Small businesses are the engine of job growth in this country. At a time when unemployment rates are high, it is important to understand the forces that impair the ability of small businesses to thrive and grow. This report contains the findings of a study that estimates the tort liability costs that fall on small businesses. It was commissioned by the U.S. Chamber Institute for Legal Reform (ILR) and conducted by NERA Economic Consulting (NERA). The data reveal that small businesses bear an extraordinary tort liability cost burden.

The cost estimates and the technical appendix containing the methods used to develop those estimates are the work product of NERA. All other parts of this report, including the policy analysis, are the work product of ILR.
Executive Summary

In its “American Free Enterprise. Dream Big.” campaign the U.S. Chamber of Commerce has focused a spotlight on small businesses. Small businesses are the engine of job growth in this country. They have generated 64 percent of the net new jobs over the past 15 years. Particularly at a time when unemployment rates are high, it is important to understand the burdens small businesses bear, with the objective of creating an environment in which small businesses will thrive. To this end, the U.S. Chamber Institute for Legal Reform has commissioned a study of the tort liability costs of small businesses from NERA Economic Consulting (NERA). Their findings are as follows:

- The tort liability price tag for small businesses in America in 2008 was $105.4 billion.
- Small businesses bore 81% of business tort liability costs but took in only 22% of revenue.
- Small businesses paid $35.6 billion of their tort costs out of pocket as opposed to through insurance.

Although we may think of physicians and medical labs primarily in their professional roles, they are also businesses dealing with the customary issues of running a business, striving to keep costs manageable and operations running smoothly. The unpredictability and high costs of the medical malpractice system create a significant business challenge.

- Medical malpractice costs for doctors in small groups and small medical labs total $28 billion.
- This is 94% of the total costs of medical malpractice ($29.8 billion).
- When medical malpractice costs are added to all other tort liability costs for small businesses, the total is $133.4 billion and 83% of total tort costs for all businesses ($160.5 billion).
A 2007 Harris poll of small business owners/managers who are concerned about litigation found that 62% make business decisions to avoid lawsuits, and 61% reported that these decisions make their products and services more expensive. More than a third of those surveyed had been sued, and 73% of those sued said the business suffered because the litigation was very time consuming.

In its most recent report, “2009 Update on U.S. Tort Cost Trends,” Tillinghast/Towers Perrin forecasts future tort cost growth, estimating that tort costs will reach $183.1 billion in 2011 for all businesses. NERA estimates that, in 2011, $152 billion will fall on small businesses.

Americans have a stake in protecting small businesses from wasteful and excessive costs in the tort system. Legislators should be alert to pending legislation that could expand liability and harm small businesses. Moreover, meaningful common sense reforms at the state and federal level should be considered and passed into law. For more information on reforms see our website at http://www.instituteforlegalreform.com/about-ilr.html.
Introduction

Small businesses are central to the health of the U.S. economy and play a significant role in job creation

In its “American Free Enterprise. Dream Big.” campaign, the U.S. Chamber of Commerce has focused a spotlight on the important role small businesses play in reviving the economy. Small businesses are a vital component to restoring the 7 million jobs lost to the current recession and the 13 million new jobs that will be needed over the coming decade. The campaign “reminds all of us that individual initiative, hard work, freedom of choice, and the free exchange of trade, capital, and ideas built this great country and can lead us back to prosperity.”

The campaign’s focus on small businesses is supported by some important facts. According to the Small Business Administration (SBA), small businesses¹ are significant in number, they employ just over half of all private sector employees, and pay 44 percent of the total U.S. private payroll. (For distribution of small businesses by number of companies and by revenue, see Exhibit 1, p. 5.) They have generated 64 percent of the net new jobs over the past 15 years and have created more than half of the non-farm private gross domestic product (GDP).²

Additionally, self-employed individuals are an expanding component of the workforce. Between 1980 and 2000, the number of self-employed individuals grew tenfold to include 16 percent of the workforce.³

The smallest businesses, often referred to as microenterprises or businesses with five or fewer employees, have enjoyed the fastest rate of growth, far more than any other business category. By 2006 there were some twenty million such businesses, one for every six private sector workers.⁴

Missouri’s Ewing Marion Kauffman Foundation, often referred to as the world’s largest foundation devoted to entrepreneurship, reports that fast-growing young firms (so-called

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¹ The SBA defines small businesses as having fewer than 500 employees.
“gazelle” firms of three to five years of age) comprise less than one percent of all companies, yet generate roughly 10% of new jobs in any given year.\(^5\) Kauffman recommends creating an environment that will foster the development of new firms by removing barriers to the emergence of high-growth companies. “Startup firms contribute a net increase in employment that is essential if the economy is to achieve positive net job creation in any given year.”\(^6\)

**Entrepreneurs and innovators are often found in the small business sector**

Entrepreneurialism has strengthened in recent years. In 2008, 28% of Americans said they had considered starting a business, more than twice the rate for French or Germans. Self-employment, particularly among younger workers, has been growing at twice the rate of the mid-1990s. Contrary to intuitive reactions that the recent difficult economic times may be slowing this trend, history shows that recessions serve as incubators of innovation and entrepreneurship.\(^7\)

Small businesses are often on the cutting edge of innovation. They hire 40% of all high tech workers (such as scientists, engineers, and computer programmers) and produce 13 times more patents per employee than large patenting firms; these patents are twice as likely as large firm patents to be among the one percent most cited.\(^8\)

An article by an attorney in the Pacific Legal Foundation, published in the Indiana Law Review, had this to say about how innovation could be inhibited by the fear of litigation:

