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Room 90

"Tort Liability Cost"

by

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Note: It is expected that you will have reviewed the speakers' paper before the Seminar.

Tort Liability Litigation Costs

by

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Abstract

This paper analyzes tort liability litigation costs using a sample of almost 100,000 paid claims for five different commercial lines of liability insurance reported to the Texas Department of Insurance. Defense costs average $35,000 per claim in 2004$, which corresponds to a share of 0.22 of the payment to claimants. Defense costs increase with case scale and case complexity. Higher stakes and greater complexity boost reliance on outside counsel and decrease reliance on in-house counsel. While different injury types affect defense costs, as do the initial indemnity reserve and initial expense reserve amounts, there remain unexplained systematic differences across lines of insurance.

1. Introduction

Tort liability provides compensation to injured parties, but it does so with substantial transactions costs. Plaintiffs generally pay a contingency fee of one-third of the total award or settlement. Information on actual defense expenditures is quite limited because of lack of data. Examples of available estimates of defense litigation expenditures are provided in various reports by RAND and annual reports by Tillinghast–Towers Perrin. Hensler et al. (1987) use information from trials in Cook County and San Francisco and find that the share of total litigation expenditures borne by defendants was 19 percent for auto, 30 percent for non-auto, and 37 percent for asbestos.[1] Carroll et al. (2005) estimate defense costs for asbestos claims using various proprietary and confidential data sources. Their study finds that the share of defense expenditures for asbestos suits was 31 percent of total spending.[2] Tillinghast–Towers Perrin (2006) report total tort costs including payment to plaintiffs and administrative defense costs, but do not separate out the defense costs portion. They find that tort costs are now 2.2 percent of GDP and that the administrative expense portion of insured tort costs is 22.2 percent.[3]

This paper greatly expands the range of knowledge about the level and determinants of defense costs using data from a large sample of closed insurance claims in Texas for all commercial liability lines. These data provide the first information on a per claim basis of the actual defense expenses, the composition of these expenses, and the characteristics of the claims that affect these expenses. We show that among claims

[1] In this 1987 analysis, total litigation expenditures consist of defendant legal fees, plaintiff legal fees, and net compensation to the plaintiff. These estimates for asbestos are consistent with the earlier study by Kakalik and Pace (1986).
[2] Total spending is defined as gross compensation to claimants plus defense transactions costs.
[3] Note that administrative expenses do not include what they term defense costs, which "reflect both the costs directly incurred in the defense and investigation of a claim and general claim handling expenses." See p. 8 of Tillinghast–Towers Perrin (2006).

resulting in indemnity payment of at least $10,000, insurer defense expenses correspond to a considerable percent of insurers' payment to plaintiffs, averaging 22 percent across all insurance lines. As our empirical results demonstrate, defense expenses vary in predictable ways by factors such as lines of insurance and severity of injury.

In addition to providing new information on average defense expenses across different types of liability coverage, we also provide the first information on the allocation of such expenses among in-house counsel, outside counsel, and other litigation expenses. The allocation of expenditures between in-house counsel and outside counsel will be affected by their respective costs as well as their productivity in dealing with the particular type of claim.

We structure the empirical analysis using a simple model of the economic decision that insurers face with respect to defense expenditures. Insurers choose how much to spend on different components of litigation activities to minimize their total costs to resolve the claim.[4] Section 2 presents a basic theoretical model of the benefit-cost task undertaken by the insurer. The two main claim characteristics influencing defense expenditures are the scale of the claim and its complexity. Higher stakes make a higher level of litigation expenditures desirable, but how higher stakes affect the mix of in-house legal counsel and outside legal counsel will depend on the relationship between these expenditures in reducing liability costs. Increased case complexity will increase the level of expenditure as well as the reliance on outside legal counsel.

Section 3 describes the Texas Department of Insurance data used in the analysis. Section 4 provides summary statistics on litigation expenses and insurer payments, as

[4] For general introductions to the litigation model literature, see Cooter and Rubinfeld (1989), Posner (2003), Shavell (2004), and Kessler and Rubinfeld (2004).

well as information on trends in expenses and payments over the 1988–2004 period for which data are available. Five commercial lines are reported: general liability, auto liability, multiperil liability, medical professional liability, and other professional liability; we analyze the data overall and by insurance line. The summary statistics are of interest in their own right as they indicate a substantial legal expenditure for all lines, with auto liability claims having the lowest average defense expenditure per claim of $23,000 in 2004$ and medical professional liability and other professional liability having the highest average defense expenditure per claim of $62,000 and $51,000, respectively, in 2004$.

Section 5 presents a series of regression models for the determinants of the level of litigation expenses and the expense components. The empirical results indicate that larger claim levels increase defense expenditures, and more complex cases rely more heavily on outside counsel, indicating that in-house and outside counsel are substitutes. Section 6 concludes.

