).
- Regan, L., S. Tennyson and M.A. Weiss, 2008, The Relationship between Auto Insurance Rate Regulation and Insured Loss Costs: An Empirical Analysis, *Journal of Insurance Regulation* 27, 23–46.
- Rottenberg, S., “The Cost of Regulated Pricing: a Critical Analysis of Auto Insurance Premium Rate-Setting in Massachusetts,” 1989, Boston, Pioneer Institute for Public Policy Research.
- Shavell, S. 1987, *Economic Analysis of Accident Law*, (Cambridge, MA: Harvard University Press).
- Stone, J.M., “Opinion and Findings on the Operation of Competition Among Motor Vehicle Insurers”, Rendered June 1977, Boston, MA., Massachusetts Division of Insurance.
- Stone, J.M., “Opinion, Findings and Decision on the Operation of Competition Among Motor Vehicle Insurers” Rendered June 1978, Boston, MA: Massachusetts Division of Insurance.
- Smith, Eric and Randall Wright, 1992, Why Automobile Insurance in Philadelphia is so Damn Expensive?, *The American Economic Review* 82: 756-772.

- Suponcic, Susan J. and Sharon Tennyson, 1998, Rate Regulation and the Industrial Organization of Automobile Insurance, in *The Economics of Property-Casualty Insurance*, edited by David F. Bradford (The University of Chicago Press).
- Tennyson, S., 1997, The Impact of Rate Regulation on State Automobile Insurance Markets, *Journal of Insurance Regulation* 15(4): 502-523.
- Tennyson, S., 2010, Incentive Effects of Community Rating in Insurance Markets: Evidence from Massachusetts Automobile Insurance, *Geneva Risk and Insurance Review*, 35, 19–46.
- Tennyson, S., M.A. Weiss; and L. Regan, 2002, Automobile Insurance Regulation: The Massachusetts Experience, in J. D. Cummins, ed. *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), 25-80.
- Weiss, M.A. and B.P. Choi, 2008, State Regulation and the Structure, Conduct, Efficiency and Performance of US Auto Insurers, *Journal of Banking and Finance*, 32, 134-156.
- Weiss, M.A., 1990, Productivity Growth and Regulation of P/L Insurance: 1980-1984, *Journal of Productivity Analysis* 2, 15-38.
- Weiss, M.A., S. Tennyson and L. Regan, 2010, The Effects of Regulated Premium Subsidies on Insurance Costs: An Empirical Analysis of Automobile Insurance, *Journal of Risk and Insurance* 77, 597-624.
- Worrall, J.D., 2002, Private Passenger Auto Insurance in New Jersey: A Three-Decade Advertisement for Reform, in J. D. Cummins, ed. *Deregulating Property-Liability Insurance*. (Washington, D.C.:Brookings Institution Press), 81-134.
- Yelen, S., 1993, Withdrawal Restrictions in the Automobile Insurance Market, *Yale Law Journal*, 102, 1431-1455.

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