*Innovation depends on the ability to experiment and make mistakes. A fair legal system must provide for the evolution of technology and manufacturing or risk the loss of inventions that benefit all members of society. Unfortunately, the American civil justice system weighs heavily on innovators. As Harvard Business School Professor Michael Porter described it: “In the United States…product liability is so extreme and uncertain as to retard innovation. The legal and regulatory climate places firms in constant jeopardy of costly, and, as importantly, lengthy product liability suits.”*

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8 SBA, *FAQs*.
Exhibit 1: Estimated Size Distribution of U.S Businesses 2008

Non-Employee Businesses
There are a number of “real world” examples of how innovation is fostered by a rational legal system. To name one: In 1976 Congress enacted the Medical Device Amendments Act (MDA) to create a uniform national process for evaluating the safety and efficacy of medical devices so that they would no longer be regulated by the uncertain, often unforeseeable, and sometimes capricious system of state tort lawsuits. Under the MDA’s uniform regulatory environment, medical innovation has thrived and patients have received cutting-edge medical technologies like pacemakers, arterial stents, and heart valves.

**Research reveals that small businesses are very concerned about lawsuits, and litigation has had an adverse effect on the operations of many small businesses**

In a 2007 Harris poll of business owners/managers who indicated that they were somewhat or very concerned about frivolous or unfair lawsuits, 62% said they make business decisions to avoid lawsuits. These decisions had the following effects:

- 61% said made their products and services more expensive.
- 45% said made a product or service unavailable to customers.
- 23% said the decisions forced them to cut employee benefits.
- 11% said the decisions forced them to lay off employees.

More than a third of these business people (34%) had a lawsuit filed against them in the prior ten years. These suits had the following effects:

- 73% said business suffered because litigation was very time consuming.
- 64% said business suffered because litigation was very expensive.
- 61% said they felt more constrained in making business decisions generally.
- 45% said they changed business practices in ways that do not benefit customers.  

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In a separate survey of small business executives in Maryland, 91% indicated that lawsuits filed against corporations are hurting Maryland’s business climate. Nearly six in 10 respondents to that survey said they have increased their costs, reduced services, or changed products they offer. Fourteen percent said they even considered closing their business as a result of a lawsuit.  

The general public is concerned about the effects of the fear of lawsuits, and about the fairness of litigation outcomes

In a 2009 survey, 66% of those interviewed on the telephone agreed with this statement: “The fear of being sued is changing American society for the worse because it’s often having the effect of discouraging people from doing the right things.” When asked, “If someone filed a lawsuit against you that was without merit—do you have confidence that the court system would resolve the case in your favor?” more people said no (49%) than said yes (43%). When asked: “If someone filed a lawsuit against you that was without merit—do you have confidence that the court system would resolve the case quickly and efficiently?” a stunning 64% said no. Only 30% said yes.

Small business owners inspire broad public confidence

The lawsuit threat is particularly poignant when the concern is the impact on small businesses. The public recognizes the important role small businesses play in our society and they trust and respect their leaders. For 44 years, The Harris Poll has measured how confident the American people are in the leaders of major institutions. Based on the responses, Harris calculates an overall confidence index. In a 2010 poll, small business leaders inspired a “great deal of confidence” in 50% of Americans, second only to U.S. military leaders, who ranked first with 59%.

11 The survey was commissioned by Maryland Citizens Against Lawsuit Abuse and the state chapter of the National Federation of Independent Businesses. It was reported in Gazette.Net, Maryland Community Newspapers Online, and is available at: [http://www.gazette.net/stories/05152009/Busi new181148_32534.shtml](http://www.gazette.net/stories/05152009/Businew181148_32534.shtml).


The Costs of Liability for Small Business

The costs of litigation against small businesses are substantial

For purposes of this study, small businesses are defined as those with $10 million or less in annual revenues. NERA estimates that in 2008 small businesses in this category numbered over 28 million and were 99% of all businesses (See Exhibit 1, p. 5).

To estimate the tort liability costs for businesses of this size, NERA draws on three sources:

- “2009 Update on U.S. Tort Cost Trends” by Tillinghast/Towers Perrin. Since 1985, this actuarial consulting firm has published an annual estimate of insured and self insured tort costs. The Tillinghast/Towers Perrin estimate of total tort costs in 2008 is $254.7 billion, with $160.5 billion on businesses, and $29.8 billion of which is medical malpractice liability.

- Marsh, Inc, a major insurance brokerage firm that provided actual costs of insurance to businesses of different sizes.

- MarketStance, a market research firm specializing in insurance, which provided estimates of liability costs not covered by insurance.

The costs included are: benefits paid or expected to be paid to third parties (losses and incurred losses), defense costs, and administrative expenses incurred by insurance companies or self insured entities.

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14 In 2004 and 2007, NERA estimated the costs of liability for small businesses, and the results were reported in papers published by the U.S. Chamber Institute for Legal Reform. The former study reported an $88 billion tort price tag for small businesses in 2002, with small businesses bearing 68% of business tort liability costs but taking in only 25% of revenues. It can be found at [http://www.instituteforlegalreform.com/component/ilr_docs/29/all/STU.html?start=40](http://www.instituteforlegalreform.com/component/ilr_docs/29/all/STU.html?start=40).

The latter study showed that small business tort costs were $98 billion in 2005, or 69% of business tort liability costs, with 19% of revenue coming in to small businesses. It can be found at [http://www.instituteforlegalreform.com/component/ilr_docs/29/all/STU.html?start=140](http://www.instituteforlegalreform.com/component/ilr_docs/29/all/STU.html?start=140). However, the methodology has been changed significantly since the earlier studies, and direct comparisons cannot be made between the data in this report and the earlier studies. For example, the earlier estimates did not include non-employee businesses, because data on these businesses were not available, but MarketStance has since updated its data to include these companies. See Technical Appendix.