2. Framework

To explore how the scale and complexity of litigation affect insurer litigation expenditures, we make use of the following simple model. Although litigation expenditures arise within a game theoretic context, we abstract from these concerns and consider a reduced form version in which the insurer's payment function incorporates the claimant's decisions regarding litigation expenses and effort. The expected payment cost is given by $sc(z, h_1, h_2)$, where s is a positive claim scale parameter, z is a measure of case complexity, h_1 is the level of in-house counsel expenses, and h_2 is the level of outside

counsel expenses. The insurer's two choice variables are h_1 and h_2. The price of a unit of in-house counsel is normalized to equal 1 and is below the price $p>1$ for outside counsel. Hiring outside counsel is often cost-effective despite its higher price because it is generally not efficient for insurers to maintain a staff of in-house counsel for claim types that arise infrequently, require specialized expertise, or require a greater overall skill level. For insurance lines such as auto liability for which the claims are more routine, one would expect greater reliance on in-house counsel. We treat the case complexity variable z as an indicator of the factors that raise the relative productivity of using outside counsel.

Expected payment amounts increase with case complexity and decrease with the level of litigation expenditures, or $c_z > 0, c_1 < 0$, and $c_2 < 0$. Litigation expenditures have diminishing marginal effectiveness, so $c_{11} > 0$ and $c_{22} > 0$. Increased case complexity diminishes the efficiency of in-house counsel and enhances the efficiency of outside counsel, or $c_{1z} > 0$ and $c_{2z} < 0$. The value of c_{12} depends on the interrelationship between the two types of legal expenditures, as this cross partial term could be positive if the expenditures are substitutes, negative if the expenditures are complements, or zero if the cost function is additively separable.

The insurer's objective is to choose h_1 and h_2 to minimize the sum of expected payments plus litigation expenditures, or

$$\min_{h_1,h_2} Cost = sc(z, h_1, h_2) + h_1 + ph_2,$$

leading to the first-order conditions

$$0 = sc_1 + 1,$$

and

$$0 = sc_2 + p\,.$$

Outside counsel must meet a more demanding marginal efficiency requirement given its higher price. For these conditions to be a relative cost minimum, it also must be the case that

$$D = s^2 c_{11} c_{22} - s^2 (c_{12})^2 > 0\,.$$

The focus of the empirical analysis is on the effect of case scale and complexity on litigation expenditure decisions. The comparative static results imply that

$$\partial h_1 / \partial s = (s/D)\left[-c_{22}c_1 + c_{12}c_2\right],$$

$$\partial h_2 / \partial s = (s)\left[-c_{11}c_2 + c_{12}c_1\right],$$

$$\partial h_1 / \partial z = (s^2/D)\left[-c_{1z}c_{22} + c_{2z}c_{12}\right]$$

and

$$\partial h_2 / \partial z = (s^2)\left[-c_{11}c_{2z} + c_{12}c_{1z}\right].$$

The derivatives of the effects on litigation expenditures of case scale and complexity hinge on the sign and magnitude of c_{12}. The value of $\partial h_1 / \partial s$ is positive if $c_{12} \le 0$, but if c_{12} is very large and positive, implying that higher values of h_1 diminish the marginal productivity of h_2, the sign of $\partial h_1 / \partial s$ is ambiguous. Similarly, $\partial h_2 / \partial s$ will be positive if $c_{12} \le 0$ and ambiguous if $c_{12} > 0$. Case complexity will decrease the value of in-house counsel if $c_{12} \ge 0$; otherwise the relationship is ambiguous. In contrast, $\partial h_2 / \partial z$ will be positive if $c_{12} \ge 0$, and otherwise is ambiguous. Case complexity will boost the level of h_2 and decrease the level of h_1 if $c_{12} > 0$.

The effects of case scale are consequently less clear cut than the effects of case complexity. Note that if there is only one type of expenditure, increasing the case scale will unambiguously increase defense expenditures.

In the absence of large interactive effects of h_1 and h_2 in the payment function, increasing the case scale will boost h_1 and h_2, while increasing case complexity will reduce h_1 and increase h_2. However, given the interrelationship of the two types of expenditures, as embodied in c_{12}, the effects on expenditures of case scale and complexity are theoretically ambiguous. The empirical results provide information on the directions of these effects.

3. Data Description

The data we use for our study are from the Texas Department of Insurance (TDI) Commercial Liability Insurance Closed Claim Report. Texas requires detailed reports for all claims for which the total indemnity payments by all insurers are at least $10,000. There are two reporting forms used by the TDI: a short form for claims for which the indemnity payment is at least $10,000 but is below $25,000, and a long form for claims for which indemnity payments are at least $25,000. The long form reports information on the type of injury and how the injury occurred that is not reported on the short form, but both forms include information on litigation expenses, which are the key variables of interest in this paper. We analyze data from all available years, which currently include the years 1988–2004. All dollar values throughout the paper are adjusted to 2004$ using the Consumer Price Index for All Urban Consumers.

The focus on commercial liability captures a large share of the overall insurance market. Tillinghast–Towers Perrin (2006) estimate that the total U.S. tort costs of commercial lines were $145 billion, as compared to $87 billion for personal lines. The lines of insurance represented in the Texas data are mono-line general liability, commercial auto liability, commercial multiperil liability, medical professional liability, and other professional liability. This mix consequently includes both the types of insurance lines not generally associated with a tort liability "crisis," such as auto liability, as well as lines that may be more volatile, such as medical professional liability.