15 For a full discussion of how these sources were used, see attached Technical Appendix.


17 These costs do not include costs incurred by federal and state court systems in administering actual suits, and indirect costs, such as those incurred to avoid litigation. They also do not include certain extraordinary costs not reported by insurance companies, such as the 1998 settlement between tobacco manufacturers and various state attorneys general.
NERA’s findings are as follows:\textsuperscript{18}

- The tort liability price tag for small businesses in America in 2008 was $105.4 billion.
- Small businesses bore 81 percent of business tort liability costs, but took in only 22 percent of revenue.
- Small businesses paid $35.6 billion of their tort costs out of pocket as opposed to through insurance.

Some of the litigation costs, no doubt, were incurred on behalf of legitimate lawsuits; however, frivolous or unreasonable lawsuits continue to be an ongoing problem. Even if a suit is dismissed, or does not result in payment to the plaintiff, it must be defended. According to a representative of the National Federation of Independent Businesses (NFIB), “Frivolous lawsuits are often filed just to harass small business owners but they still cost owners’ legal fees and time which could range from $2,000 to $5,000...Our typical member averages $50,000 a year...If you take $5,000 out that’s a significant hit.”\textsuperscript{19}

The inefficiency of the tort system is legion, and to many, excessive. Only 46% of the total direct costs go to plaintiffs in the form of economic and non-economic damages, and 54% is consumed by transaction costs.\textsuperscript{20} (By comparison, in the no-fault compensation systems for on-the-job and vaccine-related injuries, administrative costs make up only about 20% and 15% of total costs respectively\textsuperscript{21}). The costs of defending against a lawsuit are excessive and, in no small measure, wasteful.\textsuperscript{22} When those costs must be borne by a small business they can be debilitating.

\textsuperscript{18} These figures do not include medical malpractice liability, which is addressed in the next section of this report.
\textsuperscript{20} Congressional Budget Office, \textit{The Economics of U.S. Tort Liability: A Primer}, October 2003.
\textsuperscript{21} Congressional Budget Office, \textit{The Economics of U.S. Tort Liability: A Primer}.
\textsuperscript{22} American College of Trial Lawyers Task Force on Discovery and the Institute for the Advancement of the American Legal System, \textit{Interim Report}, August 1, 2008, in which 1,494 trial lawyers, plaintiff and defense were surveyed, and 81% of the respondents said the civil justice system was too expensive.
#### Exhibit 2:
Estimated 2008 Commercial Tort Costs

<table>
<thead>
<tr>
<th>Commercial Tort Costs</th>
<th>2008 Estimates of Number and Size of Businesses</th>
<th>Estimated 2008 Commercial Liability Tort Costs</th>
<th>% Total Commercial Liability Tort Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Businesses</td>
<td>Revenues</td>
<td>Percent of Revenues</td>
</tr>
<tr>
<td>&lt; $1 Million</td>
<td>27,226,655</td>
<td>$2,756</td>
<td>8%</td>
</tr>
<tr>
<td>$1 to $4.9 Million</td>
<td>1,293,670</td>
<td>$2,776</td>
<td>8%</td>
</tr>
<tr>
<td>$5 to $9.9 Million</td>
<td>246,300</td>
<td>$1,691</td>
<td>5%</td>
</tr>
<tr>
<td>&lt; $10 Million</td>
<td>28,766,625</td>
<td>$7,223</td>
<td>22%</td>
</tr>
<tr>
<td>$10 to $50.0 Million</td>
<td>221,195</td>
<td>$4,578</td>
<td>14%</td>
</tr>
<tr>
<td>&gt; $50 Million</td>
<td>58,390</td>
<td>$21,368</td>
<td>64%</td>
</tr>
<tr>
<td>Total</td>
<td>29,046,210</td>
<td>$33,168</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Costs of the Tort System for Small Businesses in 2008*

NERA ECONOMIC CONSULTING

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23 For sources and notes, see technical appendix.
Medical Malpractice

Many medical groups and labs qualify as small businesses, and liability is a major concern

The nation’s attention has been focused recently on the high costs of healthcare and, as part of that, the costs of medical malpractice. Although we may think of physicians and medical labs primarily in their professional roles, they are also businesses dealing with the customary issues of running a business, striving to keep costs manageable and operations running smoothly. Our dysfunctional medical liability system presents a significant business challenge.

According to Philip Howard, Chairman of Common Good and a nationally recognized expert on medical malpractice, the costs associated with medical malpractice have been financial and human. Distrust of the legal system has led to a culture of defensiveness that diminishes quality, raises costs and corrodes human dealings throughout the healthcare system.

The medical malpractice liability system is highly unpredictable. An overwhelming majority of physicians (83%) do not feel that physicians can trust the system of justice to achieve a reasonable result if they are sued. This perception is realistic. Meritless medical malpractice lawsuits are more common than one might expect. According to a recent study led by Professor David Studdert of Harvard School of Public Health, almost two out of five medical malpractice claims were baseless, or lacking evidence of injury, substandard care, or both. One in four of these baseless claims resulted in payment to the plaintiff. All had to be defended, no doubt vigorously and at considerable expense.

Further, Professor Studdert’s study noted that over half the total cost of the malpractice system (54%) goes to lawyers and administrative costs. Adding to the distrust and perception of inefficiency is the harsh reality that it takes an average of five years to get to settlement.


26 Studdert et al., “Claims, Errors, and Compensation Payments in Medical Malpractice Litigation.”
As a result of the liability climate, the practice of “defensive medicine” is nearly universal. “Defensive medicine” occurs when doctors engage in unnecessary tests, diagnostic procedures, and referrals for consultation primarily to defend against a potential future malpractice claim. A 2002 Harris poll of physicians found that 91% of physicians had noticed other physicians ordering more tests than they would based solely on a professional judgment of what is medically needed, and 79% reported that they themselves do this due to concerns about malpractice liability. In addition, as reported in another paper by David Studdert, a recent survey of specialist physicians who were part of the Project on Medical Liability in Pennsylvania found that nearly all (93%) reported practicing “defensive medicine.”

A new study published by the American Heart Association reinforces the long held belief that malpractice or the fear of litigation has a substantial impact on the overall cost of healthcare. The study, which surveyed nearly 600 cardiologists nationwide to determine whether “physicians’ behavior and attitudes explain some of the regional variations in the number of intensive procedures,” found that “nearly 24% of those surveyed reported that fear of malpractice was a non-clinical factor in their decision to recommend catheterization.” Twenty seven percent of the respondents also related that “if they thought their colleagues were likely to order the procedure, they would too.”


28 David M. Studdert, LLB, ScD, MPH; Michelle M. Mello, JD, PhD, MPhil; William M. Sage, MD, JD; Catherine M. DesRoches, DrPh; Jordan Peugh, MA; Kinga Zapert, PhD; Troyen A. Brennan, MD, JD, MPH, “Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment,” JAMA, Vol. 293 No 21, June 1, 2005.

29 Frances Lee Lucas, PhD; Brenda E. Sirovich, MD, MS; Patricia M. Gallagher, PhD; Andrea W. Siewers, MPH; and David E. Wennberg, MD, MPH; “Variations in Cardiologists’ Propensity to Test and Treat” American Heart Association, published online April 15, 2010.
The costs of medical malpractice liability for small practices and labs\textsuperscript{30} are enormous

NERA makes the following estimates of the costs of medical malpractice liability for small businesses:

- Medical malpractice costs for doctors in small groups and small medical labs total $28 billion.
- This is 94\% of the total costs of medical malpractice ($29.8 billion).
- When medical malpractice costs are added to all other tort liability costs for small businesses, the total is $133.4 billion and accounts for 83\% of total tort costs for businesses of all sizes ($160.5 billion).

Medical malpractice is playing a role in transforming the settings in which doctors practice. According to a recent article in the New York Times, doctors are moving away from practicing in small groups and are joining hospitals and health systems in larger numbers. As recently as 2005, more than two-thirds of medical practices were physician-owned, but within three years that share dropped below 50\%. The article points out that for older doctors the change away from private practice can be wrenching. Sadly, the decline of private practices “may put an end to the kind of enduring and intimate relationships between patients and doctors that have long defined medicine.” According to the New York Times, growing concern over medical errors is among the causes of this trend away from the small private practice.\textsuperscript{31}

\textsuperscript{30} Small practices and labs are defined as those with $10 million or less in annual revenues.

Exhibit 3: Estimated 2008 Commercial and Medical Malpractice Costs

<table>
<thead>
<tr>
<th>Revenue Categories</th>
<th>Commercial Liability Tort Costs</th>
<th>Medical Malpractice Liability Tort Costs</th>
<th>Total Tort Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent of Total</td>
<td>Total</td>
</tr>
<tr>
<td>&lt; $1 Million</td>
<td>$74.8</td>
<td>57%</td>
<td>$22.4</td>
</tr>
<tr>
<td>$1 to $4.9 Million</td>
<td>$23.8</td>
<td>18%</td>
<td>$3.9</td>
</tr>
<tr>
<td>$5 to $9.9 Million</td>
<td>$6.9</td>
<td>5%</td>
<td>$1.6</td>
</tr>
<tr>
<td>&lt; $10 Million</td>
<td>$105.4</td>
<td>81%</td>
<td>$28.0</td>
</tr>
<tr>
<td>$10 to $50.0 Million</td>
<td>$12.3</td>
<td>9%</td>
<td>$.3</td>
</tr>
<tr>
<td>&gt; $50 Million</td>
<td>$13.0</td>
<td>10%</td>
<td>$1.5</td>
</tr>
<tr>
<td>Total</td>
<td>$130.7</td>
<td>100%</td>
<td>$29.8</td>
</tr>
</tbody>
</table>

Costs of the Tort System for Small Businesses in 2008
NERA Economic Consulting

31 For sources and notes, see technical appendix.
Forecasts for Tort Costs in 2011

In its most recent report, which estimates the total tort costs for 2008, Tillinghast/Towers Perrin forecasts tort cost growth up to 2011. Based on an analytical model they developed for predicting the influence various factors will have on future litigation costs, they estimate that tort costs will increase by 3% in 2009, 4% in 2010, and 6% in 2011. NERA used this model to then forecast litigation costs for small businesses in 2011.

Tort costs for small businesses in 2011 (excluding medical malpractice) will total $121.2 billion ($150.4 billion for businesses of all sizes).

Medical malpractice costs for small businesses in 2011 will total $30.8 billion, yielding a total tort cost figure of $152 billion ($183.1 billion for businesses of all sizes).

32 “The first is inflation. Spending by the U.S. government has increased dramatically, with sizable growth in the country’s debt and annual deficit. While inflation remains relatively tame in 2009, we [Tillinghast/Towers Perrin] see the potential for a return to inflation levels of the 1970s in a few years. Tort costs will likely increase along with that growth. In addition, data over the last 35 years show a correlation between monetary inflation (defined as the change in the Consumer Price Index [CPI] and social inflation (defined as the change in the average tort cost per person, after adjusting for CPI changes).”

“The second aspect is the change in the U.S. presidency and administration from Republican to Democrat. From 1981 to 2008, in all but two terms (1993-2000) the U.S. was headed by a Republican president. While the presidency itself may not directly influence tort costs, the president’s judicial appointments may have a more meaningful impact.”