Commercial insurance lines consist of insurance purchased by businesses, as opposed to personal insurance that provides coverage for individuals. General liability insurance provides coverage for the liability risks caused by a business's products and operations, as well as by its independent contractors. Commercial auto liability insurance provides businesses with liability coverage for commercial vehicles. Commercial multiperil liability insurance covers risks to the business due to perils, such as fire, that are named in the insurance policy. Medical professional liability is insurance purchased by doctors and other medical professionals to address the liability from their patients. Other professional liability is insurance purchased by directors and officers of corporations as well as other non-medical professionals such as lawyers to address liability from shareholders and from clients.[5]

The Texas data include 176,866 paid claims across these five policy types over the 1988–2004 period.[6] We restrict the sample to 97,320 observations that meet the following criteria. Because our focus is on litigation expenditures, we include only paid

[5] For definitions of these lines of insurance, see Insurance Information Institute (2005).
[6] An additional 21 observations appear in the dataset but are missing information for all variables and are dropped. One other claim is dropped because it is missing information on policy type.

claims in which a suit was filed, the claimant used an attorney, and the insurer reports positive attorney expenses.[7]

The key outcomes of interest are total defense expenses and the allocation of defense expenses between in-house counsel and outside counsel. The key parameters are case scale and case complexity. All data are reported by the primary insurer. The primary insurer reports the breakdown of legal expenses into three categories: outside defense counsel, allocated expenses for in-house defense counsel, and allocated loss adjustment expenses such as those for court costs and stenographers. The sum of these three categories gives the total defense litigation expenses. Case complexity is represented by insurance line, whether the claim involved multiple parties as defendants,[8] and type of injury, which is available on the long form only. The survey reports whether the injury resulted in a fatality, as well as seventeen injury types, such as brain damage, back injuries, and so forth, and a catch-all 'other' injury category. Except for fatalities, insurers are instructed to record all injuries applicable to the claim, so multiple injuries can be reported for the same claim.

To control for the scale of the case, we note that any information on actual awards or settlements will be endogenously determined with defense expenses and should not be included as an explanatory variable without taking into account this endogeneity through instrumental variables methods. However, it is difficult to imagine any instrument that would affect the scale of the case but not affect defense expenses. Instead we use

[7] Out of the 176,866 paid claims, 71,633 are dropped from our sample because no suit was filed, an additional 233 are dropped because the claimant did not use an attorney, and 7,680 claims are dropped because insurer attorney defense expenses are reported as zero. The reason for these exclusions is that this paper focuses on defense costs associated with litigation rather than the transactions costs of liability insurance generally. The average total defense expenses for cases in which no suit was filed is $995.

[8] The 1997 Texas Liability Insurance Closed Claim Annual Report refers to multiparty claims as more complex than single party claims, p. 5.

information unique to the Texas dataset on initial indemnity reserves and initial expense reserves to control for scale. These reserve amounts, which are established based on the insurer's experience with the case type and the nature and extent of injuries, will serve as an exogenous variable influencing subsequent litigation expenditures. Unlike the final reserve amounts, initial reserve levels do not take into account the actual defense expenditures and payment levels. We demonstrate in the empirical section that these reserve amounts are exogenous measures of scale.

We also include a variable for a linear time trend in the regression estimates. In tracking trends in defense expenses, we compare defense spending to insurer payments to close the claims. The primary insurer reports its own payment to close the claim as well as the payments made by other parties. Because defense expenses pertain to the primary insurer only, we analyze trends in average defense expenses relative to average primary insurer payments.

We make one adjustment to the regressions in analyzing trends because of an unusual occurrence in 1997. One carrier submitted an unusually high number of related claims for the Other Products Manufacturers business class, with this carrier representing 6,852 of the total 17,173 claims (40 percent) for 1997 (Texas Department of Insurance 1997).[9] Most of these claims are smaller than the typical claim and also have lower defense expenses than the typical claim, which leads to an anomalously low average insurer payment and average defense expenditure relative to the remaining 16 years of data. Although we are not able to identify the specific insurer involved, we identify claims likely to be associated with this carrier by defining an indicator variable for claims

[9] The role of this carrier was to greatly increase the number of paid claims for 1997. The maximum number of paid claims for the years other than 1997 is 12,891 in 1993.

in 1997 with 'other products manufacturers' as the business class and 'general liability' as the policy type.[10] We include this indicator variable, which we name 'high claim anomaly 1997,' in the regressions and in the estimates of trends in defense expenses, and exclude these claims in the trend lines shown in Figure 1, as their inclusion considerably distorts the appearance of the trend.

4. Litigation Expenses by Insurance Type

Table 1 provides an overview of average defense expenses for the primary insurer and trends in expenditures for each of the five insurance policy types. The final column reports the averages for all five commercial lines in the Texas data.

The first three rows of Table 1 report the mean and standard deviation of the levels of expenditure by type of expenditure, with the information for total expenditures reported in the fourth row. The average expenditures for in-house counsel are quite modest and range from an average of $498 for other professional liability to $3,766 for medical professional liability. Outside counsel expenditures, reported in the second row of Table 1, are considerably larger than in-house counsel expenditures. Auto liability has the smallest average expenditure at just over $17,000. Multiperil liability and general liability are about 50 percent greater with outside counsel expenses around $25,000. The highest expenditures on outside counsel are for medical professional liability and other professional liability, with average outside counsel expenditures of around $43,000.

[10] We assume that the policy type was general liability, as 98 percent of the claims in 1997 with business class 'other products manufacturers' had general liability as the policy type, making it the only insurance policy category large enough to accommodate all of the carrier's related claims. We note that although this indicator variable picks up some claims not due to this one insurer, there were only 7,012 such claims in total in 1997, so this one carrier represents 98 percent of the claims of this type for 1997.

Expenditures on other legal expenses are more modest than for outside counsel but are considerably larger than for in-house counsel. With the exception of medical malpractice, which has other expenses above $14,000, these expenses are in the $4,900-$7,300 range per claim.

The total legal expenses for these three cost components average $34,662 across all lines. Auto liability claims have the lowest level of defense expenses, averaging $23,071, which is consistent with the more routine nature of such claims. The highest expenses are for medical professional liability and other professional liability, with average expenses of $61,243 and $50,698 respectively. These are also the two lines that involve the greatest level of payments as reflected in the primary insurer payment values, reported in the fifth row of Table 1.

The average defense expenditure share relative to the primary insurer's average payment to the claimant is reported in the sixth row of Table 1. These values average 0.22 across all lines, with a low of 0.18 for auto liability to a high of 0.31 for other professional liability. If we assume that the claimants' litigation costs equal a contingency fee rate of one-third, which is consistent with available evidence, the share of total litigation costs ranges from 0.51 for auto liability to 0.64 for other professional liability.[11]

The next two rows of Table 1 present the average growth rates over time in average defense expenses and in the ratio of average defense expenses to the average primary insurer payment. In each instance, we calculate the average values of defense expenses and insurer payments per year by policy type and across all lines. The

[11] The study of tort litigation costs in Cook County and San Francisco notes that contingency fees were typically one-third of the award and averaged "about 30 percent of total compensation." See Hensler et al. (1987), pp. 25-26.

regression of the natural log of the variable of interest, e.g., average defense expenses, against time yields the estimated growth rate over the sample period.[12]

Defense litigation costs rose by an average of 2.9 percent annually overall, with the greatest increases exhibited by medical professional liability and auto liability. The role of defense litigation costs as a share of total payments has grown as well at an average annual rate of 2.6 percent. Auto liability defense expenses relative to insurer payment amounts rose by the greatest amount, at 3.7 percent, while the 1.0 percent growth rate for other professional liability is not statistically significant.

One might expect that the defense cost share of total payments would increase if the claims process was becoming more complex and litigious. The rising scale of the payment levels will affect defense expenses as well, where the extent will depend on the elasticity of the litigation expenses with respect to payment levels. If that value is above 1.0, that influence could account for the growth in the defense expense share. However, the empirical analysis below shows that this elasticity value is actually well below 1.0, so the increased complexity of cases or factors other than simply the rising stakes of litigation must account for the rising share of insurer litigation expenses.

Figure 1 illustrates the trends in average defense expenses and average primary insurer payments that underlie these growth rates. As Figure 1 shows, average defense expenses per claim have been steadily rising over time. In contrast, average primary insurer payments have fluctuated with a less consistent trend. Because the average payment has exhibited an uneven but flat pattern over time, the overall growth in the ratio

[12] Thus, in calculating the growth rate of defense expenses relative to insurer payments, we use the ratio of the average annual defense expenditure to average annual payment rather than using the average of the individual claims ratios, which would be distorted by small claims outliers. Note that for the general liability claims and for all lines, we include the 'high claim anomaly 1997' indicator in the regression.

of the average defense expense to the average primary insurer payment is very similar to the annual growth rate of the average defense expenses per claim.

5. The Determinants of Litigation Expenses

We estimate four defense expenditure equations, first for the total expenditure and then for each of the three components of expenses. The equations include the same explanatory variables and take the following form:

$$\ln(Costs) = \alpha + \beta\, s + \gamma\, z + X'\lambda + \varepsilon\,,$$

where we use the notation of Section 2 in which *s* represents case scale and *z* represents case complexity. The vector *X* represents other control variables, and ε is a random error term. The parameters will be estimated separately by OLS for each of the defense expense equations.[13]

The empirical analysis consequently estimates a reduced form model of total litigation costs in which the intervening endogenous settlement and trial decisions are not explicitly modeled. Thus, our focus is on how different categories of defense cost outcomes are affected by the exogenous variables in the equation above. The overwhelming share of cases in the sample, 95.7 percent, consist of claims settled before trial. An additional 1.6 percent were settled after a trial had begun, and 2.7 percent are the result of a court award. The litigation cost share relative to the payment level increases with these lengthier legal proceedings, as the defense cost share is 0.208 for settlements before trial, 0.273 for settlements during trial, and 0.285 for completed trials. The regression equation consequently estimates average effects across these three classes of

[13] Because each equation includes the same explanatory variables, seemingly unrelated regression is identical to OLS.

outcomes rather than disentangling the underlying selection effects and endogeneity influences embedded within the model. Note too that the absence of information in the Texas Department of Insurance data on payments for claims below $10,000 excludes the role of defense expenditures in smaller stakes claims as well as for claims for which no payment is made. Nevertheless, the sample provides a more comprehensive perspective than previous litigation cost estimates.