33 Tillinghast will release its report detailing 2009 tort costs toward the end of this year when data becomes available.
<table>
<thead>
<tr>
<th>Revenue Categories</th>
<th>Commercial Liability Tort Costs</th>
<th>Medical Malpractice Liability Tort Costs</th>
<th>Total Tort Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent of Total</td>
<td>Total</td>
</tr>
<tr>
<td>&lt; $1 Million</td>
<td>$86.0</td>
<td>57%</td>
<td>$24.7</td>
</tr>
<tr>
<td>$1 to $4.9 Million</td>
<td>$27.3</td>
<td>18%</td>
<td>$4.3</td>
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<td>$5 to $9.9 Million</td>
<td>$7.9</td>
<td>5%</td>
<td>$1.8</td>
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<tr>
<td>&lt; $10 Million</td>
<td>$121.2</td>
<td>81%</td>
<td>$30.8</td>
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<tr>
<td>$10 to $50.0 Million</td>
<td>$14.2</td>
<td>9%</td>
<td>$.4</td>
</tr>
<tr>
<td>&gt; $50 Million</td>
<td>$15.0</td>
<td>10%</td>
<td>$1.6</td>
</tr>
<tr>
<td>Total</td>
<td>$150.4</td>
<td>100%</td>
<td>$32.7</td>
</tr>
</tbody>
</table>

For sources and notes, see technical appendix.
Conclusion

Small businesses play a central role in the health of the U.S. economy, and Americans have a stake in protecting them from the wasteful and excessive costs that are part of the tort litigation system. Meaningful, common sense reforms at the state and federal level should be considered and passed into law. Legislators should also be alert to pending legislation that could expand liability and harm small businesses. For more information on reforms see our website at http://www.instituteforlegalreform.com/about-ilr.html.
Summary of the Analysis Performed for this Study

Business liability costs are estimated using data on actual insurance purchases for clients of Marsh, Inc. (“Marsh”), a major broker of business insurance, combined with estimates of the fraction of costs that are uninsured from MarketStance and with estimates of the revenue of businesses of different sizes based on the U.S. Economic Census. These business revenue data are used to scale up the average insurance costs for the sample of Marsh businesses to estimate the costs for the U.S. economy as a whole. This aggregate estimate is adjusted to match the values reported by Towers Perrin in their annual study of U.S. tort costs. Our 2006 study methodology was updated to include non-employee businesses and medical malpractice tort costs.

Forecasted U.S. tort costs by size of business for 2011 are also developed by combining the distribution of costs by size of business for 2008 with forecasted aggregate estimates of U.S. tort costs in 2011 reported by Towers Perrin.

Annotated tables reporting the results of the analysis are incorporated in this Appendix.

Analysis Steps Performed for this Study

Estimating Liability Costs

The actual costs of insurance for businesses in different industries and size categories are developed from data on insurance premiums paid by clients of Marsh. These data were obtained from the separate brokerage operations of Marsh that focus on small and large businesses.

U.S. commercial liability tort costs are estimated separately for commercial automobile liability, medical malpractice, and other commercial liability lines. For each line of insurance, median insurance premium costs per $1,000 in business revenues are computed for businesses of different sizes (as defined by revenues) and for businesses in different industries (as defined by one digit SIC codes). The median insurance costs per $1,000 in business revenues in each industry and size category is multiplied by the estimated U.S. revenues for the category (developed for 2008 from census data by MarketStance) and the proportion of businesses that purchase insurance. These U.S. insurance premium cost estimates are scaled by a calibration factor such that the aggregate premium cost for all categories equals the value reported by A.M. Best for premiums earned in 2008.

1 This is the same approach used in the Towers Perrin study “2009 Update on U.S. Tort Cost Trends”.
2 We also reweight the convenience sample of Marsh clients by industry category to match the revenue distribution in the U.S. economy.
3 The Towers Perrin forecast of future tort costs combined personal and commercial exposures. We decompose the Towers Perrin forecast into these separate components making assumptions the noted in Table 4.
4 We now use the medians within each category to estimate the distribution of premium costs by size of business to reduce the influence of outliers in the sample within each category.
5 These data are not reported for 2008 in the Census. MarketStance develops annual estimates making adjustments for revenue growth since the prior available Census, described further below.
The proportion of all businesses that buy primary and excess liability insurance (either general liability or specialized liability lines) or commercial automobile insurance is assumed to equal the proportion of liability costs that are insured (estimated by MarketStance). The proportion of small businesses that purchase medical malpractice insurance relative to the proportion of large businesses that purchase medical malpractice insurance was assumed to be equal to the relative proportion of businesses within the services industry (SIC code Division I: 7000-8900) that purchase liability insurance.

Total liability costs are calculated by adjusting premiums earned by the combined ratio for the corresponding lines reported by A.M. Best for 2008. The combined ratio is a standard financial ratio used by insurers to express the cost of paying losses and administering policies as a percent of the premium revenue they earn. By adjusting liability premium data by the combined ratio, we estimate the total liability losses associated with the cost of insurance.

The total liability costs consist of insured costs and costs associated with uninsured and self-insured out-of-pocket costs. The proportion of liability costs that are uninsured or self-insured by businesses themselves is estimated by MarketStance for businesses in different revenue size categories. Uninsured costs are scaled to match the aggregate values reported by Towers Perrin.

**Lines of Insurance Analyzed in this Study**

The insurance lines used in this analysis are commercial automobile liability, medical malpractice liability, the liability components of packaged products (including commercial multi-peril and business owners’ policies), and all other primary and excess lines of liability insurance (the components of which are described below). All other primary and excess lines of liability insurance include many specialized lines of insurance, but the following lines constitute over 97% of the premiums:

- Excess/Umbrella Liability;
- Directors & Officers Liability;
- General Liability;
- Professional Indemnity/Errors & Omission;
- Employment Practices Liability;
- Fiduciary Liability;
- Pollution/Environmental Liability;
- Miscellaneous Casualty.
Combining Marsh Middle Market and Global Placement Client Data

Middle market and small business data were obtained from the Marsh Commercial Business Center in San Antonio ("San Antonio data"). These data include packaged and mono-line policies serviced through its Marsh Commercial Business Center and accounts serviced by Hartford on behalf of Marsh. The majority of Marsh's business consists of its "Global Placement" clients including Marsh's Casualty practice and its Financial and Professional Liability Practice, which places Directors & Officers Liability, Professional Services Firm Indemnity, Error & Omissions and other professional liability lines. We obtain data for these clients from Marsh's BASYS database.

When an earlier edition of this study was conducted using 2002 data, Marsh's middle-market clients were largely served through its Tampa operation, which has since been restructured. Middle market clients are now served through San Antonio. Client revenues were available for Tampa but are not available for San Antonio. We use the 2002 revenue distribution for Tampa to estimate the 2008 revenue distribution for San Antonio clients. Specifically, we adjusted the revenues from the Tampa 2002 data for inflation and scaled the number of accounts and total premiums paid to match the 2008 data. We then calculated the median premium cost per $1,000 in revenue by revenue category for the estimated small and middle-market accounts. The 2002 Tampa sample consisted of over 2,000 open accounts with average liability and umbrella premiums of $30,000. Data from the San Antonio and the global placement database are combined to create weighted average estimates of insurance costs for each industry and revenue size category. The San Antonio accounts consist principally of businesses with less than 100 employees and less than $50 million in annual revenues. Many of the lowest risk accounts buy Business Owners Policies (BOP) which typically combine property, general liability and auto cover. The San Antonio data includes aggregate statistics for approximately 1,300 accounts and has average annual liability and umbrella premiums of about $42,000.

Global Placement accounts consist principally of businesses with more than $1 million in revenues. These more than 4,200 accounts have average liability and umbrella premiums of about $660,000.

Premium costs for employee businesses are calculated as the weighted average of the San Antonio and Global Placement data. Estimated premium costs for non-employee businesses (over 99.9 percent of which have annual revenues less than $1 million) are assumed equal to the median cost of packaged policies.

Calibrating Estimates to Match Reported Aggregate U.S. Insurance Premiums and Tort Costs

A.M. Best publishes "Best's Aggregates & Averages Property/Casualty United States & Canada" in which annual aggregate premiums are calculated from insurance companies' regulatory filings. Lines of insurance (as classified by A.M. Best) that are relevant to this study are 1) the liability portion of commercial multiple peril lines, 2) products liability lines, 3) other liability lines, and 4) other commercial auto liability lines excluding no-fault lines.

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6 Other liability lines include general liability and specialized liability coverage including the following lines placed by Marsh: Pollution Legal Liability, Directors & Officers' Liability, Professional Services Firm Indemnity, Error & Omissions, Employment Practices Liability, and Fiduciary Liability.
Towers Perrin publishes its “Update on U.S. Tort Cost Trends” annually in which it estimates aggregate costs of the U.S. tort system. We scale the costs reported by Marsh clients to match the aggregate national tort costs reported by Towers Perrin and A.M. Best.

Estimating Businesses
Revenues in the U.S. Economy

The most recent Economic Census data is available for 2002. MarketStance uses these data along with more up to date payroll data to estimate the total revenues in the U.S. economy for 2008. The estimate is based on the historical ratio of revenue to payroll computed from the 1992, 1997, and 2002 Economic Censuses by industry group. The aggregate payroll of businesses in 2008 is computed using County Business Patterns data from the U.S. Census Bureau and employment data from the Bureau of Labor Statistics. The ratio of revenue to payroll, adjusting for historical trends for certain industries, is multiplied by the aggregate payroll data to estimate total revenues for employer businesses in 2008. Separately, MarketStance estimates the number and aggregate revenues of non-employee firms using data from the census.

Changes to the Study Since 2006

We have combined our insurance cost estimates for small and middle market clients and combined all companies with annual revenues less than $1 million. Without middle market client revenues for 2008 it is too difficult to reliably estimate values for the smallest businesses separately.

When this study was conducted in 2006, we did not include the revenues of non-employee firms, which are a small percentage of total revenues in the U.S. economy. MarketStance now estimates the percent of tort costs that are insured for non-employee businesses. Non-employee businesses are now included in this study. The table below presents the estimated business revenues by revenue category for 2008 including and excluding non-employee firms.

2008 Business Revenues by Size of Company

Insurance costs are now computed for each industry (as defined by one digit SIC codes). Premiums per $1,000 revenue are estimated for each industry and then averaged across all industries weighting by revenue. This accounts for differences in the industry composition of Marsh’s clients compared to the composition in the U.S. economy.

Revenue data from BASYS used to compute premiums per $1,000 revenue are developed by Marsh from
third party data providers for their clients. We rely on the sample of clients for which revenue data is available. The estimates or relevant business revenues developed by Marsh are noisy. To reduce the influence of outliers on estimates of insurance costs per $1,000 revenue, we exclude accounts in the Marsh data that are reported to pay over 20% of their annual revenues in premiums. We also use median premium per thousand revenues to estimate the distribution of costs by size of business. Medians are more robust than means (reported in the prior study) to the influence of outliers.

Finally, we report liability cost estimates for medical malpractice. These costs are computed separately and do not affect our estimates of liability tort costs.

Limitations of the Study
The data sources available for this analysis imposed limitations. The study assumes the following.