To control for the case scale, we use information on the initial reserve amounts established by the insurer given the characteristics of the claim. The initial indemnity reserve provides a measure of the total expected payment amount associated with the claim, and the initial expense reserve indicates the expected level of litigation expenses. Because these initial reserves are predetermined, they are exogenous to the actual realized litigation expenditures.[14] We also include an indicator variable equal to one for claims in which initial defense reserves are reported as zero.

To control for case complexity, we use insurance line indicator variables with auto liability the omitted category, an indicator for multiple defendants, and, in our second set of regressions reported in Table 3, indicators for injury type. The regressions also include a time trend variable to capture time-related growth in the cost components and the indicator for 'high claim anomaly 1997.'

As demonstrated in Section 2, the predicted effects of these factors vary according to whether we are analyzing total expenditures or the individual components of

[14] When insurers set up their reserve amounts, they should reserve an amount that corresponds to actual expenditures for that case type. A regression of actual defense expenditures on initial expense reserves yields a coefficient of 0.93 (p-value = 0.00), demonstrating that on average, actual expenditures track expected expenditures closely. However, the R-squared in this equation is only 0.04, showing that there is a great deal of variation across cases in actual expenditures. A regression of actual defense expenditures on initial indemnity reserves shows a considerably weaker relation, with a coefficient of 0.09 (p-value=0.00) and an R-squared of 0.02.

expenditures. Higher levels of each of the scale variables should have a positive effect on the total litigation costs, as higher levels of expenditures are warranted for larger scale cases. The direction of the effect of scale on the different components of defense expenses may be different. The case complexity variables also may have differential effects in that case complexity should increase outside counsel expenses and reduce in-house counsel expenses. Because auto liability claims are routine relative to other liability claims, we expect total expenditures for all non-auto lines to be higher relative to auto liability.

Tables 2 and 3 report the regression results for the log of total defense expenses and for the log of the three component categories: in-house counsel, outside counsel, and other expenses. The two indemnity reserve variables are also in terms of natural logs so that their coefficients equal the pertinent elasticities.[15] Table 3 adds variables representing injury type to the regressions reported in Table 2. Because the initial indemnity reserve is affected by the nature of the injury, adding the injury type variables to the regression will also capture some effect of case scale as well as complexity.

In both Tables 2 and 3, the indemnity reserve amount has a significant positive effect on total defense expenses, outside counsel, and other expenses. Increasing the scale of the case lowers expenditures on in-house counsel in Table 2, but this effect is not significant once all the injury type variables are added in Table 3. The results are consistent with our hypothesis that more expensive and more complex cases with greater indemnity reserves will warrant the more expensive outside counsel, but will not have greater in-house counsel expenses. As one might expect, controlling for all the different

[15] We add one to all values before taking natural logs because some claims report zero values for reserve categories or defense expense categories.

injury types in Table 3 reduces the magnitudes of the estimated elasticities of the litigation costs with respect to the initial indemnity reserve. The elasticity of total defense expenditures with respect to initial indemnity reserve drops from 0.06 to 0.03 when adding controls for injury type.

The level of total defense expenditures exhibits the expected positive elasticity with respect to the initial defense reserve, and the magnitude of the elasticity is more than double that for initial indemnity reserves. The most noteworthy initial expense reserve effect is the negative elasticity for in-house counsel expenses in both Tables 2 and 3. Whereas cases with large initial expense reserves have higher outside counsel expenses, in-house counsel costs are less, which is another manifestation of larger scale cases being handled by outside counsel.

The estimated coefficients for the case complexity variable, 'multiple defendants,' are consistent with this general pattern of litigation resource allocation as well. The presence of multiple defendants boosts litigation costs overall as well as the costs of the different expense components, with the exception of in-house counsel expenses. The more complex claims reflected in the presence of multiple defendants have a significant negative effect on in-house counsel expenditures.

Relative to the omitted category of auto liability, all liability categories have significant positive effects on total defense expenditures. The most expensive insurance groups, controlling for reserve amounts, are medical professional liability and other professional liability. Notably, these two insurance lines draw much more on outside counsel and less on in-house counsel relative to auto liability. Similarly, general liability also has a defense expenditure mix more skewed toward outside counsel. The only

insurance line that places a greater reliance on in-house counsel than auto insurance is multiperil liability. This type of insurance, which focuses on damages to the commercial enterprise, primarily involves insured commercial establishments filing claims for liability losses rather than individual third parties filing claims against companies or physicians.