- The distribution of the number of businesses and of sales and receipts by enterprise for 2002 is representative of the current distribution;
- The payroll of businesses grew between 2002 and 2007 at the same rate as reported in County Business Patterns data from the U.S. Census Bureau and employment data from the Bureau of Labor Statistics;
- The payroll of businesses grew between 2007 and 2008 at the same rate as employment data from the Bureau of Labor Statistics;
- The ratio of revenues to payroll in the past U.S. Economic Censuses is representative for 2008;
- The scaled distribution of the number of account, total revenues, and premiums paid from the 2002 Tampa data can be applied to the data for Marsh’s San Antonio middle and small-market clients;
- The fraction of businesses that buy liability insurance (either general liability or specialized liability lines) or commercial automobile insurance is proportional to the liability costs that are insured as estimated by MarketStance;
- The proportion of Marsh accounts that buy specific lines and the associated costs for businesses within each size category (after calibration) is representative of typical insurance purchases;
- MarketStance estimates of uninsured/self-insured costs for businesses of different size categories accurately represent the uninsured/self-insured costs of businesses with corresponding average revenues;
- Estimated premium costs for non-employee businesses are equal to the median cost of packaged policies.
- Costs associated with first party losses do not represent a material proportion of the liability costs covered by the liability insurance lines included in the study.
# Appendices Exhibit 1:
Forecast 2011 Commercial and Medical Malpractice Tort Costs

<table>
<thead>
<tr>
<th>Revenue Categories</th>
<th>Including Non-Employee Firms</th>
<th>Excluding Non-Employee Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $1 Million</td>
<td>$2.8</td>
<td>$1.6</td>
</tr>
<tr>
<td>$1 to $4.9 Million</td>
<td>$2.8</td>
<td>$2.8</td>
</tr>
<tr>
<td>$5 to $9.9 Million</td>
<td>$1.7</td>
<td>$1.7</td>
</tr>
<tr>
<td>$10 to $50.0 Million</td>
<td>$4.6</td>
<td>$4.6</td>
</tr>
<tr>
<td>&gt; $50 Million</td>
<td>$21.4</td>
<td>$21.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$33.2</strong></td>
<td><strong>$32.0</strong></td>
</tr>
</tbody>
</table>
## Appendixes Exhibit 2:
Estimated 2008 Commercial Tort Costs

<table>
<thead>
<tr>
<th>Commercial Tort Costs**</th>
<th>2008 Estimates of Number and Size of Businesses</th>
<th>Estimated 2008 Commercial Liability Tort Costs</th>
<th>% Total Commercial Liability Tort Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $1 Million</td>
<td>27,226,655</td>
<td>$2,756 8%</td>
<td>$40.9 $33.9 $74.8 57%</td>
</tr>
<tr>
<td>$1 to $4.9 Million</td>
<td>1,293,670</td>
<td>$2,776 8%</td>
<td>$22.6 $1.1 $23.8 18%</td>
</tr>
<tr>
<td>$5 to $9.9 Million</td>
<td>246,300</td>
<td>$1,691 5%</td>
<td>$6.4 $.5 $6.9 5%</td>
</tr>
<tr>
<td>&lt; $10 Million</td>
<td>28,766,625</td>
<td>$7,223 22%</td>
<td>$69.8 $35.6 $105.4 81%</td>
</tr>
<tr>
<td>$10 to $50.0 Million</td>
<td>221,195</td>
<td>$4,578 14%</td>
<td>$9.9 $2.4 $12.3 9%</td>
</tr>
<tr>
<td>&gt; $50 Million</td>
<td>58,390</td>
<td>$21,368 64%</td>
<td>$6.4 $6.6 $13.0 10%</td>
</tr>
<tr>
<td>**Total</td>
<td>29,046,210</td>
<td>$33,168 100%</td>
<td>$86.1 $44.6 $130.7 100%</td>
</tr>
</tbody>
</table>

Sources

- Marsh Commercial Business Center in San Antonio 2008 account data;
- 2008 account data for companies serviced by The Hartford on behalf of Marsh;
- 2002 account data for Marsh’s Tampa operation;
- Marsh Global Placement data (BASYS) for 2008;
- MarketStance 2008 data;

7 Data are from MarketStance.

8 Insured costs by revenue category are estimated by multiplying total premiums paid by the combined loss ratio reported by A.M. Best for 2008 and are scaled to match the aggregate insured tort costs reported by Towers Perrin. The distribution of premiums by revenue category is estimated using the median premiums per thousand dollars of revenue computed from data on insurance purchases from Marsh, Inc. Median premiums per thousand dollars of revenue are computed by industry (defined by SIC Division) and combined based on total revenues within each industry.

9 Uninsured costs are estimated as a multiple of the insured liability costs. The percent of costs uninsured is obtained from MarketStance. Values are scaled to match aggregate uninsured costs reported by Towers Perrin.

10 Excluding medical malpractice.
### Appendices Exhibit 3:
Estimated 2008 Commercial and Medical Malpractice Tort Costs\(^\text{11}\)

<table>
<thead>
<tr>
<th>Revenue Categories</th>
<th>Commercial Liability Tort Costs(^\text{12})</th>
<th>Medical Malpractice Liability Tort Costs(^\text{13})</th>
<th>Total Tort Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent of Total</td>
<td>Total</td>
</tr>
<tr>
<td>$5 to $9.9 Million</td>
<td>$6.9</td>
<td>5%</td>
<td>$1.6</td>
</tr>
<tr>
<td>&lt; $10 Million</td>
<td>$105.4</td>
<td>81%</td>
<td>$28.0</td>
</tr>
<tr>
<td>$10 to $50.0 Million</td>
<td>$12.3</td>
<td>9%</td>
<td>$3.3</td>
</tr>
<tr>
<td>&gt; $50 Million</td>
<td>$13.0</td>
<td>10%</td>
<td>$1.5</td>
</tr>
<tr>
<td>Total</td>
<td>$130.7</td>
<td>100%</td>
<td>$29.8</td>
</tr>
</tbody>
</table>