The time trend variable indicates that controlling for the other included variables in Table 3, there is a 2.2 percent annual growth rate in total defense expenditures. In-house counsel expenditures have been growing at the highest rate, with an annual growth rate of 2.8 percent, and other expenses have declined over time, with an annual rate of decline of 3.2 percent, after taking into account the reserve amounts and other factors.

Other determinants of litigation expenses include the nature of the injury involved in the claim. Although the Texas short form data for smaller claims do not include information on the nature of the injury, the long form data for payments of at least $25,000 do include this information. In Table 3 we add an indicator for whether the injury was fatal as well as the set of 17 injury categories. These injury categories are not mutually exclusive because insurers could report multiple injuries associated with the same claim. However, since these injuries are not reported for any short form claim, the coefficients reflect the effect of reporting the injury relative to the claim not having a report of that injury.

The injury variables reflect both case complexity and the stakes of the claim relative to short form claims or not having the injury. Every injury category variable has a statistically significant positive effect on total defense expenditures. The largest effects are for fatal injuries and very serious injury types: brain damage, spinal cord injuries,

toxic systemic poisonings, amputations, and burns – heat. However, the injury variables have opposite effects on spending on in-house and outside counsel. In all but one instance in which the injury variable has a statistically significant effect on expenditures at the 5 percent level, the direction of the effect is to increase spending on outside counsel and reduce spending on in-house counsel. The exception is back injuries, which increase both in-house counsel expenses and outside counsel expenses. These results are consistent with the more general pattern in the regressions that increasing the stakes and complexity of a claim raises overall defense costs, increases the reliance on outside counsel, and decreases the reliance on in-house counsel.

While one would expect the relative share of in-house expenses to be less for severe injuries, we observe the stronger result that the absolute level of in-house counsel expenses is less. In short, the high stakes severe cases make it worthwhile to spend more on litigation costs but diminish the role played by in-house counsel, which is better suited to more routine auto liability cases.

6. Conclusion

Using Texas Department of Insurance closed commercial claims data for the 1988–2004 period, we show that insurers' tort defense expenses are substantial, ranging from just under one-fifth of payment for auto liability to almost one-third of payment for other professional liability. Defense expenditures have grown at an annual rate of 2.2 percent, controlling for liability lines, reserve amounts, and injury type. These levels and the variation across insurance lines and type of claims are systematic and accord with the predictions of economic theory. The transactions costs of tort liability are not fixed costs,

but are the result of economic decisions that can be illuminated using an economic framework.

The main factors that influence defense expenditures and the allocation of expenditures between in-house and outside counsel are the scale and the complexity of the case. The scale of the claim is indicated by the reserve amounts, whether the case involved a fatality, and injury severity. Claims with higher stakes entail greater overall defense costs, higher outside counsel costs, and lower in-house counsel costs. Complexity of the case is indicated by whether there are multiple defendants, by insurance line, and injury type. More complex cases have effects that parallel those of the overall scale of the case in that greater case complexity raises total defense costs, increases reliance on outside counsel, and decreases the utilization of in-house counsel. These results accord with economic predictions and in some instances resolve ambiguities in the theory.