### Appendices Exhibit 4:
Forecasted 2011 Commercial and Medical Malpractice Tort Costs\(^\text{14}\)

<table>
<thead>
<tr>
<th>Revenue Categories</th>
<th>Commercial Liability Tort Costs(^\text{15})</th>
<th>Medical Malpractice Liability Tort Costs(^\text{16})</th>
<th>Total Tort Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent of Total</td>
<td>Total</td>
</tr>
<tr>
<td>&lt; $1 Million</td>
<td>$66.0</td>
<td>57%</td>
<td>$24.7</td>
</tr>
<tr>
<td>$1 to $4.9 Million</td>
<td>$27.3</td>
<td>18%</td>
<td>$4.3</td>
</tr>
<tr>
<td>$5 to $9.9 Million</td>
<td>$7.9</td>
<td>5%</td>
<td>$1.8</td>
</tr>
<tr>
<td>&lt; $10 Million</td>
<td>$121.2</td>
<td>81%</td>
<td>$30.8</td>
</tr>
<tr>
<td>$10 to $50.0 Million</td>
<td>$14.2</td>
<td>9%</td>
<td>$4.1</td>
</tr>
<tr>
<td>&gt; $50 Million</td>
<td>$15.0</td>
<td>10%</td>
<td>$1.6</td>
</tr>
<tr>
<td>Total</td>
<td>$150.4</td>
<td>100%</td>
<td>$32.7</td>
</tr>
</tbody>
</table>

---

12 Commercial liability tort costs for 2008, excluding medical malpractice costs.
13 Medical malpractice liability tort costs for 2008.
14 Total liability tort costs are computed on a 2011 forecast of commercial liability and medical malpractice liability tort costs. See Technical Appendix - Table 4 for details.
15 Commercial liability tort costs for 2011, excluding medical malpractice costs.
16 Medical malpractice liability tort costs for 2011.
### Appendices Exhibit 5: Historical and Expected Growth in Tort Costs

#### Historical (i.e. pre-2009) data, projected GDP, and projected total tort costs are from the Towers Perrin 2009 Update on U.S. Tort Cost Trends. Projections are based on conversations with Towers Watson (formerly Towers Perrin).

17 Historical (i.e. pre-2009) data, projected GDP, and projected total tort costs are from the Towers Perrin 2009 Update on U.S. Tort Cost Trends. Projections are based on conversations with Towers Watson (formerly Towers Perrin).

18 Personal and medical malpractice tort costs in 2009 are assumed to grow at the previous 3 year average annual rate. See the 2009 Update on U.S. Tort Cost Trends, page 11: “[In 2009] we expect only inflationary-type increases (possibly less) in many other areas, such as auto liability (both personal and commercial), products liability and medical malpractice.”

19 Commercial tort costs for 2009 and 2010 are computed based on the estimated personal and medical malpractice tort costs.

20 Personal and medical malpractice tort costs in 2010 are assumed to increase at the average of the 2009 and 2011 annual rates.

21 Personal, commercial, and medical malpractice tort costs are assumed to grow at the same rate.

<table>
<thead>
<tr>
<th>Year</th>
<th>GDP</th>
<th>Personal</th>
<th>Commercial</th>
<th>Medical Malpractice</th>
<th>Commercial and Medical Malpractice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>2001</td>
<td>76.8</td>
<td>106.9</td>
<td>21.7</td>
<td>128.6</td>
<td>205.4</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>80.0+4.2%</td>
<td>128.8</td>
<td>+20.5%</td>
<td>24.2</td>
<td>+11.2%</td>
<td>152.9</td>
</tr>
<tr>
<td>2003</td>
<td>84.2+5.3%</td>
<td>135.0</td>
<td>+4.8%</td>
<td>26.5</td>
<td>+9.7%</td>
<td>161.5</td>
</tr>
<tr>
<td>2004</td>
<td>86.8+3.1%</td>
<td>145.3</td>
<td>+7.7%</td>
<td>28.2</td>
<td>+6.4%</td>
<td>173.5</td>
</tr>
<tr>
<td>2005</td>
<td>88.5+1.9%</td>
<td>143.5</td>
<td>−1.2%</td>
<td>29.4</td>
<td>+4.3%</td>
<td>172.9</td>
</tr>
<tr>
<td>2006</td>
<td>87.4−1.3%</td>
<td>129.4</td>
<td>−9.9%</td>
<td>30.1</td>
<td>+2.6%</td>
<td>159.5</td>
</tr>
<tr>
<td>2007</td>
<td>13,805</td>
<td>90.8</td>
<td>+3.9%</td>
<td>130.8</td>
<td>+1.1%</td>
<td>30.4</td>
</tr>
<tr>
<td>2008</td>
<td>14,265</td>
<td>94.2</td>
<td>+3.7%</td>
<td>130.7</td>
<td>−0.0%</td>
<td>29.8</td>
</tr>
<tr>
<td>2009</td>
<td>14,051</td>
<td>96.2</td>
<td>+2.1%</td>
<td>136.2</td>
<td>+4.2%</td>
<td>29.9</td>
</tr>
<tr>
<td>2010</td>
<td>14,585</td>
<td>100.1</td>
<td>+4.1%</td>
<td>141.8</td>
<td>+4.1%</td>
<td>30.9</td>
</tr>
<tr>
<td>2011</td>
<td>15,241</td>
<td>106.1</td>
<td>+6.0%</td>
<td>150.4</td>
<td>+6.0%</td>
<td>32.7</td>
</tr>
</tbody>
</table>