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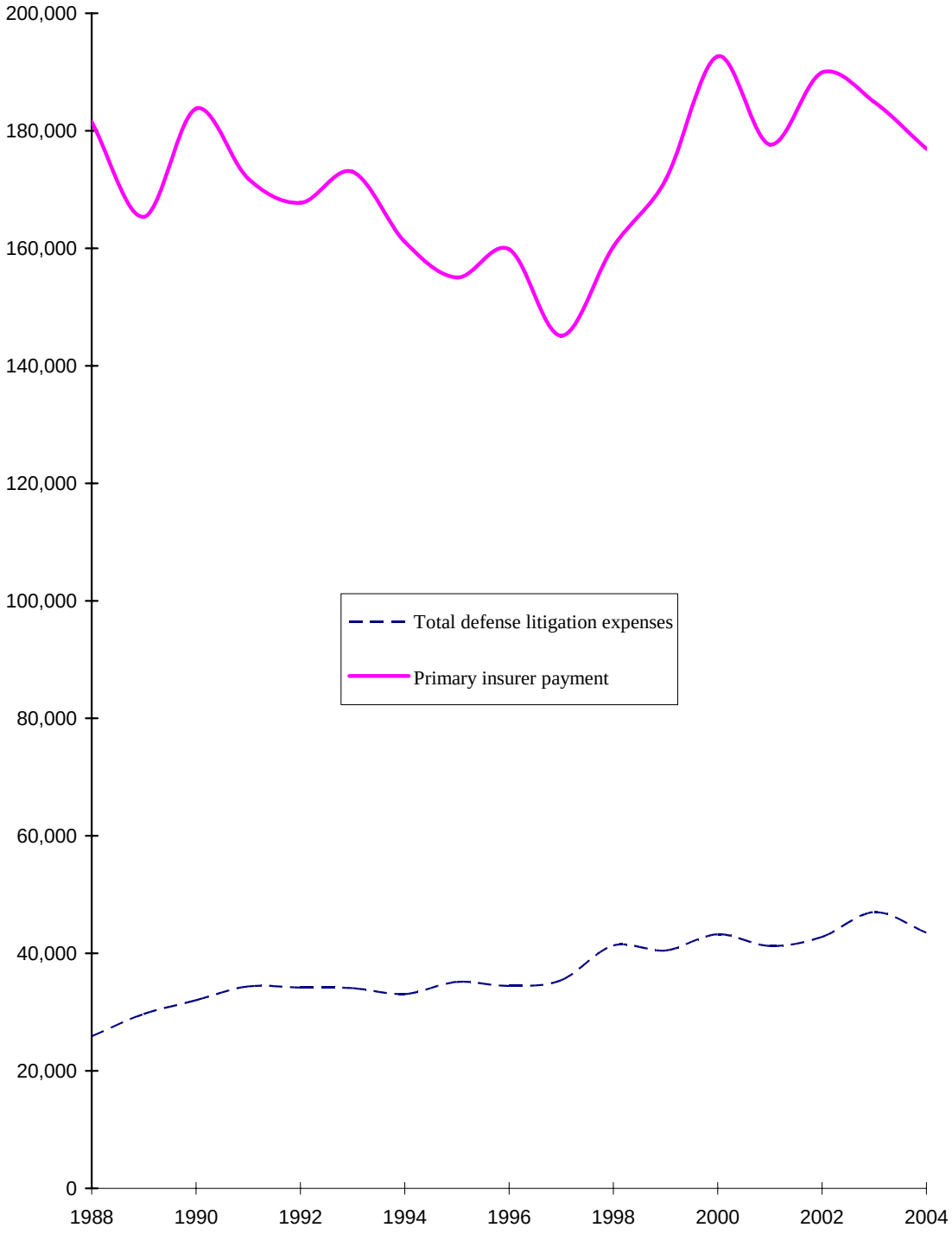
Figure 1: Total Defense Litigation Expenses and Primary Insurer Payment per Claim, 1988–2004



Note: Figure reports average values per claim in 2004$. The 'high anomaly claims' of 1997 are excluded.

Table 1: Litigation Expenses per Claim by Insurance Policy Type

	General liability	Auto liability	Multiperil liability	Medical professional liability	Other professional liability	All lines
In-house counsel[a]	1,012 (5,645)	1,036 (4,450)	1,796 (7,872)	3,766 (17,175)	498 (3,804)	1,606 (8,829)
Outside counsel[a]	26,369 (78,561)	17,163 (97,291)	24,262 (55,062)	43,308 (67,613)	42,956 (79,731)	25,846 (81,658)
Other expenses[a]	6,015 (18,450)	4,872 (37,991)	7,295 (38,615)	14,169 (26,034)	7,244 (14,487)	7,211 (31,239)
Total defense expenses[a]	33,396 (88,154)	23,071 (129,479)	33,353 (76,402)	61,243 (83,964)	50,698 (85,049)	34,662 (103,476)
Primary insurer payment[a]	113,373 (292,898)	125,396 (246,160)	120,529 (215,744)	243,389 (475,018)	161,733 (289,435)	161,072 (353,660)
Average defense expenses/average primary insurer payment	0.295	0.184	0.277	0.252	0.313	0.215
Growth rate of average defense expenses[b]	1.4*	3.5*	2.8*	3.7*	2.4*	2.9*
Growth rate of (average defense expenses/average primary insurer payment) [b]	2.2*	3.7*	3.0*	2.9*	1.0	2.6*
Observations	30,137	34,535	14,997	16,602	1,049	97,320

a. Values in row are in 2004$ and are average values per claim with standard deviations in parentheses.
b. Growth rates estimated from regression of log of the indicated dependent variable on a time trend. Regressions for General Liability and All Lines include an indicator variable for 'high claim anomaly' claims of 1997. * indicates growth rate significant at 5 percent level.

Table 2: Litigation Expenses Regressions[a]

	Log (total defense expenses)	Log (in-house counsel)	Log (outside counsel)	Log (other expenses)
Log (initial indemnity reserve)	0.061**	-0.011*	0.068**	0.094**
	(0.002)	(0.005)	(0.005)	(0.006)
Log (initial expense reserve)	0.138**	-0.117**	0.269**	0.070**
	(0.003)	(0.009)	(0.010)	(0.010)
Multiple defendants	0.523**	-0.098**	0.664**	0.632**
	(0.008)	(0.023)	(0.024)	(0.025)
General liability	0.461**	-0.113**	0.617**	0.491**
	(0.010)	(0.026)	(0.027)	(0.029)
Multiperil liability	0.300**	0.387**	0.007	0.488**
	(0.011)	(0.030)	(0.031)	(0.033)
Medical professional liability	0.731**	-0.031	0.534**	0.884**
	(0.012)	(0.032)	(0.034)	(0.036)
Other professional liability	0.635**	-0.810**	1.412**	-0.169
	(0.034)	(0.093)	(0.098)	(0.104)
Time trend	0.025**	0.026**	0.007**	-0.029**
	(0.001)	(0.002)	(0.002)	(0.002)
High claim anomaly 1997	-1.188**	-1.233**	-0.050	-6.011**
	(0.023)	(0.064)	(0.068)	(0.072)
Expense reserve reported as zero	0.989**	-0.936**	2.008**	0.524**
	(0.030)	(0.083)	(0.087)	(0.093)
Constant	7.348**	2.142**	5.045**	4.809**
	(0.032)	(0.087)	(0.091)	(0.097)
Adjusted R-squared	0.28	0.02	0.05	0.22

a. Standard errors in parentheses. + significant at 10 percent level; * significant at 5 percent level; ** significant at 1 percent level. Number of observations is 97,320.

Table 3: Litigation Expenses Regressions Including Injury Type[a]

	Log (total defense expenses)	Log (in-house counsel)	Log (outside counsel)	Log (other expenses)
Log (initial indemnity reserve)	0.028**	0.0003	0.023**	0.052**
	(0.002)	(0.005)	(0.005)	(0.006)
Log (initial expense reserve)	0.117**	-0.105**	0.236**	0.052**
	(0.003)	(0.009)	(0.010)	(0.010)
Multiple defendants	0.301**	-0.025	0.363**	0.372**
	(0.008)	(0.023)	(0.024)	(0.026)
General liability	0.463**	-0.077**	0.587**	0.543**
	(0.009)	(0.027)	(0.028)	(0.029)
Multiperil liability	0.321**	0.412**	0.006	0.551**
	(0.010)	(0.030)	(0.031)	(0.033)
Medical professional liability	0.648**	0.071*	0.356**	0.966**
	(0.012)	(0.035)	(0.037)	(0.039)
Other professional liability	0.571**	-0.706**	1.246**	-0.119
	(0.032)	(0.094)	(0.098)	(0.104)
Death	0.886**	-0.357**	1.263**	1.012**
	(0.012)	(0.035)	(0.037)	(0.039)
Amputation	0.690**	-0.118	0.884**	1.014**
	(0.030)	(0.086)	(0.090)	(0.096)
Burns – heat	0.648**	-0.429**	1.018**	1.123**
	(0.028)	(0.080)	(0.084)	(0.089)
Burns – chemical	0.390**	-0.123	0.506**	0.600**
	(0.050)	(0.144)	(0.150)	(0.160)
Systemic poisoning – toxic	0.701**	-0.147	0.796**	-0.033
	(0.035)	(0.100)	(0.104)	(0.110)
Systemic poisoning – other	0.209**	-0.235	0.410+	0.215
	(0.074)	(0.212)	(0.221)	(0.235)
Eye injury/blindness	0.449**	-0.224*	0.662**	0.538**
	(0.033)	(0.095)	(0.099)	(0.106)
Respiratory condition	0.340**	-0.137	0.549**	-0.190+
	(0.031)	(0.091)	(0.095)	(0.101)
Nervous condition	0.367**	-0.316**	0.801**	0.404**
	(0.031)	(0.089)	(0.093)	(0.099)
Hearing loss	0.192**	-0.058	0.149	0.311+
	(0.052)	(0.149)	(0.155)	(0.165)
Circulatory condition	0.256**	-0.322*	0.652**	0.164
	(0.044)	(0.126)	(0.132)	(0.140)
Multiple injuries	0.274**	0.044+	0.241**	0.666**
	(0.009)	(0.026)	(0.027)	(0.029)
Back injury	0.407**	0.119**	0.308**	0.780**
	(0.009)	(0.025)	(0.026)	(0.028)

Skin disorder	0.345**	-0.550**	0.994**	-0.331+
	(0.055)	(0.157)	(0.164)	(0.174)
Brain damage	0.968**	-0.166**	1.161**	1.097**
	(0.019)	(0.054)	(0.056)	(0.060)
Scarring	0.109**	-0.194**	0.365**	-0.017
	(0.022)	(0.064)	(0.066)	(0.071)
Spinal cord injuries	0.880**	-0.261**	1.166**	0.745**
	(0.030)	(0.085)	(0.089)	(0.095)
Other injuries	0.400**	0.032	0.365**	0.538**
	(0.010)	(0.030)	(0.031)	(0.033)
Time trend	0.022**	0.028**	0.004	-0.032**
	(0.001)	(0.002)	(0.002)	(0.002)
High claim anomaly 1997	-1.149**	-1.156**	-0.084	-5.585**
	(0.023)	(0.066)	(0.069)	(0.073)
Expense reserve reported as zero	0.815**	-0.842**	1.738**	0.375**
	(0.029)	(0.083)	(0.087)	(0.092)
Constant	7.522**	1.909**	5.449**	4.806**
	(0.031)	(0.088)	(0.092)	(0.098)
Adjusted R-squared	0.35	0.02	0.07	0.24

a. Standard errors in parentheses. + significant at 10 percent level; * significant at 5 percent level; ** significant at 1 percent level. Number of observations is 97,320.